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IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF GEORGIA  
ATLANTA DIVISION

JAMES N. HATTEN, CLERK  
By: *Denya Bankhead*  
Deputy Clerk

CANON INC., )  
)  
Plaintiff, )  
)  
v. )  
)  
COLOR IMAGING, INC. and )  
GENERAL PLASTIC INDUSTRIAL )  
CO., LTD., )  
)  
Defendants. )

CIVIL ACTION NO.:  
1:11-cv-03855-AT-JSA

**SPECIAL MASTER'S REPORT AND RECOMMENDATIONS:  
PLAINTIFF CANON INC.'S MOTION FOR SUMMARY JUDGMENT  
OF NO INVALIDITY OF U.S. PATENT NO. 7,646,012**

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**I. INTRODUCTION:**

This patent infringement action is now before the Court on Canon's Motion for Summary Judgment of No Invalidity of U.S. Patent No. 7,647,012 (hereafter "the '012 patent") (the "Canon MSJ"). Initially, the Defendants, Color Imaging, Inc. and General Plastic Industrial Co., Ltd. (hereafter the "Defendants") took the position that the asserted claims (24, 25 and 30) were invalid under 35 U.S.C. §§ 101, 102, 103 and 112. However, as the briefing on Canon's MSJ progressed, the Defendants conceded that summary judgment should be granted as to the 35 U.S.C. §§ 101 and 102 defenses. In addition, Defendants made no substantive arguments in support of the 35 U.S.C. § 112 defense. As a result of the foregoing, Defendants' only remaining invalidity defense rests on proving that the invention is obvious under 35 U.S.C. § 103. In brief, a party asserting obviousness must prove that the "differences between the [patented subject matter] and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention was made to a person having ordinary skill in the art to which said subject pertains."

In order to understand the issues involved in Canon's MSJ, the best starting point is a detailed review of the "subject matter" of the '012 patent. Such a

summary was provided in the Special Master's Report and Recommendations relating to claims construction and, for the convenience of the Court, is duplicated below. Following this review, this report provides a brief summary of the governing legal principles; an edited version of the parties arguments, and finally, the Special Master's recommendation as to the disposition of Canon's MSJ.

## **II. OVERVIEW OF THE '012 PATENT**

### **A. The Subject Matter**

The following general description of the '012 patented subject matter and its field of use, is a slightly edited version (eliminating any argument) of the description that Canon provided the Court in connection with the *Markman* claim construction briefings.

The '012 patent describes and claims a toner supply container that is usable in, for example, a copy machine. At a basic level, a copier works by adhering a fine powdery substance, called toner, to a sheet of paper in a pattern that matches the text or image being copied. Because toner is used each time a copy is made, from time to time a copier's toner supply must be replenished. Because toner is messy, manufacturers often supply toner in the form of a sealed container that can be installed in the copier whenever a fresh supply of toner is needed. This allows users to replenish their own toner, without getting the messy substance on their

hands or clothing. When the toner supply is depleted, the user removes the container and replaces it with a full one, so that from the user's perspective, replenishing the copier's toner supply is as simple as switching out containers.

The ideal toner supply container is one that is easily installable and removable for a user, reliably seals the toner within the container when the container is outside the copier, and discharges the proper amount of toner at the right time when installed in the copier.

In FIG. 3 of the '012 patent, shown below, an exemplary toner supply container, is denoted by reference number 1 and a main assembly of a copier is denoted by reference number 100. The toner supply container is installed in the copier by inserting it in the direction indicated by arrow a.



FIG. 3

The toner supply container has an opening 1a at one end. The opening is sealed when the toner supply container is outside of the copier. When the toner supply container is installed in the copier, two things happen: (1) the opening is unsealed; and (2) when the copier is being used, the toner supply container is rotated. The rotation of the toner supply container causes the toner inside of it to be fed out of the opening and into a toner hopper within the copier, so that the toner in the hopper can be used to make copies.

The '012 patent discloses several examples of sealing members suitable for sealing and unsealing the opening in the container body. One such sealing member is shown in FIGS. 23A and 23B of the '012 patent, which are reproduced below.



4.

FIG. 23A

FIG. 23B

The sealing member, denoted generally by reference number 2, has two main portions: a sealing portion denoted generally by reference number 2b, and a coupling portion denoted generally by reference number 2c. The sealing portion

fits snugly within the opening in order to seal the toner within the container body. The coupling portion is engageable with a hollow cylinder driving member and a hollow cylinder that is substantially concentric with the hollow cylindrical driving member on the copier (seen below in Figure 14 and part of the claimed invention). This engagement is necessary in order to (1) move the sealing member and the container body relatively away from each other to unseal the opening, and (2) receive rotational drive force from the copier. To these ends, the coupling portion includes supporting portions 2f, engaging portions 3, and displacing force receiving portions 4, which are constructed as follows:

- The supporting portions 2f are elastically displaceable in an inward direction and elastically restorable in an outward direction.
- The engaging portions 3 are provided at the free ends of the supporting portions, and, as such, displace inwardly and outwardly along with the supporting portions. Each engaging portion has two sub-portions—a rotational force receiving portion and a locking portion—which, although not labeled in FIGS. 23A and 23B, are labeled in other figures of the '012 patent, *e.g.*, reference numbers 3a and 3b, respectively, in FIGS. 12 and 13.
- The displacing force receiving portions 4 lie between the engaging portions and the sealing portion, *i.e.*, they are closer to the container body than are



the engaging portions. Each of the displacing force receiving portions extends radially outwardly to a greater extent than the radially outermost part of each engaging portion.

In the example shown in FIGS. 23A and 23B, there are four supporting portions, four engaging portions, and four displacing force receiving portions, but the precise number of each of these portions can vary. For example, in the example illustrated in FIGS. 35A, 35B, and 35C of the '012 patent, shown below, there are only two supporting portions, two engaging portions, and two displacing force receiving portions.



FIG. 35A

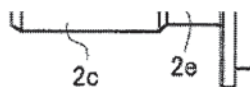


FIG. 35B



FIG. 35C

As noted above, the coupling portion is engageable with a part in the copier—specifically, with a part referred to earlier as a hollow cylindrical driving member. An example of a hollow cylindrical driving member is depicted as item 20 in FIG. 14 of the '012 patent (the left-hand portion of which is reproduced below). This driving member contains a slot 20h that extends in a circumferential



direction. The slot is interrupted by a pair of ribs 20a, which in this example are spaced approximately 180 degrees apart. A motor (not shown) within the copier rotates the driving member. That member, in turn, rotates the toner supply container through the abutment of one or both ribs with the rotational force receiving portion of one or more engaging portions of the sealing member.



FIG. 14

When the toner supply container is installed in the copier, the supporting portions of the sealing member first elastically displace inwardly so that the coupling portion can enter the driving member, and then elastically restore outwardly (that is, back to their original position) so that the engaging portions engage with the slot in the driving member. FIG. 24 of the '012 patent, shown below, provides a cross-sectional view of the state in which the coupling portion of

the sealing member has entered the driving member 20 and the engaging portions 3 have engaged with the slot of the driving member.<sup>1</sup>

FIG. 24

Once the engaging portions have engaged with the slot of the driving member, the driving member and the container body are moved relatively away from each other. This relative movement may be caused, for example, by a manual lever or by the closing of a cover on the copier. As the driving member and the container body move relatively away from each other, so too do the sealing member and the container body. This is because the locking portions of the engaging portions are abutted against an interior surface of the slot of the driving member. Therefore, as the driving member and the container body pull away from each other, the engaging portions remain engaged with the slot of the driving

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<sup>1</sup> In addition to showing the toner supply container, the sealing member, and the driving member, FIG. 24 also shows a hollow cylinder 21. The hollow cylinder, not to be confused with the hollow cylindrical driving member 20, is a part of the copier that is concentric with and movable relative to the driving member. The hollow cylinder plays a role in disengaging the engaging portions from the slot in the driving member when the container is removed from the copier. This is discussed in more detail below.

member and the sealing member is pulled out of the opening in the container body. FIG. 25A, shown below, illustrates the unsealed state in which the driving member 20, and with it, the sealing member 2, have been moved relatively away from the container body.

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FIG. 25A

In this state, with the opening unsealed, the driving member rotates the toner supply container through the abutment of one or both ribs with the rotational force receiving portion of one or more engaging portions of the sealing member. This rotation of the toner supply container causes the toner to be fed out of the opening in the container body and into the toner hopper within the copier.

To remove the toner supply container from the copier, the engaging portions are disengaged from the slot in the driving member and the sealing portion of the sealing member is resealed within the opening of the container body. This is illustrated below in FIGS. 25B and 25C, which show the hollow cylinder 21

advancing toward the container body in direction a. As the hollow cylinder advances toward the container body, two things happen: (1) the hollow cylinder 21 forces the displacing force receiving portions 4 inwardly, causing the supporting portions to elastically displace in an inward direction and the engaging portions 3 to disengage from the slot (shown in FIG. 25B); and (2) the hollow cylinder 21 pushes the sealing member 2 toward the container body 1 and snugly fits the sealing portion back into the opening 1a (shown in FIG. 25C). At this point, the sealing member is disengaged from the driving member, the opening is resealed, and the toner supply container can be safely removed from the copier without spillage of any toner that may remain in the container.

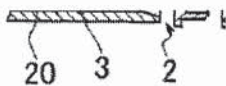


FIG. 25B



FIG. 25C

The '012 patent discloses that the toner supply container can be removed from the copier in other ways as well. For example, at column 8, line 57 through column 9, line 15, the '012 patent describes an embodiment in which the container body is moved toward the sealing member while the sealing member is locked in

the copier to snugly fit the sealing portion back into the opening. Next, the hollow cylinder applies a releasing force to the displacing force receiving portions to elastically displace the supporting portions inwardly and disengage the engaging portions from the slot in the driving member. The container body and sealing member then are retracted so that the toner supply container can be removed.

As noted earlier, Canon has asserted only three claims of the '012 patent in this lawsuit, namely, independent claim 24 and dependent claims 25 and 30. Claim 24 reads as follows:

24. A toner supply container detachably mountable to an assembly of an electrophotographic imaging forming apparatus having a hollow cylindrical driving member that has a slot formed therein, which slot extends in a circumferential direction and defines a plurality of interior surfaces of the hollow cylindrical driving member, and a hollow cylinder that is substantially concentric with the hollow cylindrical driving member, said toner supply container comprising:

i) a container body configured to contain toner and rotatable about an axis thereof, said container body including an opening provided at one axial end portion thereof and configured to permit discharge of toner contained in said container body; and

ii) a sealing member provided at the one axial end portion of said container body, said sealing member being movable relative to said



container body in an axial direction of said container body, said sealing member including:

ii-i) a sealing portion provided at a side adjacent said container body and configured to seal said opening when said sealing member and said container body are in a first position relative to one another, said opening becoming unsealed by relative movement of said sealing member and said container body away from one another from the first position to a second position relative to one another; and

ii-ii) a coupling portion provided at a side remote from said container body and configured and positioned to receive a rotational drive force, said coupling portion including:

ii-ii-i) a supporting portion provided on said sealing portion, said supporting portion being elastically displaceable in an inward direction toward the axis of said container body and elastically restorable in an outward direction away from the axis of said container body;

ii-ii-ii) an engaging portion provided at a free end of said supporting portion, said engaging portion configured and positioned to (a) displace in an inward direction with said supporting portion as said engaging portion enters the hollow cylindrical driving member and (b) engage with the slot of the hollow cylindrical driving member when said supporting portion elastically restores in an outward direction, said engaging portion including:



ii-ii-ii-i) a rotational force receiving portion capable of being abutted in a circumferential direction of the hollow cylindrical driving member by at least a portion of a first interior surface of the hollow cylindrical driving member defined by the slot to receive a rotational drive force from the hollow cylindrical driving member to rotate said container body; and

ii-ii-ii-ii) a locking portion capable of being abutted in an axial direction of the hollow cylindrical driving member by at least a portion of a second interior surface of the hollow cylindrical driving member defined by the slot to prevent the sealing member from moving in the axial direction of said container body when said container body moves away from the hollow cylindrical driving member, thus causing the relative movement of said sealing member and said container body from the first position, in which said opening is sealed, to the second position, in which said opening is unsealed; and

ii-ii-iii) a displacing force receiving portion provided at a position closer to said container body than said engaging portion, said displacing force receiving portion configured and positioned to receive a force from the hollow cylinder and cause said supporting portion to elastically displace in an inward direction, wherein a radially outermost part of said displacing force receiving portion is more remote from a rotation axis of said coupling portion than a radially outermost part of said engaging portion.

**B. The Claimed Invention**

Following submission of the Special Master's Report and Recommendations relating to the claim construction issues and a hearing on the objections from the parties, the Court entered an order adopting the recommendations of the Special Master. In brief, the Court agreed with the Special Master that independent Claim 24 was for a combination patent that included both the parts on the electrophotographic imaging forming apparatus and the parts on the toner bottle, fully described above. Defining the limitations of Claim 24 in this manner has a direct impact on the prior art to be considered as part of the §103 obviousness analysis. Also, as will be seen in connection with Defendants' motion for summary judgment, it is important in connection with Defendants' exhaustion defense.

**III. LEGAL PRINCIPLES**

**A. Summary Judgment**

The Court is, of course, familiar with the law in this area but for the sake of completeness, the general principles governing summary judgment are included here. Summary judgment is appropriate when "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). A factual dispute is "genuine" if a reasonable jury could return a verdict for the non-

movant and is “material” if it would affect the outcome of the case. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). “[T]he mere existence of *some* alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment.” *Id.* at 247-48.

Rule 56 “mandates the entry of summary judgment, after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial.” *Celotex*, 477 U.S. at 322. “[T]he burden on the moving party may be discharged by ‘showing’—that is, pointing out to the district court—that there is an absence of evidence to support the nonmoving party’s case.” *Id.* at 325.

## **B. Validity**

A patent is presumed valid, and the burden of establishing invalidity rests on the party asserting invalidity. 35 U.S.C. § 282. Invalidity must be proved by clear and convincing evidence, *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2242 (2011), that is, evidence that “places in the fact finder ‘an abiding conviction that the truth of [the] factual contentions are highly probable.’” *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 994 (Fed. Cir. 2009) (quoting *Colorado v. New Mexico*, 467 U.S. 310, 316 (1984)). The only remaining validity issue in

Canon's MSJ relates to Defendants' assertion that the '012 patent is obvious under 35 U.S.C. §103.

35 U.S.C. § 103 requires that an invention be nonobvious. As noted earlier, a party asserting obviousness must prove that "the differences between the [patented subject matter] and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a) (pre-AIA). Obviousness is a question of law based on underlying facts<sup>2</sup>, including the scope and content of the prior art, the difference between the claims and the prior art, the level of ordinary skill in the art, and any objective indicia of nonobviousness. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).

It is well established that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). "This is so because inventions in most, if not all, instances rely

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<sup>2</sup> Notwithstanding the hybrid legal/factual nature of the defense, courts regularly find nonobviousness as a matter of law. See, e.g., *Cheese Sys., Inc. v. Tetra Pak Cheese & Powder Sys., Inc.*, 725 F.3d 1341, 1356 (Fed. Cir. 2013) (affirming grant of summary judgment of nonobviousness); *ActiveVideo Networks, Inc. v. Verizon Comms., Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (affirming grant of JMOL of nonobviousness); *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1364 (Fed. Cir. 2011) (affirming grant of summary judgment of nonobviousness); *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1379 (Fed. Cir. 2011) (reversing denial of JMOL of non invalidity, including nonobviousness).



upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *Id.* at 418-19. For this reason, the proper focus of § 103 is on the claimed invention *as a whole*, and not on the invention’s individual elements. *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1275 (Fed. Cir. 2004). Additionally, an obviousness analysis should not involve the use of hindsight, or a reading of the teachings of the invention into the prior art. *Graham*, 383 U.S. at 36.

#### **IV. THE PARTIES POSITIONS**

##### **A. CANON’S OPENING ARGUMENTS**

###### **1. Background Information**

Defendants first disclosed the bases for their §103 invalidity assertions in an initial set of invalidity contentions that they served pursuant to Local Patent Rule 4.3 on May 8, 2012. *See* D.I. 90. Following the Court’s adoption of the Special Master’s claim constructions, Defendants served an amended set of invalidity contentions (“Amended Invalidity Contentions”) on April 9, 2014. *See* Huang Ex. 2. With their Amended Invalidity Contentions, Defendants included claim charts purporting to show how claims 24, 25, and 30 of the ’012 patent are obvious over nine alleged prior art references. *See id.* at Exs. A1-A4.

On May 12, 2014, Defendants served the Expert Report of Dr. B. E.

Springett Regarding Invalidity of United States Patent No. 7,647,012 (“Springett Initial Report”). *See* Huang Ex. 5. In the Springett Initial Report, Defendants’ expert, Dr. Springett, purported to show where each limitation of the asserted claims can be found individually in the prior art (including but not limited to the nine references charted in the Amended Invalidity Contentions), but he did not identify any specific combination or modification of the prior art that would render the claims obvious. *See id.* at pp. 34-108.

On June 16, 2014, Canon served the Expert Report of Robert H. Sturges, Jr., Ph.D., PE Regarding the Validity of U.S. Patent No. 7,647,012 (“Sturges Validity Report”). *See* Huang Ex. 6. In the Sturges Validity Report, Canon’s expert, Dr. Sturges, explained in detail why the nine references that Defendants charted in their Amended Invalidity Contentions do not anticipate or render obvious the asserted claims of the ’012 patent. *See id.* at pp. 29-255.

On June 30, 2014, Defendants served the Rebuttal Expert Report of Dr. B. E. Springett Regarding Invalidity of United States Patent No. 7,647,012 (“Springett Rebuttal Report”). *See* Huang Ex. 7. In this report, Dr. Springett conceded that the prior art does not anticipate any of the asserted claims, *see id.* at p. 29, ¶ 63, but nevertheless maintained that the claims are obvious.



On October 10, 2014, Canon filed a motion to strike improper portions of the Springett Initial and Rebuttal Reports that relied on prior art not charted and indefiniteness theories not disclosed in Defendants' Amended Invalidity Contentions in violation of Local Patent Rule 4.3, and to exclude Dr. Springett from offering related testimony. *See* D.I. 297. The Court granted-in-part and denied-in-part Canon's motion, holding that Dr. Springett cannot testify regarding any references other than the nine references that Defendants charted in their Amended Invalidity Contentions. *See* D.I. 307; Huang Ex. 8 at 73:12-95:13.

## **2. Defendants Cannot Establish *Prima Facie* Obviousness**

As noted above, merely arguing that each limitation of a patent claim was individually known or obvious is insufficient to establish the obviousness of the claim as a whole. *KSR*, 550 U.S. at 418; *see also Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075, 1086 (Fed. Cir. 2008) ("The determination of obviousness is made with respect to the subject matter as a whole, not separate pieces of the claim."). Here, Defendants (in their invalidity contentions) and Dr. Springett (in his expert reports) have argued only that individual claim limitations are known or obvious, and have not proposed a single specific combination or modification of the prior art that allegedly meets *all* of the limitations of claim 24.

Indeed, at his deposition Dr. Springett conceded that he wrote his report on an “element-by-element basis, recognizing that things had to marry backwards.” Huang Ex. 14 at 157:12-15. This element-by-element, “marry backwards” approach (which Dr. Springett later characterized as “backward-looking,” *id.* at 159:17) is precisely the kind of hindsight-driven analysis that courts have instructed is improper. *See, e.g., Ruiz*, 357 F.3d at 1275 (“The ‘as a whole’ instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result—often the very definition of invention.”).

As a separate and distinct reason why there can be no obviousness as a matter of law, Defendants and Dr. Springett have failed to show that each and every claim limitation is taught by the prior art or would have been obvious from the prior art. One (but not the only) limitation that the prior art does not teach is the “displacing force receiving portion” limitation of claim 24, which recites:

a displacing force receiving portion provided at a position closer to said container body than said engaging portion, said displacing force receiving portion configured and positioned to receive a force from the hollow cylinder and cause said supporting portion to elastically displace in an inward direction, wherein a radially outermost part of said displacing force receiving portion is more remote from a rotation axis of said coupling portion than a radially outermost part of said engaging portion.

During the claim construction phase of this case, the Court adopted the Special Master's recommendation and construed the portion of this claim limitation highlighted in yellow above to mean "a portion of the coupling portion that is provided at a position closer to the container body than the position of the engaging portion is to the container body," and determined that the portion of this limitation highlighted in green above should be given its plain meaning. D.I. 168 at pp. 122-123, 129-130; D.I. 169. In each case, the Special Master and the Court adopted Canon's position and rejected Defendants' position.

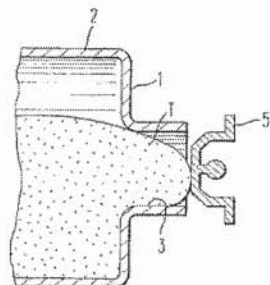
In the Amended Invalidity Contentions and the Springett Initial and Rebuttal Reports, Defendants and Dr. Springett asserted that the following five references disclose the "displacing force receiving portion" limitation: (1) U.S. Patent No. 5,765,079 ("Yoshiki '079") (Huang Ex. 9); (2) U.S. Patent No. 6,298,208 ("Kawamura '208") (Huang Ex. 10); (3) U.S. Patent No. 6,698,966 ("Hilton '966") (Huang Ex. 11); (4) U.S. Patent No. 5,903,806 ("Matsuoka '806") (Huang Ex. 12); and (5) U.S. Patent No. 6,501,990 ("Sundberg '990") (Huang Ex. 13). But, as



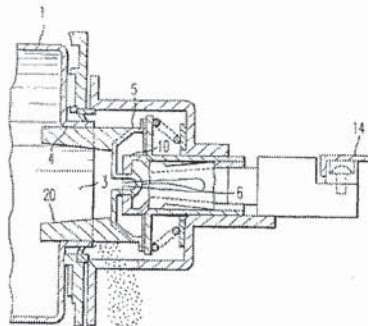
explained below, none of these references discloses or makes obvious the “displacing force receiving portion” limitation.

**a. Yoshiki '079**

Yoshiki '079 discloses a toner bottle for use in an image forming apparatus such as a printer, copy machine, or facsimile machine. Before the invention of Yoshiki '079, toner tended to accumulate near the opening of the toner bottle, as depicted in Figure 2 of Yoshiki '079, which is shown on the left below.



*FIG. 2  
PRIOR ART*

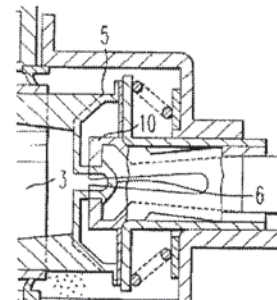


*FIG. 4*

To solve this problem, the Yoshiki '079 inventors came up with a toner bottle cap design that prevents toner from blocking the opening of the toner bottle. An example of the cap is depicted in Figure 4 of Yoshiki '079, which is shown on the right above. In Figure 4, the cap is denoted by reference number 5. The side of the cap facing the toner bottle includes toner scraping members 20. The other side of the cap includes a tab portion 6. When the toner bottle is inserted into the copy machine, a chuck 10 in the copy machine grasps tab portion 6 and pulls cap 5 away

from the toner bottle opening to the open position shown in Figure 4. In this open position, toner scraping members 20 remain within the toner bottle opening, but toner is able to flow out of the opening through the space between the toner scraping members. Once removed, cap 5 is held fixed by chuck 10 while the toner bottle is rotated to dispense toner. As the toner bottle rotates with cap 5 and toner scraping members 20 held fixed, any toner adhering to the inside of the opening is scraped away by the toner scraping members and toner blockages are prevented.

Defendants assert that “the inner surface of cap 5 (close to tab portion 6) facing chuck 10” in Yoshiki ’079 satisfies the “displacing force receiving portion” limitation of claim 24 of the ’012 patent . Huang Ex. 2 at Ex. A1, pp.



45-47; Huang Ex. 5 at Ex. B, pp. 65-67. But the inner surface of cap 5 does not meet the “displacing force receiving portion” limitation for multiple reasons.

*First*, claim 24 as construed by the Court requires the displacing force receiving portion to be “a portion of the coupling portion.”<sup>3</sup> D.I. 168 at p. 123. In Yoshiki ’079, Defendants contend that tab portion 6 is the claimed coupling portion. *See* Huang Ex. 2 at Ex. A1, pp. 12-13; Huang Ex. 5 at Ex. B, pp. 25-26. But “the inner surface of cap 5” that Defendants contend is the claimed displacing

<sup>3</sup> Notably, the claim construction advanced by Defendants and rejected by the Court did not require the displacing force receiving portion to be a “portion of the coupling portion.” *See* D.I. 168 at p. 119.

force receiving portion is not a portion of the tab portion 6 that they contend is the claimed coupling portion. To the contrary, by explaining that the inner surface of cap 5 is “close to tab portion 6,” Defendants have conceded that the inner surface of cap 5 and tab portion 6 are distinct, and thus, Defendants’ asserted displacing force receiving portion is not a portion of their asserted coupling portion.

*Second*, claim 24 recites that the displacing force receiving portion is configured and positioned to receive a force from the hollow cylinder and cause the supporting portion to elastically displace in an inward direction. In Yoshiki ’079, the inner surface of cap 5 is not configured and positioned to receive a force from the part that Defendants contend is the claimed hollow cylinder (the unlabeled “slidable hollow member” that chuck 10 slides within, *see* Huang Ex. 2 at Ex. A1, pp. 6-7; Huang Ex. 5 at Ex. B, p. 8), much less configured and positioned to cause a supporting portion to elastically displace in an inward direction. Indeed, Defendants and Dr. Springett do not even contend that the inner surface of cap 5 is configured and positioned to receive a force from their asserted hollow cylinder. Rather, they assert that the inner surface of cap 5 is configured and positioned to receive a displacing force from chuck 10, which they contend is the claimed hollow cylindrical driving member rather than the claimed hollow cylinder. *See* Huang Ex. 2 at Ex. A1, pp. 1-2; Huang Ex. 5 at Ex. B, pp. 4-5.

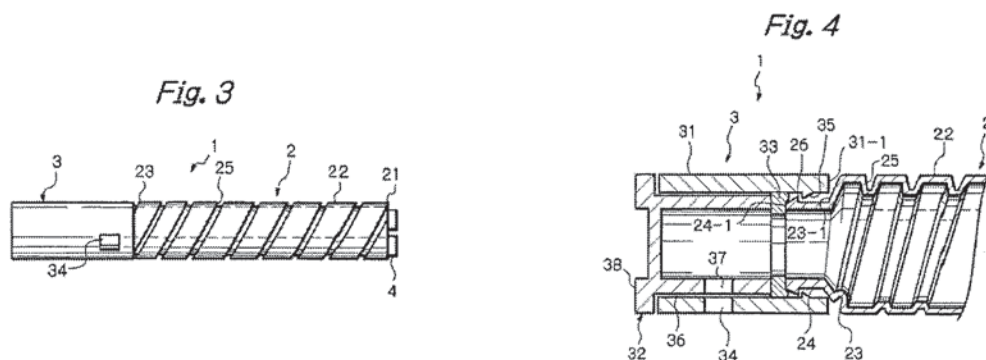


Accordingly, under Defendants and Dr. Springett's own analysis, Yoshiki '079 does not meet the "displacing force receiving portion" limitation.

In the Sturges Validity Report, Canon's expert, Dr. Sturges, explained why Yoshiki '079 does not disclose the claimed displacing force receiving portion. *See* Huang Ex. 6 at pp. 44-45, ¶¶ 83-87. In the Springett Rebuttal Report, Dr. Springett did not dispute Dr. Sturges's analysis, and instead made the conclusory and unsupported assertion that "[e]ven if Yoshiki '079 lacks a displacing force receiving portion, it would have been obvious to one of skill in the art to add one."<sup>4</sup> *See* Huang Ex. 7 at pp. 102-103, ¶ 259.

#### b. Kawamura '208

Kawamura '208 discloses a toner container for an image forming apparatus, as shown in FIGS. 3 and 4, which are reproduced below.



<sup>4</sup> As explained below, this wholly conclusory assertion—which Dr. Springett repeats with respect to Kawamura '208, Ui '574, Matsushita '407, and Matsuoka '806—cannot and does not create a genuine issue of material fact as to the obviousness of the claimed invention as a whole.

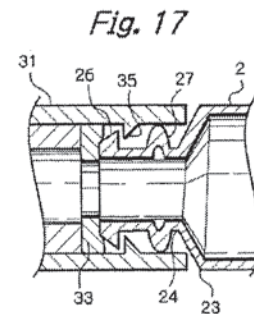
The toner container, generally designated by reference number 1, consists of body 2 and replenishing portion 3. Body 2 is attached to replenishing portion 3 by hook 26, which protrudes outwardly from the outer periphery of the tip of mouth 24, and lugs 35, which protrude inwardly from the inner periphery of outer sleeve 31, which is part of replenishing portion 3. In addition to outer sleeve 31, replenishing portion 3 also includes an inner sleeve 32 and a seal member 33. Inner sleeve 32 and outer sleeve 31 include toner outlets 34 and 37, respectively. Inner sleeve 32 and outer sleeve 31 are rotatable with respect to each other so that toner outlets 34 and 37 can be aligned, to allow toner to flow out of the container, or not aligned, to seal toner within the container. Seal member 33 prevents toner from leaking from the container where body 2 attaches to replenishing portion 3. In operation, body 2 is rotated by drive transmitting means 4 located at bottom 21 of the toner container (shown in Figure 3), while replenishing portion 3 (including outer sleeve 31, inner sleeve 32, and seal member 33) is held fixed. Rotation of body 2 causes toner to be dispensed out of mouth 24 and into replenishing portion 3, where the toner is dispensed to the image forming apparatus through toner outlets 34 and 37.

Defendants assert that annular rib 27 in Figure 17 of Kawamura '208 meets the "displacing force receiving portion" limitation. *See* Huang Ex. 2 at Ex. A2, pp.

51-52, 54-55; Huang Ex. 5 at Ex. B, pp. 66-69. But annular rib 27 is not a displacing force receiving portion as described in claim 24 for at least the following reasons.

*First*, claim 24 recites that the sealing member includes the coupling portion, which, in accordance with the Court's claim construction, includes the displacing force receiving portion. Defendants assert that seal member 33 of Kawamura '208 corresponds to the claimed sealing member. *See* Huang Ex. 2 at Ex. A2, pp. 12-13; Huang Ex. 5 at Ex. B, p. 22. But seal member 33 does not include Defendants' asserted displacing force receiving portion (annular rib 27). Instead, annular rib 27 is an integral part of mouth 24 of the toner container body 2, much like the flange around the neck of a water bottle. Thus, Defendants' asserted sealing member (seal member 33) does not include their asserted displacing force receiving portion (annular rib 27).

*Second*, annular rib 27 is not configured and positioned to receive a force from a hollow cylinder (which Defendants contend is outer sleeve 31, *see* Huang Ex. 2 at Ex. A2, pp. 6-7; Huang Ex. 5 at Ex. B, pp. 9-10) to cause the supporting portion (which Defendants do not even contend Kawamura '208 discloses, *see* Huang Ex. 2 at Ex. A2, pp. 22-26; Huang Ex. 5 at Ex. B, pp. 32-37) to elastically displace in an inward direction, as claim 24 requires.



Dr. Sturges explained why Kawamura '208 does not disclose the claimed displacing force receiving portion in the Sturges Validity Report, *see* Huang Ex. 6 at pp. 58-60, ¶¶ 129-132, and just as in the case of Yoshiki '079, Dr. Springett did not dispute Dr. Sturges's analysis, *see* Huang Ex. 7 at p. 103, ¶ 260. Instead, Dr. Springett again made only the conclusory assertion that "[e]ven if Kawamura '208 lacks a displacing force receiving portion, it would have been obvious to one of skill in the art to add one." *Id.*

**c. Hilton '966**

Hilton '966, which is wholly non-analogous to the toner supply container art that is the subject of the '012 patent, discloses a fastener for "connecting items to another item, for instance in relation to push chairs, other nursery equipment, vehicle seats, items of luggage, strapping, medical and recreational uses." Huang Ex. 11 at col. 1, ll. 7-10. Other examples of connectable items that Hilton '966 mentions include sun canopies, parasols, covers, umbrellas, trays, toys, car seats for children, and garden chairs. *Id.* at col. 1, ll. 36-53. The primary objective of the Hilton '966 invention was to provide a fastener that can be easily operated with just one hand, which Hilton '966 says is helpful for a mother holding a child, a fisherman holding a fishing rod, or a disabled person having the effective use of just one hand. *Id.* at col. 1, ll. 11-35.



Defendants and Dr. Springett are unclear in the Amended Invalidity Contentions and the Springett Initial Report about what in Hilton '966 they contend meets the “displacing force receiving portion” limitation. In both documents, they quote column 10, lines 10-19 of Hilton '966, which mentions many different elements, but they do not identify which of those elements allegedly meets the “displacing force receiving portion” limitation. *See* Huang Ex. 2 at Ex. A1, pp. 47-48; Huang Ex. 5 at Ex. B, pp. 69-70. Dr. Sturges understood Defendants and Dr. Springett to be pointing to element 24, which is mentioned in the quoted passage and specifically called out in a “see also” cite following the quotation, so Dr. Sturges explained in the Sturges Validity Report why element 24 does not meet the “displacing force receiving portion” limitation. *See* Huang Ex. 6 at pp. 130-131, ¶¶ 364-367.

In the Springett Rebuttal Report, Dr. Springett did not deny that element 24 fails to meet the “displacing force receiving portion” limitation, and, for the first time, identified grip portions 29 and 229 as allegedly corresponding to the claimed displacing force receiving portion. *See* Huang Ex. 7 at p. 102, ¶ 258. But grip portions 29 and 229 do not meet the “displacing force receiving portion” limitation for at least the following reasons.



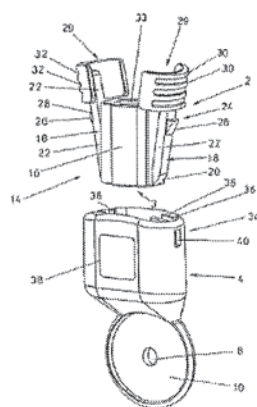


FIG. 1

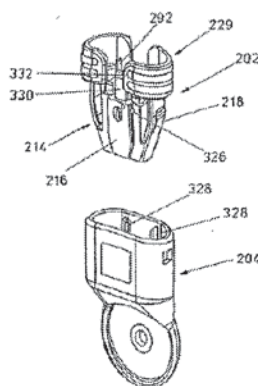


FIG. 14

*First*, claim 24 recites that the engaging portion is provided at a free end of the supporting portion, and that the displacing force receiving portion is provided at a position closer to the container body than the engaging portion. In Hilton '966, grip portions 29 and 229 are at the free end of arms 18 and 218, respectively, while Defendants' asserted engaging portions (wedge 24, *see* Huang Ex. 2 at Ex. A1, pp. 24-25; Huang Ex. 5 at Ex. B, p. 44) are located farther down on the arms. Thus, in Hilton '966, the relative locations of the asserted engaging portion and displacing force receiving portion are the reverse of what is claimed.<sup>5</sup>

*Second*, claim 24 recites that the displacing force receiving portion is part of a sealing member for a toner supply container. Grip portions 29 and 229 are not

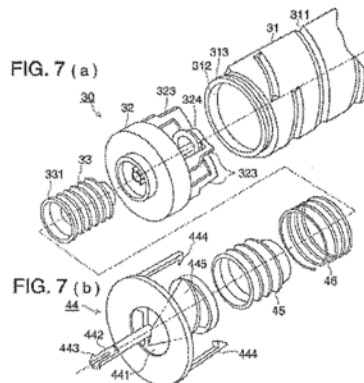
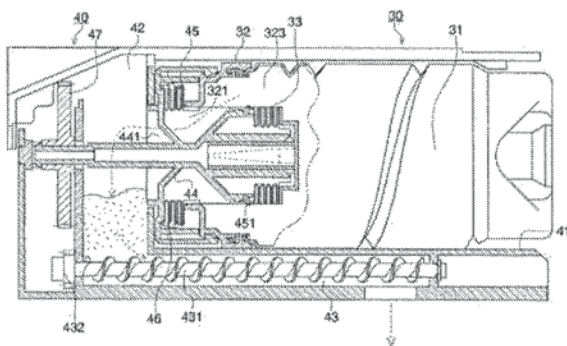
<sup>5</sup> This positioning belies Dr. Springett's assertion that it is "inherent and obvious" that a "releasing tab" must be arranged in the manner claimed. *See* Huang Ex. 7 at p. 101, ¶ 256.

part of a sealing member for a toner supply container. Indeed, Defendants do not even contend that Hilton '966 discloses a sealing member.

#### d. Matsuoka '806

Matsuoka '806 discloses a developing agent replenishing apparatus 40 including a cartridge 30, as shown in FIGS. 6 and 7, reproduced below. Cartridge 30 includes a container main body 31 and a fixed cover 32, and an opening/closing cover 33 in the form of expandable/compressible bellows. Upon insertion of cartridge 30 into apparatus 40, bellows of opening/closing cover 33 and opening/closing cover 45 are compressed, creating a replenishment opening 321 for toner to be dispensed. Cartridge 30 is rotated by a rotary power transmitting member 44 within apparatus 40 to dispense toner through opening 321.

FIG. 6



The Springett Initial Report does not point to any element that Dr. Springett contends *is* the claimed displacing force receiving portion, and instead asserts that

element 32, which Matsuoka '806 refers to as a fixed cover, is “equivalent” to a displacing force receiving portion.<sup>6</sup> Huang Ex. 5 at p. 91, ¶ 179. But fixed cover 32 is not a displacing force receiving portion as described in claim 24, nor is it “equivalent” to a displacing force receiving portion, for at least the following reasons.

*First*, claim 24 recites that the sealing member includes the coupling portion, which in turn includes the displacing force receiving portion. In Matsuoka '806, Defendants contend that opening/closing cover 33 and cap member 34 correspond to the claimed sealing member, *see* Huang Ex. 2 at Ex. A1, p. 9, but neither includes fixed cover 32.

*Second*, fixed cover 32 is not configured and positioned to receive a force from a hollow cylinder and cause Defendants' asserted supporting portion (engagement claw portion 443, *see* Huang Ex. 2 at Ex. A1, pp. 18-19; Huang Ex. 5 at Ex. B, pp. 34-35) to elastically displace in an inward direction, as claim 24 requires.

Dr. Sturges explained why Matsuoka '806 does not disclose the claimed displacing force receiving portion in the Sturges Validity Report, *see* Huang Ex. 6

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<sup>6</sup> Defendants did not assert that Matsuoka '806 discloses the “displacing force receiving portion” limitation in their Amended Invalidity Contentions. *See* Patent L.R. 4.3(a)(3) (requiring parties challenging validity to provide a “chart identifying where specifically in each alleged item of prior art each element of each asserted claim is found”).

at pp. 109-110, ¶¶ 289-292, and Dr. Springett did not dispute Dr. Sturges's analysis, *see* Huang Ex. 7 at p. 103, ¶ 263. Instead, Dr. Springett yet again argues, in a wholly conclusory fashion, that “[e]ven if Matsuoka ’806 lacks a displacing force receiving portion, it would have been obvious to one of skill in the art to add one.” *Id.*

**e. Sundberg ’990**

Sundberg ’990 is another non-analogous reference, which discloses an extendable and retractable lead for insertion into a patient’s heart. As with Matsuoka ’806, Defendants did not assert in their Amended Invalidity Contentions that Sundberg ’990 discloses the “displacing force receiving portion” limitation. The Springett Initial Report, likewise, does not specifically identify any specific structure in Sundberg ’990 that allegedly corresponds to the claimed displacing force receiving portion. *See* Huang Ex. 5 at Ex. B, pp. 67, 70 (pointing generally to Figure 1 and a passage in the specification that mentions at least nine different elements). Finally, in the Springett Rebuttal Report, Dr. Springett identified a brand-new supposed displacing force receiving portion, which he labeled “disengaging portion” in annotated Figure 11 shown on the left below. *See* Huang Ex. 7 at p. 104, ¶ 264.



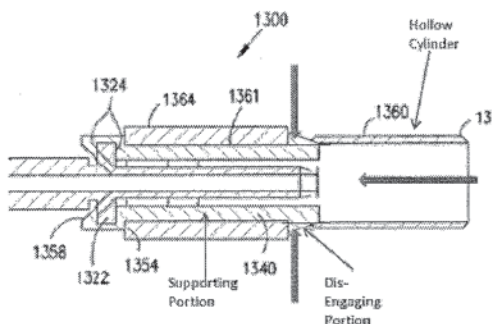


FIG. 11

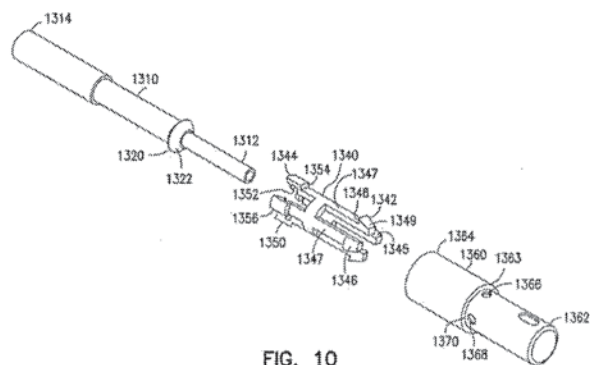


FIG. 10

Sundberg '990 refers to the part that Dr. Springett calls a “disengaging portion” as cantilever hooks 1346, which are labeled in Figure 10 shown on the right above. But the cantilever hooks 1346 are also what Defendants contend is the claimed engaging portion. *See* Huang Ex. 2 at Ex. A1, pp. 25-26; Huang Ex. 5 at Ex. B, pp. 39-40. Cantilever hooks 1346 cannot be both the claimed engaging portion and also the claimed displacing force receiving portion, because claim 24 expressly states that the displacing force receiving portion is provided at a position closer to the container body than the engaging portion, and that a radially outermost part of the displacing force receiving portion is more remote from a rotation axis of the coupling portion than a radially outermost part of the engaging portion.

\* \* \*

For at least the reasons explained above, Defendants and Dr. Springett have not identified any reference that teaches or suggests the “displacing force receiving



portion” limitation. Thus, no matter how the prior art might be combined, at least this limitation would be missing. This is another reason why Defendants’ obviousness arguments fail as a matter of law. *See Honeywell Int’l, Inc. v. U.S.*, 609 F.3d 1292, 1300-01 (Fed. Cir. 2010) (“Given the failure to prove that the cited references disclose [an element], the [defendant] has failed to carry its burden of proving by clear and convincing evidence that the claimed invention would have been obvious to one of skill in the art.”).

Even though the prior art does not teach the claimed displacing force receiving portion, Dr. Springett nevertheless asserts that it would have been obvious to add a displacing force receiving portion to Yoshiki ’079, Kawamura ’208, Ui ’574, Matsushita ’407, and Matsuoka ’806, arguing that “it is simple common sense to put a releasing tab on a snap-fit connector that is intended to be released.” Huang Ex. 7 at pp. 102-103, ¶¶ 259-263. However, Dr. Springett does not describe or illustrate what this generic “releasing tab” would look like or explain how it would be integrated into each specific reference.<sup>7</sup> *See ActiveVideo*, 694 F.3d at 1328 (finding insufficient an expert’s testimony regarding motivation to combine because it was “generic and bears no relation to any specific combination of prior art elements”). Further, Dr. Springett’s assertion that “it is

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<sup>7</sup> Dr. Springett’s attempt to show how another reference (Russell ’163) could be modified to include a displacing force receiving portion has been excluded by the Court. *See* Huang Ex. 7 at pp. 104-105, ¶ 265; D.I. 307.

simple common sense to put a releasing tab on a snap-fit connector that is intended to be released” is wholly unsupported and adds nothing to the obviousness equation. *See Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377 (Fed. Cir. 2012) (“The mere recitation of the words ‘common sense’ without any support adds nothing to the obviousness equation.”).

Moreover, even accepting as true Dr. Springett’s conclusory assertion that “it is simple common sense to put a releasing tab on a snap-fit connector that is intended to be released,” merely putting a releasing tab on a snap-fit connector would not meet the “displacing force receiving portion” limitation. Among other things, there is no reason to conclude that a releasing tab would be “provided at a position closer to said container body than said engaging portion” or have “a radially outermost part [that] is more remote from a rotation axis of said coupling portion than a radially outermost part of said engaging portion,” as claim 24 requires. *See ActiveVideo*, 694 F.3d at 1328 (rejecting an expert’s testimony that failed “to explain why a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does*”) (emphasis in original).

For at least the foregoing reasons, Defendants cannot establish by clear and convincing evidence that claim 24 (or its dependent claims 25 and 30) as a whole is obvious, and summary judgment of no obviousness should be granted.

**B. DEFENDANTS' RESPONSE**

**1. Introduction**

The '012 patent offers at best incremental, but nevertheless obvious, improvement over the prior art. Like the '012 patent, the prior art also disclosed sealed toner bottles that, once installed in a copier machine, would be automatically unsealed and rotated to drive toner out of the bottle and into the copier machine. Defs.' Statement of Additional Facts ("DF") 1. As described in more detail in Defendants' Consolidated Motion for Summary Judgment, Canon's technical expert, Dr. Sturges, identified several attributes of an "ideal toner supply container." Defs.' Consolidated Mot. at 38. Yet, each of these attributes existed in the prior art and the '012 patent itself does not purport to invent any of these attributes. DF 2. The patent expressly identifies and purports to solve only a very specific problem in the prior art: the alignment needed for a user to install and effect an engagement between prior art toner bottles and a copier machine (also known as an electrophotographic imaging system, or "EIS"). DF 3.

However, a solution to the alignment problem already existed: snap-fit

connectors. These connectors were well-known then, even to lay people, as secure and easy to connect. DF 8. For example, snap-fit connectors were and are used in seat-belt buckles and telephone/Ethernet plugs. *Id.* The prior art U.S. Patent No. 6,698,966 (“Hilton ‘966,” Huang Ex. 11) discloses a snap-fit connector especially developed for ease of engagement. DF 12. The connector “allows single handed operation by either hand,” “*without requiring a specific orientation of the fastener . . .*” *Id.*; Hilton ‘966 (Huang Ex. 11) at 1:28-35 (emphasis added). A person of skill in the art would have considered a snap-fit connector in developing a solution to the known prior art connection alignment problem. DF 22. It would have required only common sense and routine skill to add such a snap-fit connector to prior art toner bottles. DF 24.

Canon makes a sweeping objection to Dr. Springett’s opinion and contends that the analysis by Dr. Springett, Defendants’ technical expert, relies on improper use of hindsight. Mot. at 11. This is simply incorrect. Dr. Springett’s methodology and analysis is based on the Patent Local Rules. L.P.R. 4.3. Moreover, the existence of “a known problem for which there was an obvious solution encompassed by the patent’s claims” eradicates any hindsight concerns. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419-20 (2007). Here, the evidence shows a known “design need or market pressure to solve a problem” (the



alignment problem of prior art toner bottles) and also “identified, predictable solutions” (snap-fit connectors, such as Hilton ‘966). *Id.* at 421. As the Supreme Court observed, pursuing these “known options” “is likely the product not of innovation but of ordinary skill and common sense.” *Id.* at 421. Dr. Springett properly identified “where specifically in each alleged item of prior art each element of each asserted claim is found,” L.P.R. 4.3, and followed *KSR*’s direction on common sense and avoiding hindsight bias. *E.g. KSR*, 550 U.S. at 420 (“Common sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.”).

As a result, there are genuine issues of fact as to the obviousness of the ‘012 Patent under 35 U.S.C. §103, and so Canon’s motion for summary judgment of no obviousness should not be granted.<sup>8</sup>

**a. The ‘012 Patent**

In the “Field of Invention and Related Art,” the ‘012 patent acknowledges that the state of the art included sealed toner bottles that, once installed in a copier machine, would be automatically unsealed and rotated to drive toner out of the

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<sup>8</sup> Defendants’ do not dispute Canon’s arguments as to 35 U.S.C. §101 and 35 U.S.C. §102. Canon’s arguments as to 35 U.S.C. §112 are moot because the Court has already issued a ruling. Doc. No. 168, 169.



bottle and into the copier machine. DF 1; '012 patent (Huang Ex. 1) 1:34-42; Sturges (Warlick Ex. A) 90:18-92:3, 177:25-179:21 (agreeing that prior art U.S. Patent No. 5,765,079 (“Yoshiki ‘079,” Huang Ex. 9) and U.S. Patent No. 5,903,806 (“Matsuoka ‘806,” Huang Ex. 12) have these characteristics). As discussed above, the ‘012 Patent offers the same “ideal toner supply container” attributes as the prior art. DF 2; Sturges Validity (Huang Ex. 6) at 148-9 ¶427; Springett Rebuttal (Huang Ex. 7) at 42-44 ¶¶96-8, 102-4; Yoshiki ‘079 (Huang Ex. 9) at 1:15-27, 1:40-2:57; Matsuoka ‘806 (Huang Ex. 12) at 1:22-28, 1:64-67, 2:12-13, 2:21-28, 2:46-60.

The ‘012 patent purports to solve only a very particular problem regarding alignment between prior art toner bottles and copier machines. DF 3. The patent criticizes one reference as “requir[ing] the user to be careful for the proper engagement,” ‘012 Patent 2:3-4, and another reference as requiring additional complications “to avoid . . . an improper engagement . . .,” ‘012 Patent 2:25-32. DF 3.

The ‘012 patent has been described extensively in claim construction briefing, and in the Special Master’s report and recommendations on claim construction. Doc. No. 168.

**b. The Prior Art Toner Bottles**

Yoshiki '079 is prior art to the '012 Patent. DF 4. As shown in Figure 1 of Yoshiki '079 (right), a toner bottle 1 with cap 5 is inserted without any particular alignment required. DF 5. The collet chuck 10 grips tab portion 6 then pulls the cap 5 off the toner bottle 1, creating opening 3. DF 5; Yoshiki '079 (Huang Ex. 9) at 2:17-42; Springett Rebuttal (Huang Ex. 7) at 9 ¶19. Once the toner is empty, the collet chuck 10 pushes the cap 5 back over the opening 3 to reseal the toner bottle. DF 5; Yoshiki '079 (Huang Ex. 9) 2:48-52; Springett Rebuttal (Huang Ex. 7) 10 ¶21.

Matsuoka '806 is prior art to the '012 Patent. DF 6. Matsuoka '806 has a rotary power transmitting member 44 on the copier machine that both unseals and rotates the toner bottle. DF 7. Matsuoka '806 discloses an “expandable bellows” 33 that seals opening 321 of cap 32. DF 7; Matsuoka '806 (Huang Ex. 12) Figs. 4(d), 5(c).

*FIG. 1  
PRIOR A.*

As the toner bottle is inserted into the copier machine, rotary power transmitting member 44 compresses the bellows, unsealing the bottle. DF 7; Matsuoka '806

(Huang Ex. 12) Figs. 9-11; Springett Rebuttal (Huang Ex. 7) 18-19 ¶41, 20-24 ¶43, 46-53. The hollow cylindrical portion 447 of the rotary power transmitting member 44 includes engagement projections 448, which engage with similar projections 327 on the toner bottle. DF 7; Matsuoka '806 (Huang Ex. 12) 8:45-53, 9:6-11, Figs. 9, 17(a); Springett Rebuttal (Huang Ex. 7) 22 ¶ 49, 57 ¶141; Sturges (Warlick Ex. A) 99:19-100:3, 182:21-183:14 (element 40 is part of 44). These projections cause the toner bottle to rotate when the rotary power transmitting member 44 rotates. *Id.*

### c. The Prior Art Snap-Fit Connectors

Snap-fit connectors were well-known as of the priority date of the '012 patent, even to a lay person. DF 8.

Frequently encountered examples of snap-fit connectors include seat-belts and telephone/Ethernet plugs. DF 8;

Sturges (Warlick Ex. A) 70:5-8, 70:18-71:17. Dr. Sturges, during his deposition, drew an illustration of an example



snap-fit connection (next page, right).<sup>9</sup> Sturges Ex. 5 (Warlick Ex. B). To engage,

<sup>9</sup> Dr. Sturges limits the term “snap-fit” to a connector that makes an audible snapping noise. Sturges (Warlick Ex. A) 54:19-55:11. This definition is distracting because applying the definition to any particular device requires careful analysis to determine whether it will, in fact, make a snapping noise. *E.g., Id.* at 58:3-59:7. Dr. Sturges allowed that the term “snap-fit” is sometimes used more generally to refer to any connector that has the geometry generally associated with snap-fit connectors, and it is this definition that is used herein. *See Id.* at 59:19-60:5; 63:3-11; *see* Springett (Warlick Ex. C) 185:4-186:10.

the cantilever beams displace such that the hook elements R can pass each other (step A'), then the cantilever beams restore to their original shape (B), resulting in a lock between the two hook elements. DF 9; Sturges (Warlick Ex. A) 55: 12-56:4, Ex. 5 (Warlick Ex. B) .

Dr. Springett highlighted many examples of snap-fit connectors used in the toner bottle prior art, including Matsuoka '806. DF 8; Springett Rebuttal (Huang Ex. 7) at 31-36 ¶¶69-80. The examples show "that a person of skill in the art . . . would have been familiar with snap-fit connectors." DF 8; Springett Rebuttal (Huang Ex. 7) at 36 ¶80. Dr. Springett also concluded, based on his work experience in research and development of copier systems for Xerox Corporation, that a person of skill in the art would have been familiar with snap-fit connectors, and would have considered snap-fit connectors in facing the problems disclosed by the '012 patent. DF 8; Springett Rebuttal (Huang Ex. 7) at 37 ¶83, 50 ¶128; Springett (Warlick Ex. C) 25:21-24, 50:10-52:11, 66:6-68:6, 114:12-115:6.

Hilton '966 is prior art to the '012 Patent. DF 10. Although particularly addressed to attaching a sun umbrella to a baby stroller, Hilton '966 teaches that its snap-fit connector is broadly useful for connecting items together in any field, "for instance in relation to push chairs, other nursery equipment, vehicle seals, items of luggage, strapping, medical and recreational uses." DF 11; Hilton '966 (Huang



Ex. 11) 1:8-10. This amply illustrates Dr. Springett's opinion regarding skill in the art that this type of connector was well known and in use in many applications where a hold and release connection is desired.

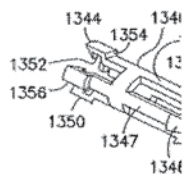
As shown in Figure 1 of Hilton '966 (right), there is a clip (2, top) and a hollow portion (4, bottom). DF 13. When the clip is inserted into the cup, two snap-fit beams ("arms," 18) displace inward such that wedges 24 on each side of the clip engage with apertures 40 on the hollow portion. DF 13; Hilton '966 (Huang Ex. 11) at 9:50-10:3, Figs. 1, 3, 4. To disengage the clip, the user pushes inward on the gripper portions 29, which causes the snap-fit beams to displace inward and the wedges 24 to disengage from the apertures 40, thus releasing the clip. DF 13; Hilton '966 (Huang Ex. 11) at 10:10-19. Hilton '966 is a snap-fit connector. DF 13; Sturges (Warlick Ex. A) 157:3-15, 159:16-160:12.

U.S. Patent No. 6,501,990 ("Sundberg '990," Huang Ex. 13) is prior art to the '012 Patent. DF 14. The reference discloses a snap-fit connector used in a cardiac pacemaker lead. Sundberg '990 "demonstrates the wide potential of snap-fit connectors. It demonstrates that an engineer facing a

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mechanical fitting problem in any field (here, toner bottles; in Sundberg '990, cardiac pacemaker leads) would look to snap-fit connectors and select one appropriate for the problem at hand. Once the engineer considers using a snap-fit connector, Sundberg '990 provides an example of how a snap-fit connector can be used." DF 15; Springett Rebuttal (Huang Ex. 7) 39 ¶89.

As shown in the excerpt of Figure 10 (right), Sundberg '990 discloses a snap-fit connection between a sleeve 1340 and outer terminal ring 1360 (i.e., hollow cylindrical driving member). DF 17; Springett Rebuttal (Huang Ex. 7) at 27 ¶58. The sleeve includes four cantilever hooks 1346 that deflect inward, towards the axis of the lead, to engage with the outer terminal ring 1360. DF 17; Sundberg '990 (Huang Ex. 13) at 11:37-52, 12:38-40; Springett Rebuttal (Huang Ex. 7) at 27 ¶58. The outer terminal ring 1360 includes four cutouts 1368 with mating surface 1370, which locks against the mating surface 1348 of the cantilever hooks 1346. DF 17; Sundberg '990 (Huang Ex. 13) at 12:5-20, 12:40-46; Springett Rebuttal (Huang Ex. 7) at 27 ¶58.



**d. The Prior Art Raises Genuine Issues of Fact as to the Obviousness of the '012 Patent**

The Argument section below (Part III) sets forth how these prior art references raise, at a minimum, genuine issues of fact as to the obviousness of the '012 patent sufficient to deny summary judgment.

**2. Argument**

**a. Obviousness is an Expansive and Flexible Doctrine**

A patent is invalid “when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR*, 550 U.S. at 406 (quoting 35 U.S.C. § 103(a)). The relevant factors for obviousness include “the scope and content of the prior art”; any “differences between the prior art and the claims at issue”; “the level of ordinary skill in the pertinent art”; and relevant secondary considerations. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17 (1966).

Prior to 2007, the Federal Circuit required an additional element of proof: some teaching, motivation, or suggestion to combine the prior art in the claimed fashion. *See, e.g., Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1323-24 (Fed.

Cir. 1999). The Supreme Court flatly rejected that “rigid approach.” *KSR*, 550 U.S. at 415. Although it remains “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,” obviousness doctrine is “expansive and flexible,” and courts are free to “take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 415, 418. A person of ordinary skill may be able to fit prior art references together like the “piece pieces of a puzzle.” *Id.* at 420.

That is especially true when, as is the case with the ‘012 patent, “the asserted claims involve a combination of familiar elements according to known methods that does no more than yield predictable results.” *Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1344 (Fed. Cir. 2008). As discussed in more detail below, there are only two pieces to this puzzle: a prior art toner bottle, such as Yoshiki ‘079 or Matsuoka ‘806, and a generic snap-fit connector, such as Hilton ‘966 or Sundberg ‘990. Attaching such a generic snap-fit connector to the cap of a prior art toner bottle predictably yields a simple and effective connection. The Supreme Court recognized that permitting patents for such combinations “might stifle, rather than promote, the progress of useful arts.” *KSR*, 550 U.S.C. at 427. A patent that “only unites old elements with no change in their respective functions” adds



nothing to public knowledge while in fact “withdraw[ing] what already is known in to the field of its monopoly and diminish[ing] the resources available to skillful men.” *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 152-53 (1950).

Although defendants no longer have to prove a teaching or motivation to combine, the Supreme Court and the Federal Circuit have ensured against “hindsight bias.” *KSR*, 550 U.S. at 421. As the Federal Circuit reiterated, where “the problem was not known, the possible approaches to solving the problem were not known or finite, and the solution was not predictable, it would not have been obvious for a person of ordinary skill to make the claimed invention.” *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1357 (Fed. Cir. 2013). This is not the case here. The problem was known and other solutions used, but found wanting. The claimed solution is a predictable substitution of one known form of connector for another.

Moreover, the well-known use of snap-fit connectors in other fields, *e.g.* Hilton ‘966 and Sundberg ‘990, shows that this inventive trail has already been blazed by others. Where a “technique has been used to improve one device,” it is obvious that “a person of ordinary skill would recognize that it would improve similar devices in the same way.” *KSR*, 550 U.S. at 417. The mere fact that the

prior art involves a different field is immaterial because “design incentives and other market forces can prompt variations of it, wither in the same field or a different one.” *KSR*, 550 U.S. at 417.

**b. The Canon Inventors Used Existing Technology to Solve a Known Problem**

A person of skill in the art developing a new toner bottle may have started from Yoshiki ‘079 and Matsuoka ‘806 because they both disclose sealed toner bottles that, once installed in a copier machine, would be automatically unsealed and rotated to drive toner out of the bottle and into the copier machine. DF 1. Both references address the “ideal toner supply container” attributes identified by Dr. Sturges. DF 2. Canon has only identified minor distinctions with these references as compared to the ‘012 patent:

For example, as to Matsuoka ‘806, Canon contends that it required careful engagement by the user and it has a “very complicated structure with many interconnected parts . . . .” DF 18, Sturges (Warlick Ex. A) 100:7-22, 102:19-103:2, 103:16-104:8; Sturges Tech. Value (Warlick Ex. D) at 13-14 ¶26. As to Yoshiki ‘079, Dr. Sturges argued that because the collet chuck did not rotate the toner bottle, Yoshiki ‘079 would have needed an additional rotation mechanism

requiring proper alignment. DF 20; Sturges Tech. Value (Warlick Ex. D) at 12 ¶26; Sturges (Warlick Ex. A) 82:2-84:3.

However, these minor distinctions show that at least two of the “ideal toner supply container” attributes identified by Dr. Sturges had been effectively solved by the prior art: one that “(2) would reliably seal toner within the container when outside the copy machine; and (3) would discharge the right amount of toner at the right time when installed in the copy machine.” DF 2. Solutions existed to the remaining “ideal” attribute for a toner supply container (“would be easy to install and remove from a copy machine from the standpoint of a user,” *Id.*) but they were known to “result[] in complications” or require additional “complicated” structures, DF 19, 21, ‘012 patent 2:25-28, 2:31-32, 2:39-44, 2:43-45. A person of skill in the art would have been well aware of these issues and would have been motivated to improve on these solutions.

A look at those two references suggests the answer. The collet chuck 10 of Yoshiki ‘079 has no alignment problem and is effective and simple to grasp and remove the toner bottle cap. DF 5. But, the collet chuck does not also rotate the toner bottle, and this problem necessitates an additional rotation mechanism within the copier machine that may require proper alignment. DF 20. Matsuoka ‘806 avoids this complication with the rotary transmitting member 44, which both

unseals and rotates the toner bottle. DF 7. However, the rotary transmitting member 44 itself is complicated and requires the user to properly align the toner bottle in the copier machine. DF 18. The answer would have been readily apparent: what was needed was a simple connector, like the collet chuck of Yoshiki '079, but one that both unseals and rotates the toner bottle.

Dr. Springett explains how the person of skill in the art might have searched for the right connector to solve this problem:

There are only a limited number of such connectors that may be used in place of a collet chuck. These would be well-known to a person of skill in the art, and even to a lay person. Examples include grippers, clamps, latches, clips, screws, nails, staples, magnets, or even Velcro. A person of ordinary skill seeing the teachings of Yoshiki '079, would consider any number of such connectors from the toolkit of possible connectors. A snap-fit connector would certainly be in that toolkit.

DF 22; Springett Rebuttal (Huang Ex. 7) at 50 ¶127; *see also Id.* at 37 ¶83. In his deposition, Dr. Sturges agreed that a mechanical engineer would be familiar with snap-fit connectors. DF 8; Sturges (Warlick Ex. A) at 64:1-12.

A person of skill in the art would have also known that a snap-fit connector improves on prior art connectors, such as the collet chuck 10 of Yoshiki '079 and the rotary power transmitting member 44 of Matsuoka '806. Like collet chuck 10, a snap-fit connector, such as Hilton '966, can securely hold two parts together. DF 23; Sturges (Warlick Ex. A) 65:4-66:5, 68:7-15, 74:17-76:4, 76:19-21, 168:3-18;



Springett (Warlick Ex. C) 196:20-197:25. A snap-fit connector can also transfer rotational force, like rotary power transmitting member 44. DF 23; Sturges (Warlick Ex. A) 79:23-80:3. For example, if a telephone jack is rotated, then a telephone cord plugged into the jack will also rotate. DF 23; Sturges (Warlick Ex. A) 78:12-79:11. The same is true for a seat belt and the Hilton '966 connector. DF 23; Sturges (Warlick Ex. A) 80:4-9, 166:14-21; Springett Rebuttal (Huang Ex. 7) 59 ¶146-47. As a result, by using a snap-fit connector, the "rotation of the EIS driving member would be passed on to the container body, as in Matsuoka '806." *Id.* at 59 ¶147.

Thus, a person of skill in the art would have concluded that a snap-fit connector, such as Hilton '966 or Sundberg '990, solves the problems of Yoshiki '079 and Matsuoka '806. DF 24. Dr. Springett explains:

A person of ordinary skill in the art would have considered a snap-fit connector . . . then looked to a wide variety of prior art for examples of how snap-fit connectors may be used. Thus, a person of ordinary skill in the art would have substituted the collet chuck mechanism in Yoshiki '079 with a snap-fit connector. This would have resulted in a cap with a stopper on one side and a snap-fit connector on the other to engage with the EIS driving member.

Springett Rebuttal (Huang Ex. 7) at 54 ¶133. Dr. Sturges acknowledged that a person of skill in the art designing a new toner bottle has flexibility to consider what had been done in the toner bottle art and other fields. He stated: "One

designing both a copy machine and toner container has a great deal of freedom when it comes to designing the container because the copy machine can be designed to work with the container.” Sturges Tech. Value (Warlick Ex. D) at 3 ¶8. In his deposition, he added: “one has a great deal of latitude with respect to, for example, the type of connections that are made, the diameters and thicknesses of materials, and details of how the toner is to exit the . . . container and so forth.” Sturges (Warlick Ex. A) 196:14-197:12. He also added that “one may consider items from many different devices that went before,” such as toner bottles, seat belt buckles, or telephone plugs. *Id.* at 199:4-22.

The reason for specifically looking to the snap-fit connectors disclosed in Hilton ‘966 and Sundberg ‘990 is discussed in response to Canon’s argument that these references are non-analogous. (Part III.F). The result of substituting the clip of Hilton ‘966 for the collet chuck of Yoshiki ‘079, in view of Matsuoka ‘806 and Sundberg ‘990, discloses or teaches every element of the patent:

**Toner supply container capable of being mounted and demounted.** It was well known in the prior art to mount and demount toner bottles in copier machines, as shown by both Yoshiki ‘079 and Matsuoka ‘806. DF 25; Yoshiki ‘079 (Huang Ex. 9) at 1:5-8, Fig. 1; Matsuoka ‘806 (Huang Ex. 12) at Figs. 9, 10, 11; Springett Initial (Huang Ex. 5) at 40 ¶69, ¶74, Ex. B at 1-3.

**Driving member.** Yoshiki '079 discloses a collet chuck 10 that grips tab portion 6 to pull cap 5 off the toner bottle 1. DF 26; Yoshiki '079 (Huang Ex. 9) at 2:17-42; Springett Rebuttal (Huang Ex. 7) at 9 ¶19. Matsuoka discloses a hollow cylindrical member 447 that exerts a rotational force on the toner bottle and causes the bottle to rotate. DF 26; Matsuoka '806 (Huang Ex. 12) 8:45-53, 9:6-11, Figs. 9, 17(a); Sturges (Warlick Ex. A) 182:4-17; Springett Rebuttal (Huang Ex. 7) 22 ¶49. Hilton '966 discloses a "hollow portion" 4 with "aperture" 40 that matches the geometry of the claimed driving member, although it is not cylindrical. DF 26; Hilton '966 (Huang Ex. 11) at Fig. 1, 9:25-29; Springett Rebuttal (Huang Ex. 7) at 63 ¶160 (citing 52-53 ¶130); Sturges (Warlick Ex. A) 164:20-24. Sundberg '990 discloses a cylindrical "outer terminal ring" 1360 with "cutouts" 1366, 1368 matching the claimed geometry. DF 26; Sundberg '990 (Huang Ex. 13) Fig. 10, 12; Springett Rebuttal (Huang Ex. 7) at 26-28 ¶¶57-59; Springett (Warlick Ex. C) 211:12-213:10, 214:4-15. It would have been obvious to one of skill in the art to alternatively either (1) substitute and adapt the Hilton '966 hollow portion or Sundberg '990 outer terminal ring for the collet chuck of Yoshiki '079; or (2) adapt the hollow cylindrical member 447 disclosed by Matsuoka '806 to include a slot such that Matsuoka '806 element 40 could effect a snap-fit connection. DF 26;



Springett Rebuttal (Huang Ex. 7) at 50 ¶127, 54 ¶133, 63 ¶159-61. *See also Id.* at 63 ¶159; Springett (Warlick Ex. C) 214:4-9.

**Hollow cylinder.** In view of the automated disengagement taught by Yoshiki '079, it would have been obvious to add a member to push the displacing force receiving portion and release the snap-fit coupling. DF 27; Springett Rebuttal (Huang Ex. 7) 60 ¶151. This function could be performed by almost any conceivable shaped member. *Id.* at 66 ¶170. Common sense suggests making this element concentric with the hollow cylindrical driving member to reduce space. DF 27; Springett Rebuttal (Huang Ex. 7) at 67 ¶171. Based on the disclosures of Matsuoka '806, Dr. Springett concluded: "it was known in the art to use concentric hollow cylinders for such couplings." DF 27; Springett Rebuttal (Huang Ex. 7) 67 ¶171; Springett (Warlick Ex. C) 204:13-206:19.

**Container body.** Dr. Sturges acknowledged that both Yoshiki '079 and Matsuoka '806 disclose a claimed cylindrical toner bottle. DF 28; Yoshiki '079 (Huang Ex. 9) Fig. 1, 2:12-16; Matusoka '806 (Huang Ex. 12) at 1:20-27, Fig. 4(d); Springett Rebuttal (Huang Ex. 7) at 9 ¶20, 18 ¶40; Sturges (Warlick Ex. A) 31:16-32:2; 47:15-48:12; 90:18-20, 179:22-180:1.

**Sealing member with sealing portion.** A cap with a sealing portion is disclosed by Yoshiki '079. DF 29, 30; Yoshiki '079 (Huang Ex. 9) Fig. 1;



Springett Rebuttal (Huang Ex. 7) 67 ¶174, 72 ¶186; Sturges (Warlick Ex. A) 32:3-12, 33:11-34:16, 40:8-42:4, 52:17-54:12, 90:18-91:11. *See also* Springett Rebuttal (Huang Ex. 7) 71 ¶184, 76 ¶196; Springett Initial (Huang Ex. 5) 56-57 ¶101.

**Coupling portion.** Matsuoka '806 discloses a "positioning portion" 326 on cap 30 that receives a rotational drive force from the copier machine assembly. DF 31; Matsuoka '806 (Huang Ex. 12) at 8:45-53, 9:6-11; Springett Rebuttal 82 ¶211. In addition, as discussed above, it would have been obvious to adapt a snap-fit connector, such as that of Hilton '966 or Sundberg '990, to the cap of Yoshiki '079, resulting in a coupling portion that can receive a rotational drive force. DF 31; Springett Rebuttal (Huang Ex. 7) at 59 ¶147, 93 ¶235; Springett (Warlick Ex. C) 214:2-3; Sturges (Warlick Ex. A) 162:11-22, 166:14-21.

**Supporting portion, engaging portion, and locking portion.** Snap-fit connectors were widely known to have these elements, as shown by Dr. Sturges' illustration of a snap-fit connector. DF 32, 33, 35; Springett Rebuttal (Huang Ex. 7) at 86 ¶217, 218; Springett Initial (Huang Ex. 5) at 88 ¶170. In addition, Hilton '966 discloses "deformable arms" 18 (supporting portion) with "wedges" 24 (engaging portion) and "trailing face" 28 (locking portion) that lock into "aperture" 40. DF 32, 33, 35; Hilton '966 (Huang Ex. 11) at 8:63-66, 9:55-10:3; Springett Rebuttal (Huang Ex. 7) at 89 ¶227; Springett Initial (Huang Ex. 5) at 78 ¶146;

Sturges (Warlick Ex. A) 164:25-165:2. Sundberg '990 discloses "beam" 1347 (supporting portion) with "cantilever hook" 1346 (engaging portion) with "mating surface" 1348 (locking portion) that lock into cutouts 1368. DF 32, 33, 35; Sundberg '990 (Huang Ex. 13) at 11:40-45, 12:16-20, 12:36-12:46; Springett Initial (Huang§ Ex. 5) Ex. B at 34, 39-40; Springett Rebuttal (Huang Ex. 7) at 86 ¶218. In addition, Matsuoka '806 discloses a supporting portion and engaging portion with a locking portion (element 443) that locks against gear 47. DF 32, 33, 35; Matsuoka '806 (Huang Ex. 12) Fig. 6, 7(b); Springett Rebuttal (Huang Ex. 7) at 91 ¶232. Because the locking portion claim uses functional "capable of" language, the prior art need only be *capable* of performing the claimed function, and not necessarily intended to perform that function. *Ex Parte* Takahashi, No. 2004-2192, 2004 WL 2733658, at \*2 (B.P.A.I. Sept. 30, 2004).

**Rotational force receiving portion.** This element is superfluous because the claimed engaging portion is *capable* of receiving a force. DF 34; Sturges (Warlick Ex. A) 78:12-79:11, 80:4-9. *See Ex Parte* Takahashi, 2004 WL 2733658, at \*2. It was well known that snap-fit connectors, including Hilton '966 and Sundberg '990, generally include rotational force receiving portions, such that once two parts are connected and one part is rotated, both parts rotate together. DF

34; Sturges (Warlick Ex. A) 166:14-21; Springett Rebuttal (Huang Ex. 7) at 59 ¶147, 93 ¶235; Springett (Warlick Ex. C) 214:2-3.

**Displacing force receiving portion.** Dr. Springett explained that “[i]t is common sense to put a releasing tab on a snap-fit connector that is intended to be released.” DF 36; Springett Rebuttal (Huang Ex. 7) at 59 ¶148; Sturges (Warlick Ex. A) 89:11-90:7. Hilton ‘966 discloses gripper portions 29 that cause the wedges 24 to bend inwards and withdraw from apertures 40, thus releasing the clip. DF 36; Hilton ‘966 (Huang Ex. 11) at 10:10-19; Springett Rebuttal (Huang Ex. 7) 59-60 ¶149; Sturges (Warlick Ex. A) 162:23-163:7. This element is considered in more detail below, Part III.C.

**Wherein the displacing force receiving portion is more remote than the engaging portion.** This element is disclosed by the gripper portions 29 of Hilton ‘966. DF 37; Hilton ‘966 (Huang Ex. 11) at Figs. 1, 3, and 5; Sturges (Warlick Ex. A) 164:5-13.

Notably, there is no unexpected result in substituting the snap-fit connector of Hilton ‘966 with the collet chuck of Yoshiki ‘079. *See KSR*, 550 U.S. at 416 (distinguishing earlier case finding patent nonobvious where “the [known] elements worked together in an unexpected and fruitful manner”). As expected, the snap-fit connection is easily made and securely holds the toner bottle cap.

As a result, there is evidence that substituting the clip of Hilton '966 for the collet chuck of Yoshiki '079, in view of Matsuoka '806 and Sundberg '990, discloses or teaches every element of the patent. Summary judgment of non-obviousness should be denied.

**c. The Displacing Force Receiving Portion**

Canon asserts that the prior art does not teach or suggest the displacing force receiving portion. Mot. at 26. In fact, the element is taught by Hilton '966 gripper portions 29, as discussed above.

Canon points out that the grip portion 29 is at the free end of arm 18 and the wedge member 24 is farther down on the arm, thus “the relative locations of the asserted engaging portion and displacing force receiving portion are the reverse of what is claimed.” Mot. at 22. Canon is correct that, as construed by this Court, the “engaging portion” must be “provided at a free end of the supporting portion,” and the wedge 24 is not at a free end of the arm 18. However, an engaging portion “provided at a free end of the supporting portion” is disclosed by Sundberg '990 and element 443 of Matsuoka '806. DF 33.

Moreover, the simple reversal of the position of these elements on the arm 18 of Hilton '966 is a common sense alternative design choice, and is not inventive. The Supreme Court has rejected the contention that claim language



simply rearranging mechanical elements from the prior art can defeat obviousness as a matter of law. In *Graham*, the only relevant distinction between the patent-at-issue, the Graham '798 patent, and the prior art Graham '811 patent, was the interchanging of a shank and hinge plate on a plow. *Graham*, 383 U.S. at 22. The patentee argued that this difference reduced flexing of the shank, thus more effectively absorbing forces from obstructions in the soil, like rocks. *Id.* at 24. The Supreme Court found the rearrangement obvious to solve the flexing problem because “[t]he only other effective place available in the arrangement was to attach [the shank] below the hinge plate . . . .” *Id.* “Certainly a person having ordinary skill in the prior art [and recognizing the flexing problem] would immediately see that the thing to do was what Graham did, i.e., invert the shank and the hinge plate.” *Id.* at 25. The Court also emphasized that Graham’s “flexing” argument did not appear in the patent specification, was not raised in the patent office during prosecution, and Graham’s experts testified that the flexing advantage was not a significant feature in the patent. *Id.*

Similarly, in *Plasmart, Inc. v. Kappos*, 482 Fed. Appx. 568 (Fed. Cir. May 22, 2012) (nonprecedential), the Federal Circuit considered prior art that disclosed adding safety wheels to a child’s scooter, but did not disclose placement of those wheels in the exact location as claimed by the patent-at-issue. *Id.* at 573. The

court concluded that “[t]he decision to attach the . . . safety wheel [as claimed] instead of [as disclosed by the prior art] would have been a common sense alternative design choice and reasonably obvious to one of ordinary skill in designing a safety feature to prevent tipping of the . . . scooter.” *Id.* at 574; *see also Sparton Corp. v. U.S.*, 2009 WL 2948555, \*35–36 (Ct. Fed. Cl. 2009) (“The variation of known mechanical designs to achieve an alternative solution to the same problem . . . is obvious, especially where one skilled in the art could easily implement the variation.”).

Although the relative positions of the engaging portion and displacing portion are reversed, that alone cannot render claim 24 non-obvious as a matter of law. Like *Graham*, there are only two possibilities for how the engaging portion and displacing portion are situated relative to each other on the supporting portion, and it is not an inventive act to simply reverse those positions. *Graham*, 383 U.S. at 25. Significantly, the ‘012 patent does not state why the claimed position is in any way superior to the alternative, nor has Canon identified any such evidence outside of the patent. *See Id.* at 25. The rearrangement is simply a “common sense alternative design choice and reasonably obvious to one of ordinary skill.” *Plasmart, Inc.*, 482 Fed. Appx. at 574. That is particularly the case here where it is undisputed that the level of skill in the art is at least a B.S. degree in mechanical

engineering or several years of experience in toner bottle design. Springett Initial (Huang Ex. 5) at 16 ¶37; Sturges Validity (Huang Ex. 6) at 4 ¶11.

**d. The Hollow Cylinder and Hollow Cylindrical Driving Member do not have Additional Novelty**

As described in detail in Defendants' Consolidated Motion for Summary Judgment, there is a "tightly choreographed relationship between the claimed elements of the copier machine assembly and the claimed elements of the toner bottle and sealing member." Defs.' Consolidated Mot. at 17. The hollow cylinder and hollow cylindrical driving member are one half of the combination. The geometry and function of the hollow cylinder and hollow cylindrical driving member mirror the elements of the toner bottle and sealing member, and thus add no additional novelty. *Id.*

**e. The Asserted Dependent Claims Add no Additional Novelty**

Defendants assert claims 25 and 30, in addition to independent claim 24. The dependent claims add no additional novelty and are obvious in view of the prior art. DF 38, 39; Springett Initial (Huang Ex. 5) at 103 ¶204, 105 ¶209, 106-7 ¶211; Springett Rebuttal (Huang Ex. 7) at 108 ¶273, 109 ¶275-6; Yoshiki '079 (Huang Ex. 9) at 6:7-9; Hilton '966 (Huang Ex. 11) Fig. 1; Sundberg '990 (Huang Ex. 13) Fig. 10, 12:51-56.

**f. Hilton '966 and Sundberg '990 are Analogous Art**

Canon asserts that Hilton '966 and Sundberg '990 are not analogous art, and thus not relevant to an obviousness analysis. Mot. at 19, 24. These references are analogous because they address the same problem – connector alignment – as the '012 patent. Where the reference is not within the field of art, it may be analogous if it “is reasonably pertinent to the particular problem with which the inventor is involved.” *Scientific Plastic Prods., Inc. v. Biotage AB*, 766 F.3d 1355, 1359 (Fed. Cir. 2014) (citing *In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992)).

As discussed above, the '012 patent purportedly solves a problem with connector alignment and ease of connection. It is not directed toward any problem particular to toner bottles. In this regard, Hilton '966 is quite pertinent. Hilton '966 states that “[t]his invention is concerned with improvements in and relating to fastening, particularly but not exclusively in relation to connecting items to another item, for instance in relation to push chairs, other nursery equipment, vehicle seals, items of luggage, strapping, medical and recreational uses.” DF 11. Moreover, Hilton '966 is expressly intended to avoid alignment complications. The invention solves those problems by “allowing single handed operation by either hand,” “without requiring a specific orientation of the fastener . . . .” DF 12. This connector, so simple that it is usable by parent holding a child with only one hand



free, *see* DF 12, would absolutely be pertinent to an engineer developing a connector that avoids prior art alignment problems.

Similarly, the Federal Circuit recently held that prior art relating to closures for carbonated beverages were pertinent to a patent directed to a low pressure liquid chromatography cartridge. *Scientific Plastic Prods., Inc.*, 766 F.3d at 1361. The prior art threaded chromatography cartridges were known to leak at the seams. *Id.* The court approvingly cited the conclusion of the Board of Patent Appeals that “a person of ordinary skill seeking [a re-sealable cartridge] would reasonably look to sealing arrangements for other pressurized systems,” including the carbonated beverage art. *Id.* at 1359. The court dismissed the patentee’s argument that “chemists in laboratories would not look to ‘soda-pop’ bottle caps to solve problems with flash chromatography cartridges.” *Id.* at 1360. The court cited *In re Paulsen*, 30 F.3d 1475 (Fed. Cir. 1994), where the Federal Circuit found a “clam shell” laptop configuration to be obvious in view of “references directed to hinges and latches as used in a desktop telephone directory, a piano lid, a kitchen cabinet, a washing machine cabinet, a wooden furniture cabinet, or a two-part housing for storing audio cassettes.” *Id.* at 1481. The court reasoned:

The problems encountered by the inventors . . . were problems that were not unique to portable computers. They concerned how to connect and secure the computer’s display housing to the computer while meeting certain size constraints and functional requirements. . . .

We agree with the Board that given the nature of the problems confronted by the inventors, one of ordinary skill in the art would have consulted the mechanical arts for housings, hinges, latches, springs, etc.

*Id.* at 1481-82 (quotation marks omitted); *see also In re GPAC Inc.*, 57 F.3d 1573, 1578-79 (Fed. Cir. 1995) (finding camping tent ventilation flap references pertinent to a patent directed to an asbestos removal ventilation system because “these references address the same basic sealing problem in the same fashion—oversizing the flaps so as to overlap the opening and seal off the inside air from the outside air—as do the enclosure ventilation flaps in the . . . patent.”).

Thus, because the ‘012 patent is directed to a problem with connector alignment and ease of connection, Hilton ‘966 is pertinent. Similarly, Sundberg ‘990 is pertinent because it is directed to the same problem. Sundberg ‘990 states the advantage of the snap-fit connector is that components can be easily snapped together, while also increasing the strength of the coupling. DF 16; Sundberg ‘990 (Huang Ex. 13) 4:3-14. At the least, these references raise a genuine issue of fact as to whether they are analogous to the ‘012 patent. *See Scientific Plastic Prods.*, 966 F.2d at 1360 (“The analogous art inquiry is a factual one . . . .”)

**g. There are No Secondary Considerations of Non-Obviousness**

Secondary considerations, such as commercial success, praise for the invention, copying, long-felt and unmet need, failure of others, and unexpected results, “[a]s indicia of obviousness or nonobviousness, . . . may have relevancy.” *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). Here, Canon has identified no such secondary considerations that support non-obviousness.

**C. CANON’S REPLY**

**1. Defendants Do Not Oppose Canon’s Motion for Summary Judgment of No Invalidity Under 35 U.S.C. §§ 101, 102, and 112**

Canon should be granted summary judgment that the asserted claims are not invalid under 35 U.S.C. §§ 101, 102, and 112 because Defendants concede they do not dispute Canon’s arguments as to §§ 101 and 102 and make no substantive argument as to § 112. Defs. Opp’n at 3 n.1.

Defendants are wrong that Canon’s § 112 arguments are moot in view of the claim construction ruling. In construing the claims, the Special Master and the Court rejected Defendants’ arguments made during claim construction briefing that two particular phrases in claim 24 of the ’012 patent are indefinite. *See* D.I. 168 at 66-67, 83-84; D.I. 169. But the Special Master and the Court did not rule on any

other indefiniteness issues, and in particular did not hold that the four limitations alleged to be indefinite in Defendants' Amended Invalidity Contentions (*see* Huang Ex. 2 at pp. 26-28) are not indefinite, since that issue was not before them. Moreover, the claim construction ruling did not address other invalidity theories (e.g., enablement) potentially encompassed by Defendants' pleaded defenses and counterclaims, which broadly assert that the claims are invalid under § 112. The § 112 issue therefore remains ripe for adjudication, and summary judgment of no invalidity under § 112 should be granted.

## **2. Defendants' Obviousness Theory Fails as a Matter of Law**

### **a. References Essential to Defendants' Obviousness Theory Are Not Analogous Art**

Two of the four references on which Defendants rely—Hilton '966 and Sundberg '990—are non-analogous art that cannot be considered for obviousness purposes. *See In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992). Without them, Defendants' obviousness theory falls apart.

To be analogous art, a reference must either (1) be from the same field of endeavor, regardless of the problem addressed, or (2) if not from the same field, be reasonably pertinent to the particular problem the inventors faced. *See In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992). In determining reasonable pertinence, the



“purposes of both the invention and the prior art are important,” since if the invention and the prior art are directed to different purposes, “the inventor would accordingly have had less motivation or occasion to consider it.” *Id.* at 659.

Defendants do not contend that Hilton ’966, which Defendants characterize as being “particularly addressed to attaching a sun umbrella to a baby stroller,” and Sundberg ’990, which they characterize as relating to “a cardiac pacemaker lead,” are from the same field of endeavor as the ’012 patent. Defs. Opp’n at 7, 9. Instead, Defendants argue that Hilton ’966 and Sundberg ’990 are analogous because they supposedly address the same problem—connector alignment—that the ’012 patent allegedly addresses. *Id.* at 27.

Defendants’ argument completely miscasts the problem that the inventors of the ’012 patent faced. The Canon inventors did not face a problem of how to connect two parts. Rather, both parties’ experts agree that “[t]he particular problem that the Canon inventors faced was coming up with a simple and cost-effective way to mount a toner supply container in a copy machine that (1) would be easy to install and remove from a copy machine from the standpoint of the user, (2) would reliably seal toner within the container when outside the copy machine, and (3) would discharge the right amount of toner at the right time when installed in the copy machine.” Huang Ex. 6 at p. 149, ¶ 427 (Dr. Sturges articulating the

problem that the Canon inventors faced); Huang Ex. 7 at p. 30, ¶ 67 (Dr. Springett stating that he takes as correct Dr. Sturges's statement of the problem). The '012 patent discusses several ways in which prior art toner bottles were mounted in copiers and rotated to dispense toner, but notes that these prior art methods were too complicated and too expensive. *See* Huang Ex. 1 at col. 1, l. 39 – col. 2, l. 55.

Against this backdrop, the Canon inventors set out to design an improved toner supply container that would accomplish the three aforementioned undisputed objectives in a simple and cost-effective way. Significantly, not a single one of those objectives requires that a connection be made between the container and the copy machine. Simply because the solution that the Canon inventors created utilizes a connection does not mean they faced a problem of how to connect two parts, and their solution cannot be used to define the problem that they faced. *See Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377 (Fed. Cir. 2012) (holding that a district court's use of the invention to define the problem that the invention solves was "a form of prohibited reliance on hindsight"); *In re Shuman*, 361 F.2d 1008, 1012 (CCPA 1966) ("It is impermissible to first ascertain factually what appellants did and then view the prior art in such a manner as to select from the random facts of that art only those which may be modified and then utilized to reconstruct appellants' invention from such prior art.").

Unsurprisingly, given their disparate subject matters, neither Hilton '966 nor Sundberg '990 comes close to speaking to the problem of how to simply and cost-effectively mount a toner supply container in a copy machine such that the container (1) would be easy to install and remove from a copy machine from the standpoint of the user, (2) would reliably seal toner within the container when outside the copy machine, and (3) would discharge the right amount of toner at the right time when installed in the copy machine.

Hilton '966 discloses a fastener for “connecting items to another item, for instance in relation to push chairs, other nursery equipment, vehicle seals, items of luggage, strapping, medical and recreational uses.” Huang Ex. 11 at col. 1, ll. 7-10. Other examples of connectable items that Hilton '966 mentions include sun canopies, parasols, covers, umbrellas, trays, toys, car seats for children, and garden chairs. *Id.* at col. 1, ll. 36-53. Hilton '966's objective was to provide a fastener that can be easily operated with just one hand (left or right), which Hilton '966 says is helpful for a mother holding a child, a fisherman holding a fishing rod, or a disabled person having the effective use of just one hand. *Id.* at col. 1, ll. 11-35.

Sundberg '990 discloses a cardiac pacemaker lead for insertion into a patient's heart. Sundberg '990 addressed a need in the cardiac pacemaker field for an extendible and retractable lead with multiple conductors that are reliably



electrically insulated from one another and a terminal connection that can accommodate axial stress. Huang Ex. 13 at col. 2, ll. 30-33.

The problems that Hilton '966 and Sundberg '990 solve—in the case of Hilton '966, the need for a fastener that can be operated with just one hand, and in the case of Sundberg '990, the need for an extendible and retractable cardiac pacemaker lead with multiple conductors that are reliably electrically insulated from one another and a terminal connection that can accommodate axial stress—have nothing in common with the multi-faceted problem that the Canon inventors faced. Neither Defendants nor their expert contend that Hilton '966 or Sundberg '990 discloses a container that can be easily installed in and removed from some kind of apparatus, or teaches how to seal a powdery substance (*e.g.*, toner) within a container or how to discharge a powdery substance from a container.

The only thing that Hilton '966 and Sundberg '990 have in common with the '012 patent is that all three happen to utilize a snap-fit connection to solve their vastly different problems, but the fact that their respective solutions share something in common does not make them analogous. *See Scientific Plastic Prods., Inc. v. Biotage AB*, 766 F.3d 1355, 1359 (Fed. Cir. 2014) (“The pertinence of the reference as a source of solution to the inventor’s problem must be recognizable with the foresight of a person of ordinary skill, not with the hindsight



of the inventor's successful achievement."); *Mintz*, 679 F.3d at 1377-78 (prohibiting the use of the invention to define the problem). As the Federal Circuit has explained, purpose is paramount in determining whether a reference would have been reasonably pertinent to the problem the inventors faced:

[T]he purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it.

*Clay*, 966 F.2d at 659. Here, the inventions of Hilton '966, Sundberg '990, and the '012 patent serve vastly different purposes. In Hilton '966, the purpose is to enable one-handed operation. In Sundberg '990, the purpose is to electrically insulate conductors and accommodate axial stress in a device that gets inserted into a patient's heart. In the '012 patent, the purpose is to seal, unseal, and dispense toner from a toner bottle. Given the vastly different purposes, no person of ordinary skill in the art ("POSA") would have had any reason to consider Hilton '966 or Sundberg '990 in solving the problem that the Canon inventors faced.

Even if Defendants were correct that the Canon inventors faced a connection alignment problem (they are not correct, and Defendants' own expert agrees that

the problem is as Canon states above, *see* Huang Ex. 7 at p. 30, ¶ 67), Hilton '966 and Sundberg '990 would not solve that problem.

Defendants argue that “Hilton '966 is expressly intended to avoid alignment complications,” and “solves those problems by ‘allowing single handed operation by either hand,’ ‘without requiring a specific orientation of the fastener ....’” Defs. Opp’n at 28. At the end of this quote, Defendants substitute ellipses (...) for the words “relative to them,” referring to the user. Huang Ex. 11 at col. 1, ll. 30-35. These omitted words are important, because without them, Defendants give the incorrect impression that the male and female components in Hilton '966 can be fastened at any orientation relative to each other, when in fact they need to be aligned in order for the oblong male component to fit into the correspondingly-shaped female component. *See id.* at FIG. 1 (shown on the right). Utilizing the Hilton '966 fastener in a copy machine would not avoid the need to align the bottle half of the fastener with the machine half.

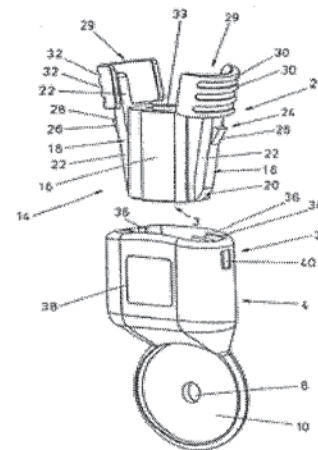


FIG. 1

Defendants argue that Sundberg '990 is directed to the so-called alignment problem because it teaches that “the

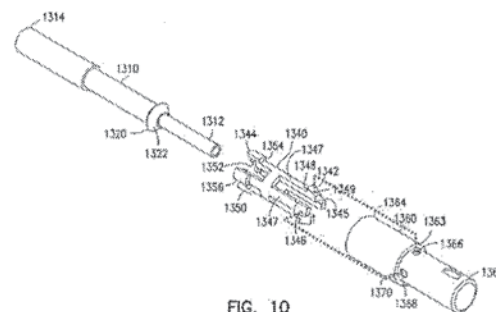


FIG. 10

advantage of the snap-fit connector is that components can be easily snapped together, while also increasing the strength of the coupling.” Defs. Opp’n at 30. But whether or not components are easily snapped together or exhibit increased strength has nothing to do with whether they must be aligned in order to be connected. In Sundberg ’990, hooks 1346 plainly need to be precisely aligned with cutouts 1368 in order to connect part 1340 with part 1360. *See* Huang Ex. 13 at FIG. 10 (shown on the right).

Notably, nowhere in his expert reports or deposition testimony does Defendants’ expert, Dr. Springett, opine that the Canon inventors faced an alignment problem or that Hilton ’966 or Sundberg ’990 teaches a solution to an alignment problem. In fact, Dr. Springett is already of record agreeing that the problem the Canon inventors faced is as set forth above by Canon. The so-called alignment problem is a recent and unsupported concoction of Defendants, made in an effort to stave off summary judgment, but “[u]nsubstantiated attorney argument ... is no substitute for competent, substantiated expert testimony.” *See Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1068 (Fed. Cir. 2005).

Defendants’ reliance on *Scientific Plastic Prods., Inc. v. Biotage AB*, 766 F.3d 1355 (Fed. Cir. 2014), *In re Paulsen*, 30 F.3d 1475 (Fed. Cir. 1994), and *In re GPAC Inc.*, 57 F.3d 1573, 1578-79 (Fed. Cir. 1995), is misplaced, because in each

of those cases the prior art was directed to the same problem as the patent-in-suit. In *Scientific Plastic*, the common problem was how to provide a fluid-tight seal at elevated pressures between a container and a resealable cap. *Scientific Plastic*, 766 F.3d at 1360. In *Paulsen*, the common problem was how to connect and secure one component to another while meeting certain size constraints and functional requirements. *Paulsen*, 30 F.3d at 1481-82. In *GPAC*, the common problem was how to prevent the backflow of contaminated air. *GPAC*, 57 F.3d at 1578. Here, Hilton '966 and Sundberg '990 are directed to problems completely different from the problem that the Canon inventors faced, and therefore are non-analogous art.

Thus, neither Hilton '966 nor Sundberg '990 is analogous art, yet both are essential to Defendants' obviousness theory. Indeed, Hilton '966 is the only reference that Defendants argue teaches a displacing force receiving portion (although it actually does not, as discussed in Canon's opening brief and below). *See* Defs. Opp'n at 23. Without Hilton '966 and Sundberg '990, Defendants' obviousness theory fails. This alone is grounds for granting summary judgment of nonobviousness.



**b. Defendants' Alleged Reasons for Combining Yoshiki '079 and Hilton '966 Are Insufficient as a Matter of Law**

Even if Hilton '966 and Sundberg '990 were analogous art (they are not, for the reasons just explained), Defendants fail to provide a sufficient articulated reasoning to show that it would have been obvious to substitute the clip of Hilton '966 for the collet chuck of Yoshiki '079. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). It is well-established that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. Therefore, to prevent hindsight bias, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.*

Defendants argue that a POSA (1) would have recognized that Yoshiki '079 and Matsuoka '806 had problems, (2) would have been motivated to find a solution that combines certain aspects of Yoshiki '079 and Matsuoka '806 and avoids their alleged problems, (3) would have searched for the solution in a “toolkit” that contains a wide variety of connectors, including snap-fit connectors, and (4) would have concluded that a snap-fit connector is the solution to Yoshiki '079's and

Matsuoka '806's alleged problems. For the reasons explained below, every step of Defendants' reasoning is flawed.

First, Defendants begin from a faulty premise. They assert that Yoshiki '079 and Matsuoka '806 had known problems, but the evidence does not support this. To support their assertion, Defendants cite only the expert report and deposition testimony of Canon's expert, Dr. Sturges. *See* Defs. Opp'n at 13-15. In the cited portions of his report and testimony, Dr. Sturges discusses advantages of the invention of the '012 patent over Yoshiki '079 and Matsuoka '806, but never does he state that, before Canon's invention, one skilled in the art would have perceived either Yoshiki '079 or Matsuoka '806 as having a problem. *See* Warlick Ex. D at pp. 12-13, ¶ 26; Warlick Ex. A at 82:2-84:3, 100:7-22, 102:19-103:2. That Dr. Sturges, with the benefit of hindsight, believes the invention of the '012 patent is better than the prior art does not mean that, before Canon's invention, those skilled in the art would have perceived the prior art as having a problem. *See Mintz*, 679 F.3d at 1377-78.

Building on this faulty premise, Defendants next argue that the answer to Yoshiki '079's and Matsuoka '806's supposed problems "would have been readily apparent: what was needed was a simple connector, like the collet chuck of Yoshiki '079, but one that both unseals and rotates the toner bottle." Defs. Opp'n

at 15. This argument fails for two reasons. First, as discussed above, Defendants have adduced no evidence that a POSA would have perceived any problems with Yoshiki '079 and Matsuoka '806. Second, it is nothing but attorney argument, as Defendants cite no evidence to back it up. *See Invitrogen*, 429 F.3d at 1068 (“Unsubstantiated attorney argument ... is no substitute for competent, substantiated expert testimony.”).

The third step in Defendants' reasoning assumes that the snap-fit connectors of Hilton '966 and Sundberg '990 would be in a “toolkit” (along with grippers, clamps, latches, clips, screws, nails, staples, magnets, and Velcro) where the POSA would have looked to find a solution to Yoshiki '079's and Matsuoka '806's alleged problems. *See* Defs. Opp'n at 15-16. But in a proper obviousness analysis, the only places where a POSA would have looked are pieces of analogous prior art. *See Oetiker*, 977 F.2d at 1447. For the reasons discussed, Hilton '966 and Sundberg '990 are non-analogous art, and therefore would not be in the toolkit. And even if they were in the toolkit, that alone would not render the asserted claims of the '012 patent obvious, as Defendants still must articulate some reason why a POSA would have combined the prior art in the manner claimed. *See KSR*, 550 U.S. at 418. Otherwise, Defendants' “toolkit” theory would eviscerate the fundamental principle that “a patent composed of several elements is not proved

obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* at 418.

Defendants next argue that, having found snap-fit connectors in the toolkit, “a person of skill in the art would have ... known that a snap-fit connector improves on prior art connectors, such as the collet chuck 10 of Yoshiki ’079 and the rotary power transmitting member 44 of Matsuoka ’806,” and “would have concluded that a snap-fit connector, such as Hilton ’966 or Sundberg ’990, solves the problems of Yoshiki ’079 and Matsuoka ’806.” Defs. Opp’n at 16-17. This argument fails, because Defendants have not established that the alleged problems of Yoshiki ’079 and Matsuoka ’806 were known; because Hilton ’966 and Sundberg ’990 are not analogous art that a POSA would have considered; and because the evidence Defendants cite does not support their argument.

As evidence, Defendants rely on statements by Dr. Sturges and Dr. Springett discussing what snap-fit connectors can do (*e.g.*, hold two parts together and transfer rotational force), but neither expert opines that a snap-fit connector would have improved upon Yoshiki ’079’s collet chuck or Matsuoka ’806’s rotary power transmitting member or solved any problems with those mechanisms. Defendants also rely on DF 24, which in turn cites two paragraphs in the Springett Rebuttal Report. *See* Defs. Opp’n at 17; DF 24 (citing Springett Rebuttal Report (Huang



Ex. 7) at p. 50, ¶ 127 and p. 54, ¶ 133). But neither of the cited paragraphs in the Springett Rebuttal Report explains how a snap-fit connector would improve upon or solve any alleged problems with Yoshiki '079 or Matsuoka '806. Dr. Springett merely asserts that a POSA would have substituted a snap-fit connector for Yoshiki '079's collet chuck, but does not explain why. *See ActiveVideo Networks, Inc. v. Verizon Comms., Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (faulting an expert for failing to explain why a POSA would have combined the prior art).

Significantly, Defendants present no evidence that anyone in any context (not just toner bottles and copiers) has ever used a snap-fit connector to improve a device that previously used a collet chuck. Nor do Defendants present any evidence that anyone has ever used snap-fit connectors and collet chucks interchangeably. Absent such evidence, there is no basis for a reasonable trier of fact to conclude that it would have been feasible, let alone obvious, to substitute Hilton '966's snap-fit connector for Yoshiki '079's collet chuck. *See id.* at 1327 (affirming the district court's grant of JMOL of no invalidity where an expert's obviousness opinions were "conclusory and factually unsupported").

**c. Even When Combined, Defendants' Cited Art Fails to Disclose At Least a Displacing Force Receiving Portion**

In its opening brief, Canon explained why none of the five references that allegedly disclose the “displacing force receiving portion” limitation of claim 24 in fact discloses that limitation. In their opposition, Defendants do not deny that four of those references—Yoshiki '079, Kawamura '208, Matsuoka '806, and Sundberg '990—fail to disclose a displacing force receiving portion. As for the fifth reference—Hilton '966—Defendants concede that the location of their alleged displacing force receiving portion vis-à-vis their alleged engaging portion is the opposite of what claim 24 requires, but nevertheless argue that it would have been “a common sense alternative design choice and reasonably obvious to one of ordinary skill” to rearrange them to meet the claim. *See* Defs. Opp'n at 23-26.

Yet, here again, Defendants cite no evidence to show that it would have been obvious, after substituting Hilton '966's clip for Yoshiki '079's collet chuck, to reverse the position of grip portion 29 and wedge 24 (Defendants' alleged displacing force receiving portion and engaging portion, respectively). Notably, Defendants' expert, Dr. Springett, has not expressed any such opinion. Defendants' assertion that it would have been “a common sense alternative design choice and reasonably obvious to one of ordinary skill” to rearrange grip portion

29 and wedge 24 is once again nothing more than unsupported attorney argument, which “is no substitute for competent, substantiated expert testimony.” *Invitrogen*, 429 F.3d at 1068. This is especially true here, where Defendants are arguing what would have been obvious to a POSA.

Defendants also argue that rearranging grip portion 29 and wedge 24 of Hilton '966 would be a “simple reversal,” but do not explain how the Hilton '966 fastener could work if the positions were reversed. Defs. Opp'n at 24. The Hilton '966 fastener is designed so that grip portion 29 extends beyond the top of the female component, where it is accessible, while the rest of the male component, including wedge 24, is seated within the female component. Reversing the positions of grip portion 29 and wedge 24 would, at a minimum, require a wholesale redesign of the Hilton '966 fastener, and may not even be possible. In any case, Defendants do not explain how any of that could be done.

This lack of explanation distinguishes the facts here from those in *Graham v. John Deere Co.*, 383 U.S. 1 (1966), and *PlaSmart, Inc. v. Kappos*, 482 Fed. Appx. 568 (Fed. Cir. May 22, 2012) (nonprecedential). In both of those cases, it was readily apparent that moving a prior art component from one location to another would have no bearing on the operation of the overall device. Here, not only is that not apparent, it is not even true.

Accordingly, even if Hilton '966 were analogous art (it is not), and even if it would have been obvious to substitute the clip of Hilton '966 for the collet chuck of Yoshiki '079 (it would not have been), Defendants' obviousness theory would still fail because the resulting combination would not satisfy at least the "displacing force receiving portion" limitation of claim 24.

**d. Yoshiki '079 Teaches Away from the Claimed Invention**

Another reason why Defendants' obviousness theory fails is because Yoshiki '079 teaches away from the claimed invention. "A prima facie case of obviousness can be rebutted if the applicant ... can show 'that the art in any material respect taught away' from the claimed invention." *In re Geisler*, 116 F.3d 1465, 1469 (Fed. Cir. 1997) (quoting *In re Malagari*, 499 F.2d 1297, 1303 (CCPA 1974**Error! Bookmark not defined.**))**Error! Bookmark not defined.****Error! Bookmark not defined.****Error! Bookmark not defined.**; *see also KSR*, 550 U.S. at 416 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious). A reference teaches away from an invention if modifying the reference in accordance with the invention would defeat the purpose of the reference or render it inoperable for its intended purpose. *See, e.g., In re Haruna*, 249 F.3d 1327, 1335-36 (Fed. Cir. 2001); *Tec Air, Inc. v. Denso*



*Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984).

Here, replacing Yoshiki '079's collet chuck with a snap-fit connector that is capable of receiving rotational drive force and transmitting that drive force to Yoshiki '079's toner bottle would defeat the purpose of Yoshiki '079's invention. According to Yoshiki '079, before the invention therein, toner tended to accumulate near the opening of the toner bottle, as depicted in FIG. 2 (shown on the left below). *See* Huang Ex. 9 at col. 2, l. 63 – col. 3, l. 13. To solve this problem, the Yoshiki '079 inventors came up with a toner bottle cap design that uses scrapers to prevent toner from blocking the bottle opening. As depicted in FIG. 4 (shown on the right below), the side of the cap 5 facing the toner bottle 1 includes toner scraping members 20. When the toner bottle is inserted into the copy machine, a chuck 10 in the copy machine grasps a tab portion 6 on the cap and pulls the cap away from the bottle opening to the open position shown in FIG. 4. In this open position, the toner scraping members remain within the bottle opening, but toner is able to flow out of the opening through the space between the toner scraping members. Once removed, the cap is held fixed by the chuck while the toner bottle is rotated to dispense toner. Because the toner scraping members

are affixed to the cap, any toner adhering to the inside of the opening is scraped away by the toner scraping members as the bottle rotates.

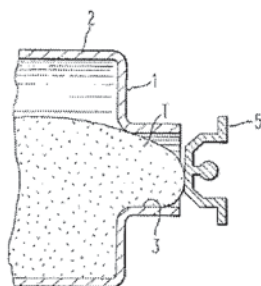


FIG. 2  
PRIOR ART

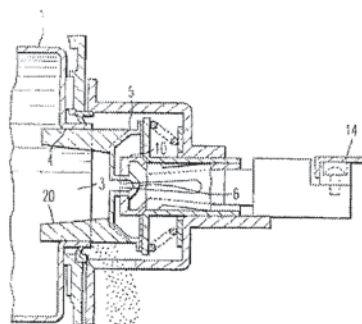


FIG. 4

In order to prevent toner buildup, the Yoshiki '079 toner bottle must be able to rotate relative to the cap. If the Yoshiki '079 cap were redesigned to rotate with the bottle, as Defendants propose, the toner scraping members would be unable to do their job. See Huang Ex. 6 at pp. 31-32, ¶ 52. Thus, no POSA, upon reading Yoshiki '079, would have thought to use Yoshiki '079's cap to transmit rotation to the bottle.

## V. SPECIAL MASTER'S ANALYSIS AND RECOMENDATIONS

### A. Introduction

As noted at the outset of this Report, Defendants' have either dropped or conceded all defenses except for their claim that the '012 patent is obvious.

Accordingly, the Special Master recommends that the Court grant Canon's motion as to Defendants' §§ 101, 102 and 112 defenses.

For the reasons detailed below, it is also recommend that the Court find the '012 patent to be nonobvious. The '012 patent is a truly unique, elegant and simple solution to the problem faced by the inventors and deserves the full protection of the law.

In short, it is recommended that the Court grant Canon's Motion in its entirety.

**B. The law to be applied**

In order to best understand why Defendants' § 103 defense falls flat, it is necessary to repeat some of the guiding principles related to the issue to demonstrate where Defendants went astray and failed to carry their burden on the issue.

- (1) First, it is Defendants' burden to prove that "the differences between the [patented subject matter] and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a) (pre-AIA).

- (2) Obviousness is a question of law based on underlying facts, including the scope and content of the prior art, the difference between the claims and the prior art, the level of ordinary skill in the art, and any objective indicia of nonobviousness. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).
- (3) It is well established that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). “This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *Id.* at 418-19. For this reason, the proper focus of § 103 is on the claimed invention as a whole, and not on the invention’s individual elements. *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1275 (Fed. Cir. 2004).
- (4) An obviousness analysis should not involve the use of hindsight, or a reading of the teachings of the invention into the prior art. *Graham*, 383 U.S. at 36.



(5) Finally, in order for the Court to grant summary judgment there must be on dispute as to any material facts.<sup>10</sup> The relevant facts related to this MSJ are the '012 patent and the nine prior art references relied on by Defendants. These patents all speak for themselves. There are, of course, multiple differences between the parties' expert opinions as to the meaning to be attributed these patents, but such differences cannot serve to defeat a summary judgment.

**C. Defendants fail to follow the law in selection of relevant prior art**

Defendants fail to follow the foregoing guidelines in several significant respects. They fail to properly analyze the problem facing the inventors at the time of the invention. They improperly used hindsight in selecting the prior art that the theoretical person of ordinary skill in the art (the "POSA")<sup>11</sup> would have considered in attempting to come up with the '012 invention. Finally, they misread the teachings of the invention into the prior art.

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<sup>10</sup> Although the Defendants contend that there is such a dispute, they provide the Court with no evidence in support of the allegation.

<sup>11</sup> The parties disagree about the level of skill the POSA would have in the relevant field. In this case, however, the differences do not matter as neither parties POSA would have had the skills to find an obvious solution to the problem at hand.

It is a given that the POSA who is attempting to find the invention obvious in light of the prior art, must start his/her analysis at the time of the invention. Obviously the '012 patent had not issued at such date, so its teachings would not be available as a guideline. Hence, the POSA starts with the same problem faced by the inventors of the '012 patent. In this case there is no bona fide dispute as to nature of such problem. Rather, both parties' experts agree that "[t]he particular problem that the Canon inventors faced was coming up with a simple and cost-effective way to mount a toner supply container in a copy machine that (1) would be easy to install and remove from a copy machine from the standpoint of the user, (2) would reliably seal toner within the container when outside the copy machine, and (3) would discharge the right amount of toner at the right time when installed in the copy machine." Huang Ex. 6 at p. 149, ¶ 427 (Dr. Sturges articulating the problem that the Canon inventors faced); Huang Ex. 7 at p. 30, ¶ 67 (Dr. Springett stating that he takes as correct Dr. Sturges's statement of the problem).

Defendants pay lip service to the foregoing statement of the problem and then brush it off in an effort to demean the invention by asserting that much of the prior art satisfied the same "attributes". But whether there is prior art that shares the same "attributes" as the invention, is completely irrelevant to the § 103 analyses. Next, Defendants elect to ignore the real problem facing the inventors

and improperly turn to the teachings of the '012 patent to create a new and different problem. Specifically, Defendants argue that the inventors (and therefore the POSA as well) were merely faced with finding a solution to certain alleged problems with the prior art cited in the '012 patent. Here is a summary of the argument that is repeated throughout their briefs:

The patent expressly identifies and purports to solve only a very specific problem in the prior art: the alignment needed for a user to install and effect an engagement between prior art toner bottles and a copier machine. .

Defendants' defense based on the foregoing is misdirected for several reasons. First, Defendants improperly use the patent disclosures to assist the POSA. Next, they totally misconstrue the teachings from the patent to reach the conclusions stated above. Defendants argue that the general discussion of certain prior art in the FIELD OF INVENTION AND RELATED ART section of the patent (Col. 1, line 15 to Col. 2, line 55—the "Hei art") can be boiled down to an "alignment" problem. Even if Defendants were allowed to use these disclosures to aid in the selection of prior art that the POSA would have had at hand, the brief summaries of the prior art relied on by Defendants cannot be reduced to a simple "alignment" problem. In first place, these discussions of the prior art are mere

overviews of the cited art and Defendants fail to provide the Court with any specific references from the Hei art patents in support of their position. Next, even though “engagement” and “alignment” issues are discussed in the summary of the art, the overriding concern for the inventors of the ‘012 patent is the complications and expense of these prior art inventions. (*See* Col. 2, ll 12-15; ll 31-32; ll 43-47). This view of the prior art by the inventors is confirmed in the next section of the ‘012 patent entitled SUMMARY OF THE INVENTION. Each “object of the invention” (five in total) concludes with the requirement that each member or part of the invention be “a simple structure” (Col. 2, ll 63-64; Col. 3, ll 2-3, 8-9,13-14 and 19-21).

Finally, it must be noted that none of Defendants’ arguments related to the Hei art cited in the ‘012 patent are supported by their expert, Dr. Springette. Indeed, although Dr. Springette’s reports cite more than 42 prior art references against the ‘012 patent (the Court reduced the number available to Defendants to 9), the Hei art is never mentioned. In short, Defendants entire argument on this point is pure , unpersuasive attorney argument.

Of course, once Defendants set up and rely on the “alignment” straw man, it is not surprising that they would find art to support their misguided view of the problem facing the inventors. In particular, Defendants argue a POSA would



readily go to and utilize the non-analogous “snap-fit” teachings found in the Hilton ‘966 and Sundberg ‘990 patents, to solve the alignment problem.<sup>12</sup> But, of course, the whole idea of a “snap-fit” solution is taken directly from the teachings of the patent and not available to the POSA. This art is clearly non-analogous art that, without the benefit of hindsight, a POSA would have never considered.<sup>13</sup> The fact that the inventors of the ‘012 had the insight into using the “snap-fit” concept in this context, is at the heart of the invention and there was nothing obvious about this selection.

Since the Hilton and Sandberg patents are the lynch pin to Defendants’ obviousness theory, the theory evaporates with the non-analogous art. For all of the foregoing reasons, alone, it is the Special Master recommendation that the Court grant Canon’s Motion and find the ‘012 patent non-obvious as a matter of law.

**D. Defendants’ obviousness theories fail for several other reasons**

For additional arguments and reasoning in support of the foregoing recommendation, the Special Master refers the Court to Canon’s excellent statement of facts and law found in its Reply Memo. In this connection, Canon has

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<sup>12</sup> Since both parties have provided the Court with full explanations for this art, no further explanation by the Special Master is required.

<sup>13</sup> Canon’s arguments related to this art are correct on the facts and law and are set forth in full above.

provided the Court with further support for the Special Master's conclusion that the Hilton and Sandberg references are non-analogous art and, hence, not be available to the POSA. Canon has also provided the Court with three additional reasons, and arguments in support of these reasons, why Defendants' obviousness theories fail:

1. Defendants' alleged reasons for substituting the clip of Hilton for the collet chuck of the Yoshiki '079 patent are insufficient as a matter of law.
2. Even if combined, Defendants' cited art is still missing at least the "displacing force receiving portion" limitation of claim 24.
3. The Yoshiki patent teaches away from the claimed invention.

The Special Master agrees with Canon's recitation of the facts and law as to each of the three additional reasons in support of their Motion. Accordingly, the Special Master recommends that the Court adopt such arguments and also grant Canon's Motion based upon these persuasive arguments as well.

**E. Conclusion**

In summary, the '012 patent provides an elegant and simple apparatus for supplying toner to a copying machine. The prior art is not even close and only by the magic of invention could this patent have been put together from such art. The invention is clearly non-obvious and Canon deserves full protection of the patent

laws for the '012 patent. Accordingly, as to repeat, it is the recommendation of the Special Master that Canon's Motion be granted in its entirety.

Dated: September 11, 2015

Respectfully submitted,

/s/ Gaynell C. Methvin

Gaynell C. Methvin

Special Master





