

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NXTGEN TOYS, LLC,
PETITIONER,

v.

ZIPSTRING, LLC,
PATENT OWNER.

Case IPR2024-01213
Patent 11,674,774

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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LIST OF EXHIBITS

Exhibit 1001	U.S. Patent No. 11,674,774 (“the ’774 patent”)
Exhibit 1002	Declaration of Dr. Barry Kudrowitz
Exhibit 1003	CV for Dr. Barry Kudrowitz
Exhibit 1004	B. Yeany, String shooter-String launcher – physics of toys – Homemade Science with Bruce Yeany, YouTube video, June 11, 2014 (available at https://www.youtube.com/watch?v=rffAjZPmkuU) (“Yeany”)
Exhibit 1005	Abello, Margaux, <i>et al.</i> , String Shooter’s Overall Shape in Ambient Air, Volume 4, <i>Emergent Scientist</i> , 1-8, January 14, 2020 (“Abello”)
Exhibit 1006	Daerr, Adrian, <i>et al.</i> , The Charmed String: Self-Supporting Loops Through Air Drag, Volume 877, <i>Journal of Fluid Mechanics</i> , 1-12, August 20, 2019 (“Daerr”)
Exhibit 1007	Scorch Works, String Shooter, YouTube video, July 4, 2018 (available at https://www.youtube.com/watch?v=IGIDy-IJxmo) (“Scorch”)
Exhibit 1008	U.S. Patent No. 6,537,126 to Wagner (“Wagner”)
Exhibit 1009	C.C.L. Gregory, Theory of a loop revolving in air, with observations on the skin-friction, Q. J. Mech. Appl. Math. 2 (1949) (“Gregory”)
Exhibit 1010	Sunita Sharma, <i>et. al.</i> , <i>Yarn Hairiness Determination Using Image Processing</i> , IOSR Journal of Electronics and Communication Engineering, Volume 11, Issue 5, Ver. II (Sep.-Oct. 2016), pages 48-52 (“Sharma”)
Exhibit 1011	Anderson, Fundamentals of Aerodynamics, Sixth Edition, published by McGraw-Hill Education, 2017 (“Anderson”)
Exhibit 1012	G. K. Tyagi, <i>Yarn structure and properties from different spinning techniques</i> , Chapter 5 of Advances in Yarn Spinning Technology, pages 119-154, published by Woodhead Publishing Limited, 2010 (“Tyagi”)

Exhibit 1013	Screen shot taken at 6 minutes and 54 seconds into video from d’Art of Science, How to make a String Shooter? DIY String <i>Shooter</i> <i>dArtofScience</i> , YouTube video, June 29, 2018 (available at https://www.youtube.com/watch?v=bsZ93j_nUVc&t=283s) (“d’Art of Science”)
Exhibit 1014	Print out of Yeany Youtube webpage (printed from https://www.youtube.com/watch?v=rffAjZPmkuU)
Exhibit 1015	Print out of Scorch Youtube webpage (printed from https://www.youtube.com/watch?v=IGIDy-IJxmo)
Exhibit 1016	Print out of d’Art of Science Youtube webpage (printed from https://www.youtube.com/watch?v=bsZ93j_nUVc&t=283s)
Exhibit 1017	First Amended Complaint in <i>ZipString, LLC v NxtGen Toys, LLC</i> , case 1:24-cv-00136-TCB, filed on April 8, 2024
Exhibit 1018	Prosecution history of the ’774 patent
Exhibit 1019	Copy of ZipString Youtube webpage, <i>The Science of ZipString</i> , YouTube video, January 3, 2023 (available at https://www.youtube.com/watch?v=9MtrcXZbHh8))
Exhibit 1020	Print out of ZipString’s FAQ webpage (printed from https://zipstring.com/pages/faqs)
Exhibit 1021	Print out of Google support website (printed from https://support.google.com/youtube/answer/57407?hl=en&ref_topic=9257439&sjid=7169604476855613924-NC)
Exhibit 1022	Print out of ZipString Patents webpage (printed from https://zipstring.com/pages/patents)

I. INTRODUCTION

On May 20, 2025, Patent Owner filed its Response to the Petition (PO Resp). Patent Owner provides arguments as to only certain limitations of claims 1, 4, 12 and 16, which Petitioner addresses in this Reply. These claims as a whole, and the claims not discussed in Patent Owner's Response, are obvious for the reasons provided in the Petition.

Patent Owner's arguments largely rely on the improper importation of limitations from the specification into the claims. For example, Patent Owner attempts to limit all the independent claims to require that the housing receives the wheels and the body be hand-held despite such limitations not appearing in any independent claim. Yet, even if the Board were to adopt these new requirements, the challenged claims would still be obvious in view of by the prior art as discussed below.

In addition, with respect to the loading slot of dependent claim 4 (address in Ground 4), Patent Owner argues there is no motivation to combine because there are some drawbacks to adding a loading slot to Wagner's device. Yet, the existence of some drawbacks does not overcome Petitioner's motivation to improve the convenience of loading strings in Wagner's string shooter device by using a loading slot, which even Patent Owner's expert concedes would be the case. Patent Owner also argues that the prior art combination does not teach all of the limitations of

claim 4 by wrongly suggesting the prior art should be combined in a manner differently than proposed in the Petition. Patent Owner's failure to address the actual argument presented in the Petition merely confirms the obviousness of claim 4.

II. REPLY ARGUMENTS

A. Ground 1 - Yeany Anticipates Claims 1-3, 12 and 15

1. Claim 1

For claim 1, Patent Owner provides brief and conclusory arguments as to limitations [1.1], [1.2] and [1.4]. All of these arguments rely on improper importation of limitations into the claims without any explanation from Patent Owner on why the Board should do so. Each of those arguments are addressed below.

[1.1] – a body;

Patent Owner argues that “the body of the claimed device is configured to be held by a user [‘774 Patent Col. 6, lines 14-17] and that Yeany is not so configured.” PO Resp. at 10. Yet, the citation Patent Owner relied on expressly describes “embodiments...where the user holds the body.” Ex. 1001 at 6:14-17. It is well-established that “a court may not read into a claim a limitation from a preferred embodiment, if that limitation is not present in the claim itself.” *Bayer AG v. Biovail Corp.*, 279 F.3d 1340, 1348 (Fed. Cir. 2002); *see also Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (“Even when the specification describes only a single embodiment, the claims of the patent will not be read

restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.”).

Here, claim 1 of the ’774 Patent merely recites “a body” and places no further limitation on the claimed body, let alone that the body is held by a user or hand-held. Patent Owner’s conclusory argument does not attempt to identify any language in the ’774 Patent that demonstrates a clear intention to limit the claim scope of body to hand-held. Rather, the ’774 Patent makes explicit that the claims are not to be limited to the disclosed embodiments. *See* Ex. 1001 at 11:62-12:15 (“Therefore, it is to be understood that the present disclosure is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims.”).

Nevertheless, even if this embodiment where a user holds the body were to be read into the claims, it is disclosed by Yeany. At one point, Professor Yeany is shown holding the body of the string shooter device in his hands, as shown below. Ex. 1004, 2:50-3:28. Therefore, Yeany discloses a body with a size and shape configured to be held by a user’s hand (and actually held by a user while using the device).



[1.2] – a housing attached to the body;

Patent Owner does not dispute that Yeany’s tubing receives and houses the string of the string shooter device, but argues that Yeany’s tubing is not “a housing as disclosed in the ’774 patent that is configured *to receive wheels* for propelling the looped string. [’774 Patent Col. 9, lines 37-38].” PO Resp. at 10 (emphasis added).

First, claim 1 of the ’774 Patent does not require that the housing is configured to receive wheels. Claim 1 of the ’774 Patent only requires that the housing be “attached to the body,” which is disclosed by Yeany.

Once again, the Patent Owner is trying to improperly read limitations from the specification into the claims. The ’774 Patent refers to a housing that receives

the wheels as merely an embodiment. The Patent Owner relies on a '774 Patent citation which states that:

FIGS. 6-9 illustrate the housing 100 that is configured to receive therein wheels for propelling a looped string. The housing 100 includes a loading slot 101 dividing a left wheel cover 106 from a right wheel cover 107, where the right wheel cover 107 extends at least partially over both wheels. The loading slot 101 opens to an aperture that extends from a front guiding slot 108 to the intake aperture 104.

Ex. 1001 at 9:37-43. Unsurprisingly, Figures 6-9 and their associated features are described as “an example embodiment.” Ex. 1001 at 3:19-24; *see also id.* at 1:63-2:10 (describing various features of the housing as “example embodiments”).

The challenged claims are not limited to the exemplary embodiment shown in Figures 6-9. *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007) (“patent coverage is not necessarily limited to inventions that look like the ones in the figures”); *Skedco, Inc. v. Strategic Operations, Inc.*, 685 F. App'x 956, 960 (Fed. Cir. 2017) (“a claim is not limited to inventions looking like those in the drawings. This guidance is especially apt here because the patent refers to the drawings to which StOps points as ‘exemplary embodiment[s].’”) (citing *MBO Labs*)

Furthermore, the description of the embodiment shown in Figures 6-9 includes numerous other features that Patent Owner does not contend must be read into the claims such as a loading slot with the various features described in the above

quoted citation. Ex. 1001 at 9:37-43. In addition, dependent claims of the '774 Patent expressly limit the housing to certain of these features such “wherein the housing covers, at least partially, the pair of wheels” and “wherein the housing defines a loading slot through which the string is loaded. *See e.g.*, Ex. 1001 12:38-56 (dependent claims 4 and 10). The presence of these dependent claims indicates that the housing features of Figures 6-9 in the '774 Patent are optional embodiments that must be expressly claimed rather than a feature of the invention itself. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”).

As such, Patent Owner’s attempt to limit the claims to the embodiments shown in Figures 6-9 is improper under Federal Circuit case law. This is especially true as the '774 Patent explicitly states the claims are “not to be limited to the specific embodiments disclosed. Ex. 1001 at 11:62-12:15.

Here, claim 1 of the '774 Patent make no mention of a housing configured to receive wheels for propelling the looped string. Instead the only requirements of the housing is that is be “attached to the body,” which Patent Owner does not dispute is disclosed by Yeany’s tubing that is attached by red tape to the body of Yeany’s device.

[1.4] – a string, wherein the string comprises a surface texture configured to increase air friction in response to the string being propelled through air by the pair of wheels, wherein the string defines an axis along which the string extends, and wherein the string comprises a plurality of fibers extending away from the axis.

While the Patent Owner argues that the audio portion of Yeany “is completely silent as to the surface texture of the string,” Patent Owner acknowledges that the video portion of Yeany (Ex.1004, 1:14-1:25) shows a string with “a fuzzy surface texture.” PO Resp. at 11; *see also* Ex. 2002 at ¶103 (Patent Owner’s expert acknowledging Yeany discloses a “close-up of a fuzzy string). Notably, Patent Owner does not dispute that the “fuzzy” surface of this string is comprised of a plurality of fibers extending away from the string axis or that the string is propelled through the air by the pair of wheels. Ex.1004, 1:03-1:25; ¶83.

The only dispute appears to be that Yeany fails to expressly “indicate that the fuzziness is configured to increase the air friction as claimed.” PO Resp. at 11 (citing Ex. 2002 at ¶103). Yet, in “an anticipation analysis, the dispositive question is whether a skilled artisan would ‘reasonably understand or infer’ from a prior art reference that every claim limitation is disclosed in that single reference.” *Acoustic Tech. v. Itron Networked Solutions*, 949 F. 3d 1366, 1373 (Fed. Cir. 2020) (quoting

Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc., 344 F.3d 1186, 1192 (Fed. Cir. 2003).

Patent Owner and its expert simply ignores the testimony of Dr. Kudrowitz, supported by textbooks and other prior art discussing the physics of string shooter devices, that a POSITA would understand the physics of string shooters rely on air friction to create lift on the string overcoming the effect of gravity. Ex. 1002 at ¶¶42-47. It is well settled that extrinsic evidence “may be used to interpret the allegedly anticipating reference and to shed light on what it would have meant to a PHOSITA.” *Monsanto Technology LLC v. EI Dupont Dr Nemours*, 878 F. 3d 1336, 1345 (Fed. Cir. 2018) (internal mark-ups omitted). In view of the background knowledge, Dr. Kudrowitz testified that a POSITA would understand that Yeany’s fuzzy string is configured to increase air friction either implicitly or inherently. *See* Petition at 37-40 (citing Ex. 1002, ¶¶86-90) (for example, since the “radiating extending fibers on the Yeany string must have some volume, mass, and surface area...a POSITA would know that the fibers extending from Yeany’s string surface would necessarily increase the air friction”); *see also* Ex. 1002 at ¶¶94-96 (Dr. Kudrowitz explaining how the movement of the string shown in Yeany can only be explained by lift created by air friction and not solely by momentum).

In addition, Patent Owner ignores that the ’774 Patent itself discloses that a increase in surface area (i.e., fuzzy string surface) is all that is needed to configure a

string to increase air friction, which is precisely what Yeany discloses. Ex. 1001, 5:21-26 (“The effect of the ‘fuzzy’ surface of the string magnifies the air friction thereby magnifying the positive lift against gravity...The threads increase a surface area of the string, and impart turbulence around the string...”); *see Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1570 (Fed. Cir. 1997) (prior art does not need to disclose limitations in greater detail than the challenged patent).

Lastly, Patent Owner cites only to paragraph ¶103 of Dr. Janét’s declaration to support its argument. PO Resp. at 11. Thus, the Board should not consider the uncited portions of Dr. Janét’s declaration that appear to address additional issues not raised in Patent Owner’s response.¹ 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”); *3M Company v. Evergreen Adhesives, Inc.*, 860 Fed. Appx. 724 (Fed. Cir. 2021) (affirming PTAB’s decision to exclude arguments in expert declaration where the party’s brief “never sufficiently made the relevant ‘contention’ or argument at all”); *DeSilva v. DiLeonardi*, 181 F.3d 865, 866-67 (Fed. Cir. 1999) (“[a] brief must make all arguments accessible to the judges, rather than ask them to play archeologist with the record.”).

¹ This is true for other limitations and grounds as well. The Board should not consider statements provided in Dr. Janet’s declaration but not raised or relied on in Patent Owner’s Response.

Yet, even if the Board were to consider the arguments found only in Dr. Janét's declaration but not the Patent Owner's response, they are legally irrelevant. Dr. Janét opines that Yeany's string "could" have been smooth at one point in time and only became fuzzy after use. Ex. 2002 at ¶¶104-107 ("Yeany's strings could have been smooth, even if just at the beginning of their use"). First, Dr. Janét admittedly relies on speculation of what "could" have occurred as he provides no evidence that Yeany ever used a smoother string or that the string was so perfectly smooth it would have no fibers extending away from the string axis. Speculative and conclusory testimony without any supporting evidence is entitled to no weight. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential) ("[T]he cited declaration testimony is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight.") (collecting cases).

Second, even if Dr. Janét's speculation that Yeany's string was smoother at some hypothetical point in time was correct, that fact also would not overcome anticipation. The Yeany video discloses at least one embodiment where the string has fuzzy extending fibers configured to increase air friction (even if hypothetically Yeany also disclosed a different embodiment using a perfectly smooth string at another point in time). There can be little dispute that Yeany explicitly discloses a string shooter device with a fuzzy string where the fuzzy extending fibers of the

string increases air friction when the string is propelled by the wheels. The law only requires that a single embodiment of a prior art reference is needed to anticipate the claim, not that every possible embodiment of the prior art must anticipate the claim

2. Claim 12

Patent Owner argues that claim 12 is patentable “[f]or the reasons discussed with respect to claim 1.” PO Resp. at 11. Petitioner addressed Patent Owner’s argument for claim 1 above and thus the same applies to Patent Owner’s argument for claim 12.

3. Claim 15

Patent Owner argues that claim 15 is patentable because “Yeany does not teach a housing” and thus cannot teach an intake or exit aperture of the housing. PO Resp. at 11-12. Petitioner addressed Patent Owner’s argument for the claimed “housing” above with respect to limitation [1.2] and thus the same applies to Patent Owner’s argument for claim 15. If anything, the “housing” of claim 15 is even broader than claim 1, since claim 15 does not recite the housing is “attached to the body” like is recited in claim 1. Moreover, Patent Owner does not dispute Yeany’s tubing (the claimed housing) has an intake and exit aperture where the string enters and exits the tubing. *See* Petition at 52-53.

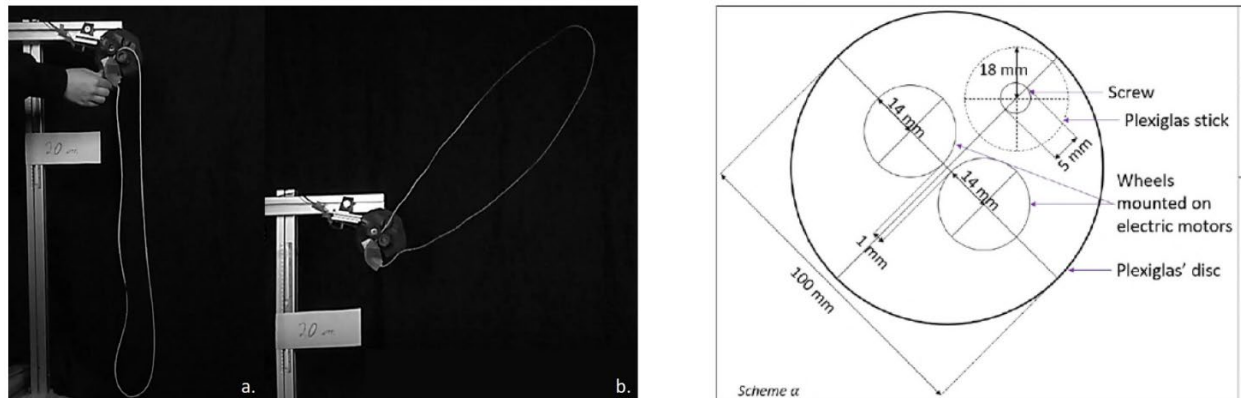
B. Ground 2 – Abello in view of Yeany Renders Obvious Claims 1-3, 12 and 15-17

For Ground 2, Patent Owner again relies on its erroneous interpretation of housing and body. In addition, on the limitation reciting a string surface configured to increase air resistance, Patent Owner’s argument that a POSITA would prefer a smoother string directly contradicts Abello’s teaching that a smoother string is less desirable since it requires higher motor speeds increasing wear. Instead, as explained in the Petition, Abello teaches that a POSITA would desire to use a string with a rough surface (i.e., a fuzzy string) to improve performance. This teaching in Abello is consistent with the background knowledge of a POSITA that increasing air friction improves lift for string shooter devices.

1. Claim 1

Patent Owner wrongly tries to import the limitations that the body must be “configured to be held by a user” and the housing must be “configured to receive wheels for propelling the looped string.” PO Resp. at 12. As explained in Ground 1, there is no basis to import such limitations into the claim. *See supra* Section II(A)(1). Yet, even if a hand-held device were required, Abello provides a picture with a user’s hand holding a part of the device as well as providing express dimensions (e.g., 100mm plexiglass disc) further teaching a size and shape of a device that is configured to be held by a user’s hand as shown below. Ex. 1005 at Fig. 1 and Fig.

Abello also teaches the body comprises a metal base that is likewise sized and shaped to be held by a user's hand. Ex. 1005 at Fig. 2, Fig. 3 and 2.



Ex 1005 at Fig. 1 and Fig. 3

Next, Patent Owner argues that Dr. Kudrowitz opines that Abello does not provide explicit details on the surface texture of the string. However, this merely refers to disclosure of fibers extending from the string's axis as recited in the claim and is irrelevant since the Petition relies on obviousness rather than anticipation for this limitation. PO Resp. at 12; *see* Ex. 1002 at ¶111 (Dr. Kudrowitz stating that “Abello...does not expressly state the string has fibers extending away from the axis.”). Patent Owner fails to address Dr. Kudrowitz's testimony that relies upon Abello's teachings about strings have different surface characteristics, from smoother to rougher, and that a rough string surface induces “more air drag and thus facilitated its takeoff.” (citing Ex. 1005 at ¶¶2 and 4-5). These teachings, in light of the background knowledge of a POSITA that string shooters use air friction to overcome gravity (Ex. 1001 at ¶¶45-46) and that strings with fibers extending from

their surface were known for use with string shooters (*id.* at 50-53), support Dr. Kudrowitz’s opinion that using a string with fibers extending away from the string’s axis (such as the string shown in Yeany) would have been obvious to use with Abello’s string shooter. Ex. 1001 at ¶¶111-114 and 125-126.

Lastly, Patent Owner wrongly states that Abello indicates a preference for smoother strings since they have the “highest takeoff speeds.” *Id.* (citing Ex. 1005 at 4-5). Patent Owner completely misreads Abello because *a high takeoff speed is a negative* – rather than a preferred trait. As Abello expressly states, higher speeds caused excessive wear which was noted as a “severe issue.” Ex. 1005 at 7 (“The most severe issue however was wear, especially at higher speeds.”); Ex. 1002 at ¶66. This is in part why a POSITA would prefer a string with low takeoff speed (e.g., fuzzy string) to reduce power and noise while also allowing for a smaller motor and battery. Ex. 1002 at ¶112-113. Notable, neither Patent Owner nor its expert provide any reasoning to support their contradictory conclusion that a high takeoff speed was desirable. *Xerox*, IPR2022-00624, Paper 9 at 15 (conclusory expert testimony “is entitled to little weight.”).

Thus, rather than teach away from fuzzy strings as Patent Owner contends, a POSITA would have found it obvious to use a string surface with extending fibers to improve the performance of Abello’s string shooter device. *See* Petition at 60-61.

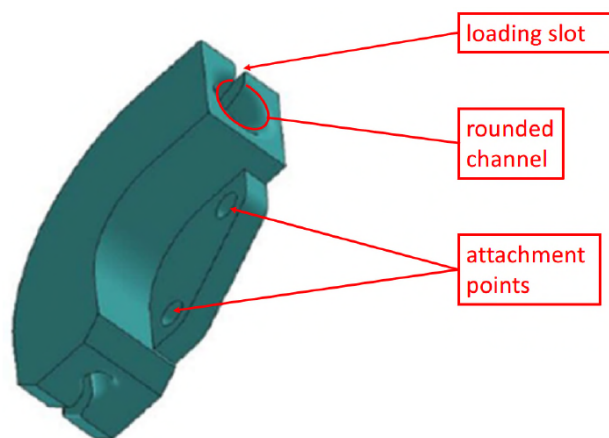
2. Claims 12 and 15

For claims 12 and 15, Patent Owner relies entirely on the arguments it raised for Ground 1. PO Resp. at 13. Petitioner has already addressed why Patent Owner's argument is unpersuasive. *See supra* Section II(A)(2) and (A)(3).

3. Claim 16

For claim 16, Patent Owner first argues that the prior art does not teach body or housing under Patent Owner's erroneous interpretation of those limitations. PO Resp. at 13. As discussed previously, there is no basis to import these limitations from the specification into the claims. *See supra* Section II(A)(1).

Notably, Patent Owner only disputes that Abello's sheath is a housing under its construction, but does not dispute that a string is received into the sheath (e.g., the housing) via a loading slot disposed over at least one wheel as explained in the Petition:



Scheme 8

A portion of Figure 3 of Ex.1005

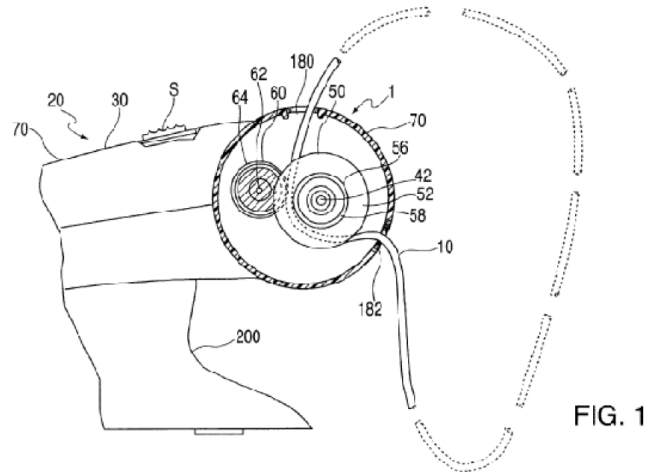
Petition at 56-57 and 69-70.

C. Ground 3 – Wagner in view of Yeany Renders Obvious Claims 1-3, 12 and 15

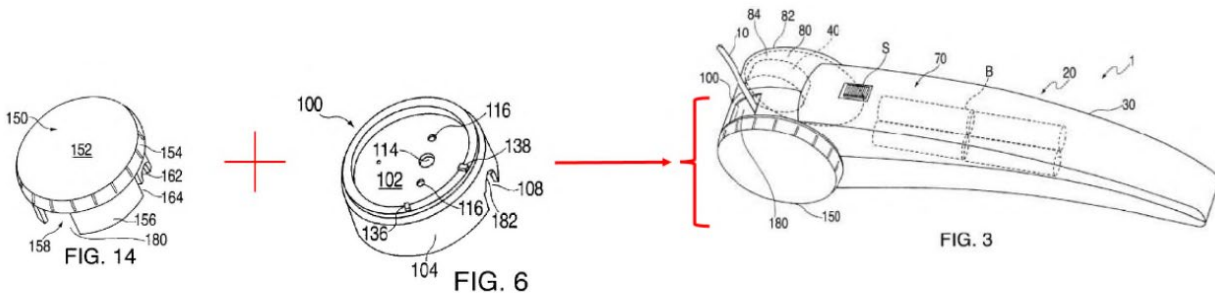
1. Claim 1

For claim 1, Patent Owner relies entirely on the arguments it raised for Ground 1 that Yeany fails to disclose the claimed surface texture of the string. PO Resp. at 14. Petitioner has already addressed why Patent Owner’s argument is unpersuasive. *See supra* Section II(A)(1).

Patent Owner also inexplicably asserts that “[b]ecause Yeany does not disclose the body, housing...as recited in claim 1 and because Wagner does not cure the deficiencies found in Yeany” that claim 1 is patentable for these additional reasons. PO Resp. at 14. While Patent Owner is incorrect that Yeany fails to disclose the body and housing limitations of claim 1 (as discussed above), even if it were correct that would have little bearing on Petitioner’s argument for Ground 3. For Ground 3, the Petition relies on Wagner’s teaching of a body and housing which is materially different from Yeany’s teachings as shown below:



Ex. 1008 at Fig. 1



a housing attached to a body

Ex. 1008 at Figs. 3, 6 and 14

Perhaps most relevant is that Wagner indisputably teaches both a body “configured to be held by a user” and a housing “configured to receive wheels for propelling the looped string,” which are the two incorrect basis for Patent Owner’s arguments to distinguish Yeany. Ex. 1008 at 2:23-33 (Wagner’s body “comprises a handle 30 for gripping” the device), 2:37-3:15 (housing receives a pair of wheels for propelling the string), and 6:32-34 (device “is portable and may be operated while hand cared [sic] by the user.”). While these limitations should not be imported in the

claims as explained previously, even if they were then the combination of Wagner and Yeany would render them obvious.

2. Claims 12 and 15

For claims 12 and 15, Patent Owner relies entirely on the arguments it raised for Ground 1. PO Resp. at 14-15. Petitioner has already addressed why Patent Owner's argument is unpersuasive. *See supra* Section II(A)(2) and (A)(3).

3. Claim 16

For claim 16, Patent Owner argues that neither Wagner nor Yeany teach “a housing defining a loading slot.” PO Resp. at 15. Yet, Petitioner did not challenge claim 16 under Ground 3 and thus this argument is moot (however claim 16 is challenged under Grounds 2 and 4).

D. Ground 4 – Wagner in view of Yeany and Scorch Renders Obvious Claims 4 and 16-17

1. POSITA Would Modify Wagner to Add Loading Slot

Patent Owner ironically argues that Petitioner's proposed “modification of Wagner [to utilize a loading slot] actually results in a worse design than if Wagner was left as-is” even though adding a loading slot to Wagner provides the very same benefits of reducing the motions required to load/remove a string that Patent Owner alleged are provided by the '774 Patent's loading slot. PO Resp. at 16-17 (asserting “[t]he '774 Patent housing is also user friendly, enabling a minimal number of motions to install and/or remove the string loop,...); *see also* Ex. 1002 at ¶170

(POSITA would add loading slot “ to the Wagner device to increase the convenience of loading a string into the device without having to remove a portion of the housing.”). Indeed, this known benefit of a loading slot for a string shooter is expressly taught by the Scorch reference when it states that a loading slot allows one to “swap them [the strings] out really quick.” Ex.1007 at 3:30-3:53; Ex.1002 at ¶173.

Patent Owner overlooks that the search for a motivation is a “flexible one” where “the motivation to modify a reference can come from the knowledge of those skilled in the art, from the prior art reference itself, or from the nature of the problem to be solved.” *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1379 (Fed. Cir. 2023); *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349, 1356 (Fed. Cir. 2000). As one example noted in *KSR*, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR Int’l Co. v. Teleflex Inc*, 550 U.S. 398, 417 (2017). Patent Owner does not contest that implementing a loading slot to improve the Wagner string-shooter in the same way it improved the Scorch string-shooter is beyond the level of skill in the art nor would such an argument have any merit given the straight-forward mechanical components of the string shooter devices at issue. *Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc.*, 774 F.3d

968, 978 (Fed. Cir. 2014) (“One of ordinary skill knows how to combine familiar prior art elements to achieve the same functions.”).

Rather, Patent Owner and Dr. Janét argue that the proposed modification to add a loading slot to Wagner would result in certain drawbacks such as “a more complicated and overall less functional design.” PO Resp. at 21; Ex. 2002 at ¶191. It is not clear how Patent Owner arrives at these drawbacks since Dr. Janét agrees with Dr. Kudrowitz that Wagner’s disclosed method to remove and replace the cover to load a string is an “inconvenient process.” Ex. 2002 at ¶187 (Dr. Janét stating “I agree that removing Wagner’s cover and then reinstalling the cover after the loop of string has been replaced may be viewed as an inconvenient process,...”). As Dr. Kudrowitz explains, a loading slot would provide “easier and quicker” replacement of a string compared to requiring a user to overcome a friction fit to remove the cover and then lining up complementary structures on the cover and the cup to replace the cover. Ex. 1002 at ¶144.

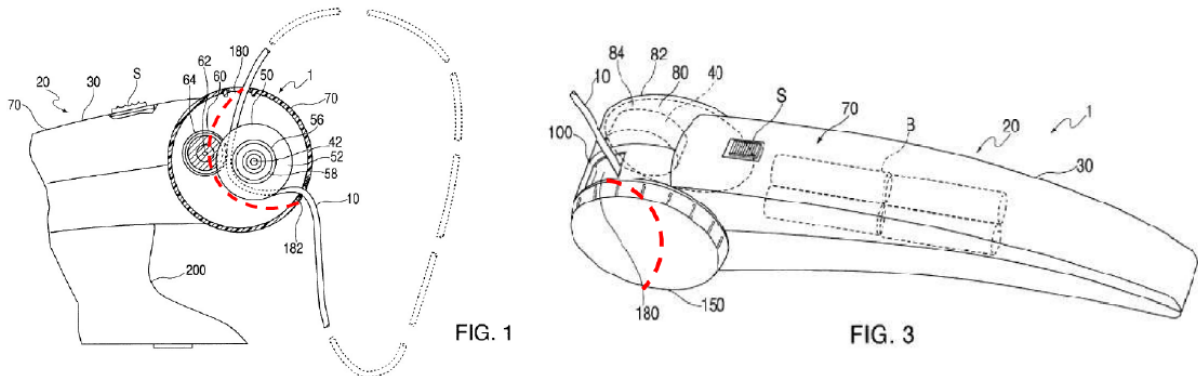
Nonetheless, even assuming the modification to add a loading slot resulted in some drawbacks there is no dispute that a loading slot would still provide benefits to convenience in loading the string as testified to by both experts and stated expressly in Scorch. Ex. 1002 at ¶144; Ex. 2002 at ¶187; Ex.1007 at 3:30-3:53. This benefit is enough to motivate a POSITA to pursue the modification of Wagner to add a loading slot even assuming other drawbacks existed. *Belden Inc. v. Berk-Tek LLC*,

805 F.3d 1064, 1075 (Fed. Cir. 2015) (motivation requires a POSITA to “recognize the potential benefits and pursue the variation.”); *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004) (obviousness does not require that the proposed combination “is the preferred, or most desirable, combination”); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (“a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine “).

Moreover, as Dr. Kudrowitz explained, a POSITA would use their knowledge to make the modifications of Wagner required to utilize a loading slot, including allowing the string to be loaded around the wheel flanges. Ex. 1002 at ¶174-176. Patent Owner and Dr. Janét on the other hand appear to contend that a POSITA could not modify Wagner to “allow[] the string to slide between top flange 54 and the top surface of wheel 60” because Wagner does not expressly disclose doing so with its existing loading method. PO Resp. at 20; Ex. 2002 at ¶188. However, a “person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR*, 550 U.S. 420-21. Patent Owner’s argument that a POSITA could not modify the spacing and positioning of Wagner’s mechanical components, such as the spacing between the flange and the wheel, to accommodate the loading of a string via a loading slot treats a POSITA as an automaton rather than a person of ordinary creativity.

2. Patent Owner Attacks a Modification of its Own Making Rather than Petitioner's Proposed Modification of Wagner

Patent Owner does not dispute that the proposed modification of Wagner to add a loading slot *as set out in the Petition* would teach all of the limitations of claim 4. As shown in the annotated figure below provided in the Petition, an exemplary location of the loading slot in the housing is represented by the dotted red line:



Petition at 86; Ex. 1002 at ¶175. As seen in the figures, the proposed combination teaches Claim 4’s recitation where “the housing covers, at least partially, the pair of wheels, and wherein the housing defines a loading slot through which the string is loaded or removed from between the pair of wheels.” Ex. 1001 at 12:38-41.

Instead, the Patent Owner argues against a completely different modification than what Petitioner proposed. Namely, Patent Owner argues against a modification that “place[s] Scorch’s slotted funnel tube on Wagner’s body.” PO Resp. at 21. Patent Owner’s proposed modification is irrelevant as it is not the argument relied on by Petitioner. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1366 (Fed. Cir.

2018) (“[Patent Owner’s] argument relies on the presumption that one of ordinary skill would blindly incorporate [secondary reference’s] exact methodology into [primary reference]. But the Board properly did not view [Petitioner’s] proposed combination to be so limited.”).

Moreover, Patent Owner’s proposal relies on a discredited approach that requires bodily incorporation of Scorch’s loading slot into Wagner’s device. *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.”); *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012).

In addition, Patent Owner also notes that an “extra piece” of wire cone is used in one embodiment of Scorch to help prevent the string from exiting the device. PO Resp. at 18. It is not clear what relevance Patent Owner places on this “extra piece” as it does not negate Scorch’s teaching of using loading slot, but in any event Scorch notes that this extra piece is merely optional. Ex.1007 at 4:00-4:30. Perhaps more importantly, Patent Owner cannot overcome obviousness of a combination “by attacking references individually.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019). As explained by Dr. Kudrowitz, the problem of inadvertent exiting of the string in the modified Wagner device is addressed by the flanges already in Wagner which form a channel with the wheels that would help keep the

string contained. Ex. 1001 at ¶176. Moreover, Dr. Kudrowitz notes that additional structures can be added to the intake aperture of Wagner's device if desired to provide "a similar function" as the wire cone disclosed in Scorch to further reduce string exits (rather than proposing bodily incorporation of Scorch's wire cone or extra piece). *Id.*

There can be no dispute that the argument for the combination actually proposed in the Petition of modifying Wagner to incorporate a loading slot in the housing that covers the wheels renders obvious claim 4.

III. CONCLUSION

Claims 1-4, 12 and 15-17 of the '774 patent are not patentable for the reasons provided in the Petition and further addressed in this Reply.

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CERTIFICATION OF WORD COUNT

Petitioner certifies that the word count in this Reply, including all footnotes, is 5,179 words as counted by the word-processing program (Microsoft Word for Office 365) used to generate this Reply, where such word count excludes the table of contents, mandatory notices, certificate of service, list of exhibits, and this certificate of word count. This Reply is in compliance with the 5,600 word limit set forth in 37 C.F.R. § 42.24(c)(1).

CERTIFICATE OF SERVICE UNDER 37 CFR § 42.6(e)(4)

The undersigned hereby certifies that a copy of the accompanying Petitioner's Reply to Patent Owner's Response and all accompanying exhibits, are being served via electronic mail on September 2, 2025 upon the following:

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