UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Shenzhen Tuozhu Technology Co., Ltd.,
Petitioner,

v.

Stratasys, Inc.,
Patent Owner.

IPR2025-00321
Patent 9,421,713

PETITIONER'S PRELIMINARY REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE

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Pursuant to emails issued by the Board on April 11 and April 14, 2025, Petitioner presents this reply to Patent Owner's Preliminary Response ("POPR", Paper 6) addressing "Patent Owner's arguments and evidence alleging an earlier date of invention." At a minimum, the current record raises numerous questions regarding what features were actually in possession of the inventors at the identified dates. These questions are best resolved only after a full PTAB trial, including cross-examinations, and the Board's assessment of that record. It is the very "purpose" of the Board. *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 279-80 (2016).

I. THE LARSON AND LEAVITT DECLARATIONS ARE IMPROPERLY INCORPORATED BY REFERENCE

The POPR includes barely more than a page of discussion asserting an earlier date of invention for the '713 patent while improperly incorporating by reference 215 total pages from the Larson and Leavitt declarations. Paper 6, 38-39. All analysis of the functionality of the "Solo printer" with respect to the challenged claims is improperly presented in the declarations alone rather than in the POPR. *Id.*; EX2010, 2-107; EX2011, 2-108. The dearth of any analysis of allegedly earlier developed systems with respect to the challenged claims within the POPR itself is fatal to Stratasys's claim of an earlier date of invention as it violates the PTAB rules that "*[a]rguments must not be incorporated by reference* from one document into another document." *See* 37 C.F.R. §42.6(a)(3). The total of 47 pages analyzing

functionality of the Solo printer and additional 31-page claim chart in the declarations clearly represent *arguments* that are required to be included in the POPR itself. EX2010, 2-56; EX2011, 2-57.

As held by the Federal Circuit, it is improper for a patent owner to "incorporate by reference a lengthy claim chart allegedly evidencing conception of the challenged claims" in an IPR proceeding. *Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1370-73 (Fed. Cir. 2023). Indeed, "conclusory assertions in the Patent Owner Response [are] insufficient to meet the Patent Owner's burden of establishing prior conception." *Id.* Allowing Stratasys to improperly incorporate the declarations into the POPR "would eviscerate all page limits for patent owner[] while maintaining restrictions on petitioner[]." *Id.* Stratasys could have "reallocated more of its brief[]" to allege an earlier date of invention with specificity, yet chose not to. *Id.* As the Court held in *Parus*, "[t]he burden of production cannot be met simply by throwing mountains of evidence at the Board without explanation or identification of the relevant portions." *Id.* The POPR's bare assertions are insufficient. Paper 6, 38-39.

As repeatedly held by the Board, it is improper for a party "to make its case through incorporation of [a] declaration and a claim chart" in lieu of including such analysis in the brief itself. *Blackberry Corp. v. Mobilemedia Ideas LLC*, No. IPR2013-00016, Paper 32 at 21 (PTAB Feb. 25, 2014) (citing Cf. *Globespanvirata, Inc. v. Tex. Instruments, Inc.*, 2005 WL 3077915, *1 (D. N.J. 2005)); *see also Google*

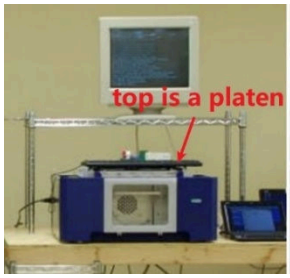
LLC v. Zipit Wireless Inc., No. IPR2019-01567, Paper 38 at 32 (PTAB Mar. 9, 2021) (citation to a claim chart in a declaration is "improper incorporation"); *Teva Pharms. Int'l GmbH*, No. IPR2018-01424, Paper 78 at 111 (PTAB Feb. 18, 2020) (improper incorporation of claim chart). This case is no different. For this reason alone, the POPR's arguments fall short and fatally neglect the *Parus* precedent.

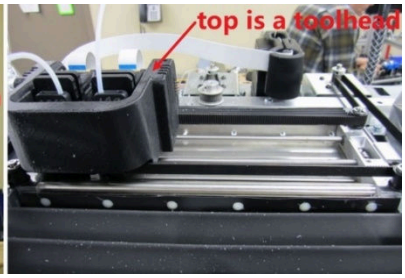
II. THE LARSON AND LEAVITT DECLARATIONS FAIL TO ESTABLISH AN EARLIER REDUCTION TO PRACTICE

Even if the Board considers the improperly incorporated material, the Larson and Leavitt declarations fail to establish that the inventors (1) constructed an embodiment or performed a process that met all the claim limitations of the claims, and (2) determined that the invention would work for its intended purpose at a date earlier than Mar. 8, 2013. *Cooper v. Goldfarb*, 154 F.3d 1321, 1327 (Fed. Cir. 1998).

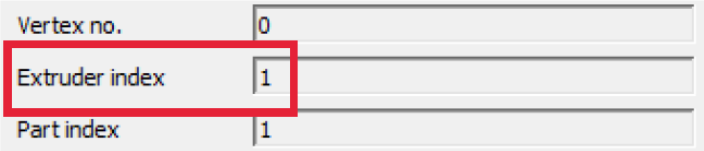
A. The declarations of Leavitt and Larson fail to establish an earlier reduction to practice for claim 1

First, the declarations fail to establish that the printer which actually executed the July 5, 2011 coordinate machine binary file ("CMB file") included "multiple print heads or deposition lines" as required by claim 1. The images in ¶¶10-12 of EX2011 appear to show different printers. The Mar. 2010 shows printers having a platen on top while the Nov. 2011 photo shows a toolhead at the top of the printer. Furthermore, Leavitt admits



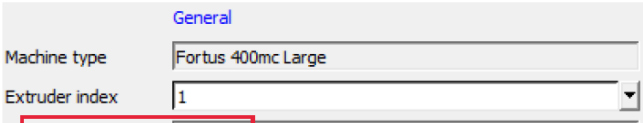


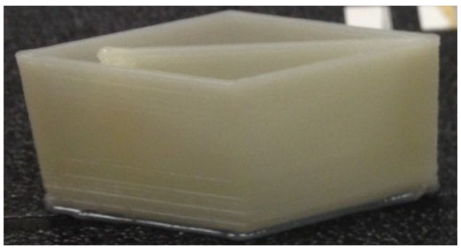
that the CMB file was created for the "Fortus 400mc Large" printer yet provides no evidence to support the assertion that the CMB file was compatible with the Solo printer nor any evidence that the identified CMB file was ever executed using the Solo printer (or any other printer having two heads/deposition lines). EX2011, ¶16. Most notably, ***every*** screenshot from the CMB file in the declarations shows an "Extruder index" of "1" indicating that all layers are printed from a single head/deposition line. EX2011, ¶¶16-22; EX2010, ¶¶16-22.



Second, there is no corroborating evidence to support Leavitt's assertions regarding switching deposition lines between stand-by and operating modes nor any discussion of what distinguishes stand-by from operating mode. EX2011, ¶¶13, 17.

Third, the evidence of record indicates that a single material was used for each layer, rather than distinct part and support structure material. The CMB file identifies only a single material: ***ABS-M30***. EX2011, ¶16. While Leavitt asserts that the blue and green layers shown in the CMB file represent "alternating layers of part and support material," the declarations never identify a second material distinct from ABS-M30. *Id.* Indeed, the alleged "purge tower" of the Oct. 2012 photo shows that every layer has the same color and consistency, indicating





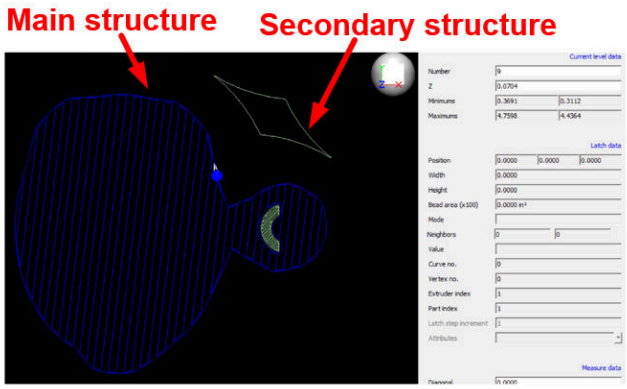
that a single material (ABS-M30) was used for all layers. *Id.*, ¶25.

Fourth, there is no corroborating evidence to support Leavitt's testimony that the blue path in the CMB file represents a "support structure" as claim 1 requires.

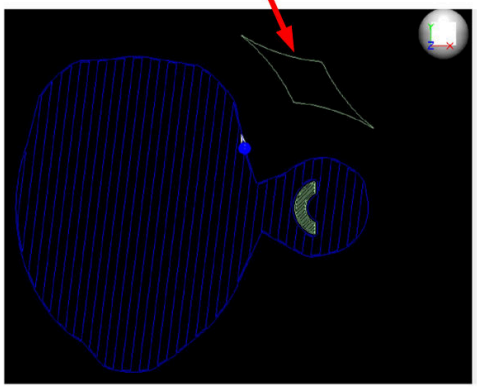
Fifth, Claim 1 requires each layer of the three-dimensional part, support structure, and purge tower to be printed according to a specific order. For example, claim 1 requires "performing a purge operation ***for each*** print head or deposition line ***switched to [an] operating mode***," by printing one or more layers of a purge tower "from the print head or deposition line ***switched to*** the operating mode." A deposition line switches to the operating mode "in-between [] printing of the layers of the three-dimensional part and the support structure." Claim 1 therefore requires a support deposition line of a 3D printer to (1) switch from the stand-by mode to the operating mode in-between printing a part layer and a support layer, (2) print a purge tower layer using support material after switching to the operating mode, and (3) print a support structure layer after printing the support material layer of the purge tower. The declarations do not describe a printer that meets these requirements.

The CMB file appears to depict a cross section of each layer in a multilayer build to be performed by a 3D printer. Many of these layers include snowman-shaped cross sections of a main structure and star-shaped cross sections of a secondary structure (depicted on the next page). EX2011, ¶¶16-22.

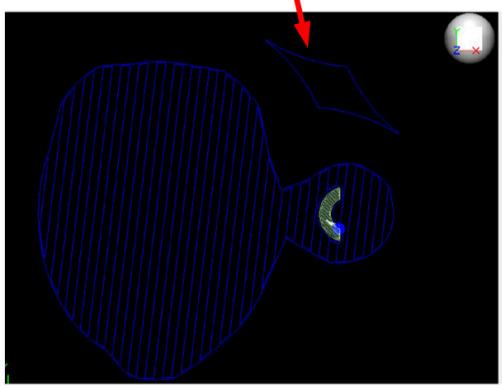
Leavitt asserts that the multilayer build includes support material (colored blue) and part material (colored green). EX2011, ¶16. There is no corroborating evidence to support the assertion that the colors are different materials or that the blue layers are "support structure." EX2011, ¶¶16-22. The secondary object appears to change color from green to blue (and vice versa) between consecutive layers. EX2011, ¶16.



LAYER 9 OF THE CMB FILE



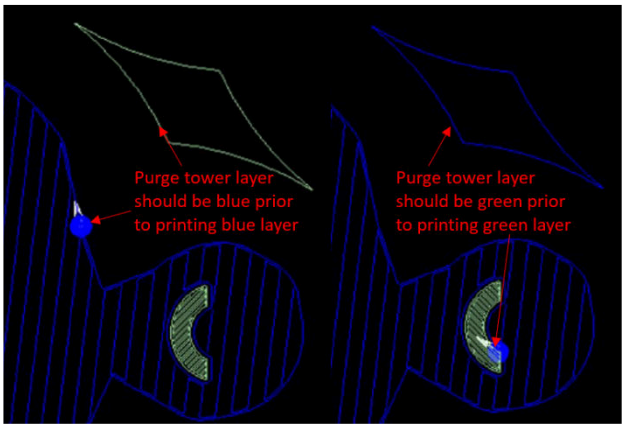
LAYER 9 OF THE CMB FILE



LAYER 10 OF THE CMB FILE

However, there is no evidence that a purge is performed when a deposition line is "***switched to the operating mode***" because nothing indicates that the blue layer of the secondary structure depicted in layer 10 of the CMB file represents a purge operation performed by a deposition line "switched to the operating mode" after printing a green layer of the main structure and prior to printing a blue layer of

the main structure. Indeed, the images appear to show the opposite, with the blue dot and white arrow indicating that the blue path of layer 9 is printed after the green layer of the secondary structure and the green path of layer 10 is printed after the blue layer of the secondary structure. This indicates that the "purge" is conducted at the end of printing a layer, rather than when the print head/deposition line is "switched to the operating mode" as required by claim 1.



Even if the blue portions depicted in the CMB file represent support material and the green portions represent part material, the CMB file provides no evidence as to the order that each portion is printed. For example, in layer 9 of the CMB file, it is not clear whether the green secondary structure layer is printed before, after, or between the blue and green portions of the main structure.

The declarations provide conclusory statements that "Control Center™" software caused the purge tower to be printed before the part and support structure in each layer. EX2011, ¶21 ("[t]he purge tower would be packed first in Control Center™ so that each layer would begin with printing the layer of the purge tower"); EX2010, ¶21. Yet the declarations cite no corroborating evidence in support of these conclusory statements, and nothing in the CMB file indicates any kind of print order within each layer. Such uncorroborated assertions by Stratasys's employees is

insufficient to establish an earlier date of invention. *Kolcraft Enters. v. Graco Children's Prods*., 927 F.3d 1320, 1324 (Fed. Cir., 2019). Independent corroboration of the Leavitt and Larson declarations is required because an inventor may "be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another's patent." *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996). This is especially true in the present case where the two declarations largely repeat each other verbatim.

Even if conclusory statements that each layer begins with printing the purge tower are taken at face value, there is no evidence or discussion as to the print order of the support structure (blue) material and the part (green) material in each layer.

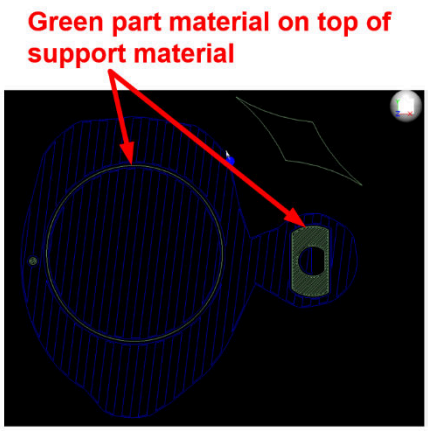
Due to the lack of evidence of a print order for the part, support structure, and purge tower in each layer, the declarations fail to demonstrate that the Solo printer "perform[ed] a purge operation for each…deposition line switched to the operating mode," the switch to the operating mode occurring "in-between the printing of the layers of the three-dimensional part and the support structure."

B. The declarations of Leavitt and Larson fail to establish an earlier reduction to practice for claim 16

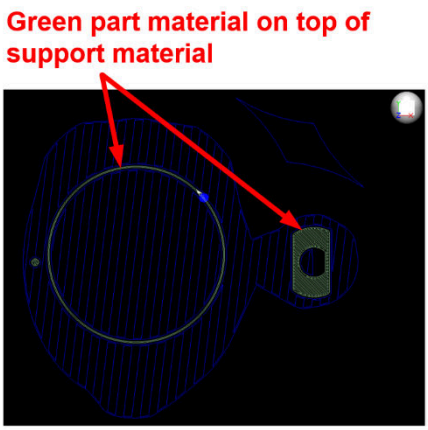
First, As discussed above, the evidence of record indicates that a single material (ABS-M30) was used for each layer, rather than distinct part and support material as required by claim 16. EX2011, ¶¶16, 25.

Second, Claim 16 requires the 3D printer to print a sequence of layers, including (1) "printing a first layer of a support structure," (2) "printing a first layer of the three-dimensional part on at least a portion of the first layer of the support structure," and (3) "printing a second layer of the support structure ***on at least a portion of the first layer of the three-dimensional part***." Even if the green and blue colors of the CMB file represent part material and support material, respectively, the CMB file does not provide an example of printing a layer of support material "on at least a portion" of a layer of part material.

Leavitt cites two consecutive layers of the CMB file (layers 149 and 150) as allegedly demonstrating "printing a second layer of the support structure *on at least a portion of the first layer of the three-dimensional part*" was reduced to practice. EX2011, ¶22 ("in layer 150, the blue lines indicate the tool paths for…(e) printing a second layer of the support structure on at least a portion of the first layer of the three-dimensional part from the support material after printing the second layer of the purge tower"). However, the CMB file for layers 149-159 ***does not depict a layer of the support structure printed on a***



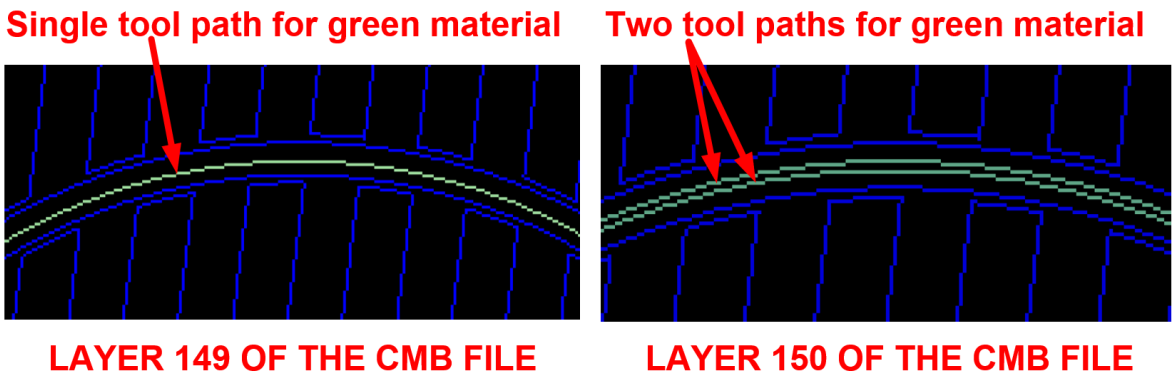
LAYER 149 OF THE CMB FILE



LAYER 150 OF THE CMB FILE

layer of the three-dimensional part, because there is no evidence that support material of layer 150 is printed on part material from layer 149. *Id*.

Instead, layers 149 and 150 show that the circular portion of the three-dimensional part includes two green tool paths in layer 150 as opposed to one green tool path in layer 149. EX2011, ¶22.



Layer 150 does not show blue (support) material over any area where there had been green (part) material of the main structure in layer 149. As such, there is no evidence that the support material for layer 150 is printed on the part material for layer 149. *Id*. Other than layers 149 and 150 of the CMB file, Leavitt cites no evidence of a support structure layer printed over a three-dimensional part layer.

Consequently, layers 149 and 150 do not demonstrate "a second layer of [a] support structure" printed on "at least a portion of [a] first layer of [a] three-dimensional part" as required by claim 16. *Id*. Because PO has not shown that every limitation of claim 16 was reduced to practice before September 21, 2012, *RepRap Article*, *RepRap Video*, and *Boyer* are prior art.

Respectfully submitted,

Dated: April 25, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(1) and 42.6(e)(4)(iii), the undersigned certifies that on April 25, 2025, a complete and entire copy of this Petitioner's Preliminary Reply to Patent Owner's Preliminary Response is provided via email to the Patent Owner via electronic mail on Patent Owner's lead and backup counsel listed below at the following email address:

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