

**IN THE UNITED STATE DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

ZIPSTRING, LLC,

Plaintiff,

v.

Case No.: 1:24-cv-00136-TCB

**NxtGEN TOYS, LLC, LIVE
GLEAM LLC, and BENZION
SADIGURSKY,**

Defendants.

**OPENING CLAIM CONSTRUCTION BRIEF OF
PLAINTIFF ZIPSTRING, LLC.**

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Exhibit A	U.S. Patent No. 11,674,774
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I. INTRODUCTION

Plaintiff Zipstring, LLC asserts that Defendants NxtGen Toys, LLC, Live Gleam LLC, and Benzion Sadigursky infringe claims of Zipstring’s U.S. Patent Nos. 11,674,774 (“the ‘774 Patent”), 11,879,703 (“the ‘703 Patent”) and 11,918,927 (“the ‘927 Patent”)¹, directed to string shooting devices. The claim language describing these string shooting devices is readily understandable and, under Federal Circuit precedent, needs no special construction.

Defendants, by contrast, seek to rewrite the claims by advocating claim constructions that are contrary to the teachings in the specification and contrary to well established precedent. Defendants additionally seek to invalidate certain claim terms that, when measured from the viewpoint of a person skilled in the art at the time the patent was filed, are sufficiently definite and meet the requirements of 35 U.S.C. § 112.

Plaintiff respectfully requests that the Court adopt Plaintiff’s proposed construction of the terms at issue because Plaintiff’s proposed constructions are supported by the intrinsic evidence, including the specifications of the ‘774, ‘703

¹ U.S. Patent Nos. 11,674,774; 11,879,703 and 11,918,927 are attached as Exhibits A, B and C for the Court’s convenience.

and ‘927 Patents, and are consistent with the plain and ordinary meaning of the terms. Defendants’ proposed constructions should not be adopted because they are not supported by the intrinsic evidence and improperly attempt to import claim restrictions without the patentee’s unambiguous disclaimer. Additionally, the Court should reject defendants’ arguments that any of the claim terms are indefinite under 35 U.S.C. § 112.

II. TECHNOLOGY OVERVIEW

Zipstring, LLC. asserts the ‘774 Patent, ‘703 Patent and the ‘927 Patent, which are all directed to novel toy that is a string shooting device having a string capable of generating lift when propelled from the string shooting device and a guide to readily attach and the detach the string from the string shooting device. In some embodiments, the string shooting device has a light source and a string with phosphorescent fibers for glow in the dark operation of the toy.

III. APPLICABLE LAW

The purpose of claim construction is to determine the plain, ordinary, and customary meaning of claim terms to a person of ordinary skill in the art (“POSITA”) at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*). “Properly viewed, the ‘ordinary meaning’ of a claim term is its meaning to the ordinary artisan *after reading the entire patent.*” *Phillips*, 415 F.3d at 1321 (emphasis added).

The intrinsic evidence is the most significant and best evidence to determine the legally operative meaning of claim language. *Id* at 1317. In addition to the claims and specification, the intrinsic evidence includes the prosecution history. *Id*.

Where claim language “is comprised of commonly used terms” and “has no special meaning in the art,” “the plain and ordinary meaning of the disputed claim language is clear” and need not be construed. *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015). There are “only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution.” *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014). Neither is true here.

The patent “specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). The specification is “the single best guide to the meaning of a disputed term and . . . acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.” *Phillips*, 415 F.3d at 1321 (internal quotation marks omitted).

Courts have repeatedly held that the specification is an important guide to interpreting the claims. *See Phillips*, 415 F.3d at 1315. However, the Federal Circuit has repeatedly warned courts “not to import” limitations from the specification into the claims. *See, e.g., Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 906 (Fed. Cir. 2005). Thus, “it is improper to read limitations from a preferred embodiment described in the specification even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004). In addition, it is important to note that “[a]n interpretation which ‘excludes a [disclosed] embodiment from the scope of the claim is rarely, if ever correct.’” *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (citation omitted).

Finally, courts may consider “extrinsic evidence,” which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Philips*, 415 F.3d at 1317. However, extrinsic evidence is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Id.* (quotations omitted). Because it is “less reliable” than the intrinsic evidence, it “may not be used to vary, contradict, expand, or limit the claim language” from how it is used in the patent. *SkinMedica, Inc. v. Histogen, Inc.*, 727 F.3d 1187, 1195, 1210 (Fed. Cir. 2013).

Pursuant to 35 U.S.C. § 112 ¶ 2, a patent specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112 ¶ 2. A claim is only invalid for indefiniteness if, when read in light of the specification and prosecution history, it “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). “Reasonable certainty” does not require “absolute or mathematical precision.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1381 (Fed. Cir. 2015)(internal quotation marks omitted); *see also Guangdong Alison Hi-Tech Co. v. Int’l Trade Comm’n*, 936 F.3d 1353, 1359 (Fed Cir. 2019) (“[W]e have explained that ‘a patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement.’”) (quoting *Sonix Tech Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017)).

A claim is not indefinite because there is “[s]ome modicum of uncertainty” as to its bounds-such uncertainty is tolerated as “the price of ensuring the appropriate incentives for innovation. *Nautilus*, 134 S. Ct. at 2128 (citation omitted). Moreover, it is critical to “bear in mind..... that patents are not addressed to lawyers, or even to the public generally, but rather to those skilled in the relevant art.” *Id.* (citations omitted). Therefore, a claim is only required to “provide objective boundaries for those of skill in the art,” and a claim term is only indefinite if it “might mean several

different things and no informed and confident choice is among the contending definitions.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). This determination is measured from the viewpoint of a person skilled in the art at the time the patent was filed. *Nautilus*, 134 S. Ct. at 2128.

Patentees are permitted to and “often use ‘descriptive words to ‘avoid a strict numerical boundary to the specified parameter.’” *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1347 (Fed. Cir. 2017) (quoting *Braintree Lab ’ys, Inc. v. Novel Lab ’ys, Inc.*, 749 F.3d 1349, 1360 (Fed. Cir. 2014)). While “true, descriptive words (or terms of degree) in a claim may inherently result in broader claim scope than a claim defined with mathematical precision [] a claim is not indefinite just because it is broad.” *Id.* (citing *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017) (reiterating, after *Nautilus*, that “breadth is not indefiniteness”)). Furthermore, the legal test for definiteness “does not require that a potential infringer be able to determine *ex ante* if a particular act infringes the claims.” *Niazi Licensing Corp.* 30 F.4th at 1346 (quoting *Nevro Corp. v. Bos. Sci. Corp.*, 955 F.3d 35, 40 (Fed. Cir. 2020)).

Patents are presumed to be valid, therefore the accused infringer bears the burden to prove that a claim term is indefinite by clear and convincing evidence. *See Microsoft Corp. v. i4i Ltd.P’ship*, 564 U.S. 91, 95 (2011). Indefiniteness is a question

of law, subject to a determination of underlying facts. *Akzo Nobel Coatings, Inc. v. Dow Chemical Co.*, 811 F.3d 1334, 1343-44 (Fed. Cir. 2016).

IV. PERSON OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”)² relevant to the patents in suit would have had at least a B.S. degree in Mechanical Engineering, Electrical Engineering, Aerospace Engineering, Industrial Design, Product Design, or similar field, with at least two years industry experience in one of these fields, and such POSITA would have been familiar with general principles of mechanics, fluid mechanics and aerodynamics.

V. CLAIM TERMS FOR CONSTRUCTION

VI. AGREED CONSTRUCTIONS

Term	Agreed Constructions
“surface texture [of string] to increase air friction” ‘774 patent, claims 1,12,16	a surface texture designed to increase air friction
“turbulent air boundary layer” ‘774 patent, claim 2, 17	plain and ordinary meaning: turbulent is defined as “air moves in a random, irregular fashion”
“project illumination” ‘927 patent, claim 1	to throw or cause light to fall upon a surface or into space
“within the body” ‘927 patent claim 3	plain and ordinary meaning: within is defined as “inside” [the body]

² A POSITA is a hypothetical person whose experience depends on many factors. *See Best Med. Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022); *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984) (a POSITA is “an imaginary being possessing ‘ordinary skill in the art’ created by Congress to provide a standard of patentability” (emphasis omitted)).

“generates lift” ‘774 patent, claim 3	plain and ordinary meaning: lift is defined as upward force caused by the movement of air
“housing” ‘774 patent, claims 1, 4, 5, 8, 10, 12, 13, 14, 15, 16, 18, 20 ‘703 patent, claims 1, 7, 12, 13, 14, 15, 16, 17, 19	structure that covers, at least partially, the pair of wheels
“axially aligned” ‘774 patent, claims 5, 18 ‘703 patent, claims 3, 4, 13, 17	plain and ordinary meaning: arranged in a specified way along an axis
“aperture” ‘774 patent, claims 5, 7, 15, 18, 19	plain and ordinary meaning: an opening such as a hole, slit, crack, gap, etc.
“within the housing” ‘927 patent, claims 1, 4, 5	<i>See above re “housing”; plain and ordinary meaning for within: within is defined as “inside” so the definition of within the housing is “inside the structure that covers, at least partially, the pair of wheels”</i>
“portion” ‘703 patent, claims 1, 6, 9, 10, 14	plain and ordinary meaning: a part of any whole

VII. DISPUTED CONSTRUCTIONS

A. “loading slot”

Term	Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
“loading slot” ‘774 patent, claims 4, 16 ‘703 patent, claims 1, 12	slot through which the string is loaded or removed from between the pair of wheels	slot that facilitates loading of the looped string through the string loading slot to a position between a first wheel and a second wheel

The word “loading slot” as used in the claims and specification is readily understandable to a person of ordinary skill in the art. A POSITA would construe the

term “loading slot” as a “slot through which the string is loaded or removed from between the pair of wheels”. *See* Declaration of Dr. Jason A. Janét, filed concurrently herewith (Exhibit D). ¶¶ 34-37.

The “loading slot” is defined in the specification and claims of the ‘774 and ‘703 Patents. For example, “[a]ccording to certain embodiments, the housing covers, at least partially, the pair of wheels, and the housing **define** a *loading slot through which the string is loaded or removed from between the pair of wheels.*” (‘774 Patent Col. 1 ll. 63-66 and ‘703 Patent Col. 2 ll. 1-4) (emphasis added) .

Defendants’ proposed construction for “loading slot” is incorrect and should not be adopted for the reasons discussed *infra*. Defendants’ proposed construction for “loading slot” does not include reference to both loading and removal of the string loop as clearly defined in the specifications as cited above. In addition, Defendants’ proposed construction includes that the loading slot “facilitates loading of the looped string through the string loading slot,” thereby circuitously defining the term loading slot to including the words loading slot. Black-letter law states that “[i]t is improper for a court to add ‘extraneous’ limitations to a claim, that is, limitations added ‘wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim.’” *See Hogan AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950 (Fed. Cir. 1993) (internal quotation marks omitted). A POSITA would also recognize that the Defendants’ proposed construction of loading the

string to a position between a first wheel and a second wheel would certainly be included within the scope of a pair of wheels mentioned throughout the ‘774 and ‘703 Patents (Exhibit D, ¶ 38).

B. “guide slot and guiding slot”

Term	Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
“guide slot” ‘774 patent, claim 13	slot extending around a portion of the circumference of at least one of the pair of wheels	a slot different from the loading slot that moves the string to the operation position between a drive wheel and a guide wheel
“guiding slot” ‘703 patent, claims 12, 17		

The ‘774 Patent clearly defines a “guide slot” in the specification, “where the guide slot extends around a portion of a circumference of one of the pair of wheels” (‘774 Patent col. 2 ll. 5-10).

The ‘703 Patent clearly defines a “guiding slot” in the specification, specifically, “where the guiding slot extends around a portion of a circumference of at least one of the pair of wheels” (‘703 Patent col. 2 ll. 59-62).

Defendants seek to rewrite this straightforward claim language to introduce a slot that is “different” from the loading slot that moves the string to the “operation position” between a drive wheel and a guide wheel. The limitations of “different” and “operation position” do not have any support in the specification.

Dr. Janét notes in his declaration that a POSITA would notice that the loading slot and guide/guiding slot share a common housing and space. Defendants also seek to eliminate the “around a portion of the circumference,” which a POSITA would understand could negate the stated purpose of the guide/guiding slot. (See Exhibit D, ¶ 41).

Defendants’ proposed construction is directly contrary to this claim language and should be rejected. *See Baxalta Inc. v. Genentech, Inc.*, 972 F.3d 1341, 1349 (Fed. Cir. 2020) (“the district court erred in selecting the narrower construction, which is inconsistent with . . . the plain language of the claim.”). Black-letter law states that “[i]t is improper for a court to add ‘extraneous’ limitations to a claim, that is, limitations added ‘wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim.’” *See Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950 (Fed. Cir. 1993) (internal quotation marks omitted). There is no need to add the limitations “different” and “operation position” for a POSITA to understand what element the guide slot is because it is clearly defined in the specification as “a slot extending around a portion of the circumference of at least one of the pair of wheels.”

Accordingly, the proper construction of the “guide slot” and “guiding slot” as defined in the specification is “a slot extending around a portion of the circumference of at least one of the pair of wheels,” as proposed by Plaintiff.

C. “loading tab”

Term	Plaintiff’s Proposed Constructions	Defendants’ Proposed Constructions
“loading tab” ‘774 patent, claims 14, 19	a structure which guides the string from the loading slot to the intake aperture	a tab extending from the loading slot that leads the string into the intake aperture

The asserted claims refer to embodiments where the loading slot is defined at one edge by a loading tab, where the loading tab includes a tip that is thinner than a body of the loading tab, where the loading tab functions to guide the string from the loading slot to the intake aperture. (*See* ‘774 Patent col 2 ll 1-5, 50-55). The word “loading tab” as used in the claims and specification would be readily understandable to a POSITA.

In contrast to the Defendants’ position, a POSITA would not construe the term “loading tab” as “a tab extending from the loading slot that leads the string into the intake aperture”. Fig. 6, for example, discloses that the loading slot is an open space that is formed between the different parts of the housing. A POSITA would identify that the loading tab 102 cannot extend from the space, i.e. loading slot but instead extends along a portion of the housing 100, as is clearly shown in the figures. Defendants appear to read in the limitation that the loading tab must be structured in such a way that it extends from the loading slot to guide the string from the loading slot to the intake aperture. However, none of the portions of the specification cited

by Defendants to support this incorrect construction include the requirement that the loading tab extends from the loading slot. (*See* Exhibit D, ¶ 46).

Accordingly, the proper construction of the “loading tab” as defined in the specification is “a structure which guides the string from the loading slot to the intake aperture.”

VII. INDEFINITENESS UNDER 35 U.S.C. § 112

D. “about at least a portion”

Term	Plaintiff’s Proposed Constructions	Defendants’ Proposed Constructions
“about at least a portion” ‘703 patent, claims 3, 17	<i>See</i> above re “portion”; plain and ordinary meaning: a part of any whole; The claim terms meets the requirements of 35 U.S.C. § 112 and therefore is definite. There is adequate disclosure in the specification that one of ordinary skill in the art would understand the meaning of the term.	Indefinite The claim term is indefinite under the requirements of 35 U.S.C. § 112.

The claim term “about at least a portion” is found in claims 3 and 17 of the ‘703 Patent. Under Plaintiff’s proposed construction, this term is sufficiently definite as detailed by Dr. Janét. A POSITA would construe the term “about at least a portion”

by its plain and ordinary meaning as “some part of any whole.” (See Exhibit D, ¶¶ 48-50).

Notably, the Parties have already agreed that the definition for “portion” is “a part of any whole.” [Jt Claim Construction Statement, pg 2.] Additionally, support for this construction is found in the ‘703 Patent, including use of the term in claims 1, 6, 9, 10 and 14. A POSITA would understand that estimative terms (“about”, “at least”) do not diminish the POSITA’s understanding of this phrase. In aggregate, terms used within “about at least a portion” mean some portion of a whole. A POSITA would know that “about” means “approximately” or “roughly near a particular quantity,” which in basic English language is an approximation of the amount within the whole. “At least” is synonymous with no less than, which, when used in conjunction with “a portion,” indicates that, at a minimum, some part of the whole. *Id.* ¶¶ 49-50.

A claim is only required to “provide objective boundaries for those of skill in the art,” and a claim term is only indefinite if it “might mean several different things and no informed and confident choice is among the contending definitions.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). Clearly a POSITA would readily understand the term “about at least a portion” in the context described throughout the specification. Defendants’ will not be able to meet their burden that this claim term is indefinite.

E. “configured to illuminate a location on a path of travel of a string”

Term	Plaintiff’s Proposed Constructions	Defendants’ Proposed Constructions
“configured to illuminate a location on a path of travel of a string” ‘927 patent, claim 13	designed to light a portion of a path along which the string travels The claim terms meets the requirements of 35 U.S.C. § 112 and therefore is definite. There is adequate disclosure in the specification that one of ordinary skill in the art would understand the meaning of the term.	Indefinite The claim term is indefinite under the requirements of 35 U.S.C. § 112.

The claim term “configured to illuminate a location on a path of travel of a string” is found in claim 13 of the ‘927 Patent. Under Plaintiff’s proposed construction this claim term is sufficiently definite.

A POSITA would construe the term “configured to illuminate a location on a path of travel of a string” as “designed to light a portion of a path along which the string travels.” Support for this construction is found in the ‘927 Patent, including “[a]ccording to certain embodiments, the light switch includes a photo sensor where the photo sensor causes the light source to illuminate in response to a level of light sensed at the photo sensor being below a predetermined value.” (‘927 Patent col 2

ll.31-34.) Additionally, “[e]mbodiments provided herein include a string shooting device including: a body; a housing attached to the body; a pair of wheels disposed at least partially within the housing, where at least one of the pair of wheels is a driven wheel; a light source; and a light guide, where the light guide is configured to guide light from the light source to a location on a path of travel of a string propelled by the string shooting device. The string shooting device further includes, in some embodiments, a string where the string includes at least one of phosphorescent particles or phosphorescent fibers and where the string is propelled along the path of travel.” (‘927 patent col 2 ll. 5-45) (*See* Exhibit D, ¶¶ 52-53).

In contrast to the Defendants’ position, a POSITA would not construe the term “configured to illuminate a location on a path of travel of a string” as indefinite. Not only is there adequate disclosure in the specification, as stated above, the phrase is sufficiently clear on its own, using its plain and ordinary meaning. (*See* Exhibit D, ¶ 54).

A claim is only required to “provide objective boundaries for those of skill in the art,” and a claim term is only indefinite if it “might mean several different things and no informed and confident choice is among the contending definitions.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). Clearly, a POSITA would readily understand within the context of the claim that “the contact surfaces” refer to the surfaces of the outer box and inner back that make contact when the child

resistant storage container is in use. Defendants will not be able to meet their burden that this claim term is indefinite.

IX. CONCLUSION

For the foregoing reasons, Zipstring, LLC respectfully requests that the Court reject Defendants' proposed claim constructions and construe the disputed claim terms in accordance with their plain and ordinary meaning, as proposed by Plaintiff. Additionally, Plaintiff respectfully requests that the Court reject the Defendants' proposal that any of the claim terms are indefinite.

Dated: January 6, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that, on January 6, 2025, the foregoing document filed through the CM/ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing.

/s/Kenneth W. Cohen
Kenneth W. Cohen

EXHIBIT D

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

ZIPSTRING, LLC,
PLAINTIFF,

v.

NXTGEN TOYS, LLC,
LIVE GLEAM LLC, and
BENZION SADIGURSKY,
DEFENDANTS,

Case No.: 1:24-cv-00136-TCB

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XI. Declaration 30

I. Introduction

1. I have been retained by ZipString, LLC (“Plaintiff” or “ZipString”) through their counsel Epstein Drangel, LLP as an independent expert witness in the above-captioned matter, regarding the construction of claim terms, phrases or clauses from U.S. Patent Nos. 11,674,774 (“the ‘774 Patent”), 11,879,703 (“the ‘703 Patent”) and 11, 918,927 (“the ‘927 Patent”), (together, “the ZipString Patents”). The named defendants are NXTGEN TOYS, LLC, LIVE GLEAM LLC, and BENZION SADIGURSKY (“Defendants”). Plaintiff and Defendants are collectively referred to herein as “Parties”.

2. I am being compensated at my usual and customary rate. My compensation does not influence my opinion, nor does the outcome of associated proceedings impact my compensation.

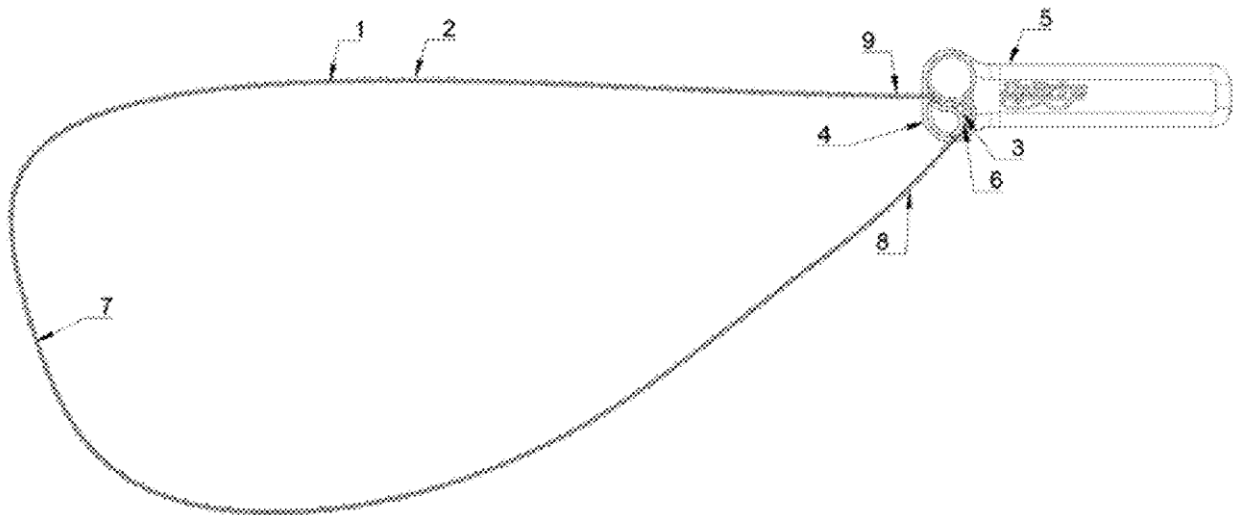
3. I have reviewed the documents referenced in this declaration. I understand they have been submitted as exhibits in conjunction with the parties litigation.

II. The ZipString Patents

4. The ZipString Patents relate “generally to a string shooting device, and more particularly, to a string shooting device having a string capable of generating lift when propelled from the string shooting device and a guide to readily attach and detach the string from the string shooting device.” [’774 1:14-19; ’703 1:19-23] The

shooting device may have “a glow-in-the-dark string charged from an embedded light source, capable of emitting light and generating lift when propelled from the string shooting device and a guide to readily attach and detach the string from the string shooting device.” [‘927 1:14-20]

5. The following figure, common to the ZipString Patents, is shown below.



III. Summary of Opinions

6. Based on my knowledge, experience, and the materials that I have reviewed, it is my opinion that a POSITA would understand the meaning of the disputed claim terms. It is also my opinion that the terms of the ZipString Patents are neither indefinite, nor consistent with the Defendant’s disputed claim constructions, discussed in the *JOINT CLAIM CONSTRUCTION STATEMENT*.

A. Construction of Claim Terms, Phrases or Clauses on Which the Parties Agree

7. The following table provides the claim terms on which the parties agree:

No	Claim Term/Phrase	Agreed Construction
1	<i>“surface texture [of string] to increase air friction”</i> ‘774 patent, claims 1, 12, 16	a surface texture designed to increase air friction
2	<i>“turbulent air boundary layer”</i> ‘774 patent, claims 2, 17	plain and ordinary meaning: turbulent is defined as “air moves in a random, irregular fashion”
3	<i>“project illumination”</i> ‘927 patent, claim 1	to throw or cause light to fall upon a surface or into space
4	<i>“within the body”</i> ‘927 patent, claim 3	plain and ordinary meaning: within is defined as “inside” [the body]
5	<i>“generates lift”</i> ‘774 patent, claim 3	plain and ordinary meaning: lift is defined as upward force caused by the movement of air
6	<i>“housing”</i> ‘774 patent, claims 1, 4, 5, 8, 10, 12, 13, 14, 15, 16, 18, 20 ‘703 patent, claims 1, 7, 12, 13, 14, 15, 16, 17, 19	structure that covers, at least partially, the pair of wheels
7	<i>“axially aligned”</i> ‘774 patent, claims 5, 18 ‘703 patent, claims 3, 4, 13, 17	plain and ordinary meaning: arranged in a specified way along an axis
8	<i>“aperture”</i> ‘774 patent, claims 5, 7, 15, 18, 19	plain and ordinary meaning: an opening such as a hole, slit, crack, gap, etc.
9	<i>“within the housing”</i> ‘927 patent, claims 1, 4, 5	See 6 above re “housing”; plain and ordinary meaning for within: within is defined as “inside” [the housing]
10	<i>“portion”</i> ‘703 patent, claims 1, 6, 9, 10, 14	plain and ordinary meaning: a part of any whole

B. Construction of Claim Terms, Phrases or Clauses on Which the Parties Disagree

8. The following table provides the claim terms on which the parties disagree:

No	Claim Term/Phrase	Plaintiff Construction	Defendants Construction
1	<i>“loading slot”</i> ‘774 patent, claims 4, 16 ‘703 patent, claims 1, 12	slot through which the string is loaded or removed from between the pair of wheels ‘774 Patent Col. 1 ll. 63-66 Col. 8 ll. 48-57 Col. 9 ll. 7-10, 60-64 ‘703 Patent Col. 2 ll. 1-5 Col. 8 ll. 59-61 Col. 9 ll. 10-15	slot that facilitates loading of the looped string through the string loading slot to a position between a first wheel and a second wheel ‘774 patent Col. 8, ln. 47-61 Col. 9, ln. 7-16 Col. 11, ln. 20-28 ‘703 patent Col. 8, ln. 51-65 Col. 9, ln. 11-20 Col. 11, ln. 24-32 Prosecution History, App. No. 18/354,014, Nov. 20, 2023, OA Resp. at 6-7.
2	<i>“guide slot”</i> ‘774 patent, claim 13 <i>“guiding slot”</i> ‘703 patent, claims 12, 17	slot extending around a portion of the circumference of at least one of the pair of wheels ‘774 Patent Col. 2 ll. 5-10 ‘703 Patent Col. 2 ll. 59-62	a slot different from the loading slot that moves the string to the operation position between a drive wheel and a guide wheel ‘774 patent Col. 9, ln. 17-36 Col. 9, ln. 37-57 FIGS. 7-14 ‘703 patent Col. 9, ln. 21-40 Col. 9, ln. 41-61. FIGS. 7-14

No	Claim Term/Phrase	Plaintiff Construction	Defendants Construction
			Prosecution History, App. No. 18/354,014, Nov. 20, 2023, OA Resp. at 10-12.
3	<i>“loading tab”</i> ‘774 patent, claims 14, 19	a structure which guides the string from the loading slot to the intake aperture ‘774 Patent Col. 2 ll. 1-5, 50-55	a tab extending from the loading slot that leads the string into the intake aperture ‘774 patent Col. 8, ln. 66 – Col. 9, ln. 6 Col. 10, ln. 30-36 Col. 10, ln. 57-62 ‘703 patent Col. 9, ln. 3-10 Col. 10, ln. 34-40 Col. 10, ln. 60-65
4	<i>“about at least a portion”</i> ‘703 patent, claim 3, 17	See 10 above re “portion”; plain and ordinary meaning: a part of any whole; The claim term meets the requirements of 35 U.S.C. § 112 and therefore is definite. There is adequate disclosure in the specification such that one of ordinary skill in the art would understand the meaning of the term.	Indefinite The claim term is indefinite under the requirements of 35 U.S.C. § 112.
5	<i>“configured to illuminate a location on a path of travel of a string”</i> ‘927 patent, claim 13	designed to light a portion of a path along which the string travels Col. 2 ll. 35-45; The claim term meets the requirements of 35 U.S.C. § 112 and therefore is definite. There is adequate disclosure in the specification such that one of ordinary skill in the art would understand the meaning of the term.	Indefinite The claim term is indefinite under the requirements of 35 U.S.C. § 112

IV. Qualifications and Compensation

9. I have a Ph.D. in Electrical & Computer Engineering from North Carolina State University (or “NCSU”), which I earned in 1998. Prior to that I received a M.S. in Integrated Manufacturing Systems Engineering from North Carolina State University in 1994 and a B.S. in Mechanical Engineering from the University of Virginia in 1990.

10. Since 1991, I have been active in the robotics, sensors, artificial intelligence, pattern analysis, computer vision, image/video processing, and automation fields. I have authored numerous publications and have co-authored a textbook entitled Computational Intelligence. My PhD dissertation is entitled Pattern Analysis, Tracking and Control for Autonomous Vehicles Using Neural Networks.

11. I have designed, built, and marketed robots, automated systems, and components thereof, including ground mobile robots, unmanned aerial vehicles (UAV), unattended sensors automated storage and retrieval systems (ASRS), submersible mobile robots, proof-of-concept extra-terrestrial robots, toys, wall climbing mobile robots, and augmented reality systems.

12. I have taught the following courses: Introduction to Robotics and Automation (Duke and NCSU); Introduction to Control Theory (Duke and NCSU); Distributed Real-Time Controls (NCSU); and myriad independent studies courses in the areas of robotics, automation, artificial intelligence, autonomy, pattern

analysis, and control systems. I have also served on several MS- and PhD-level graduate student committees, designed qualifying exam problems, served on the NCSU IMSEI Board, and participated in curriculum development for undergraduate and graduate level programs.

13. I have initiated multiple unmanned aerial vehicle (UAV) projects at both academic and industry levels. Academic UAVs include, but are not limited to, Quadcopters with Hybrid Remote and Autonomous Control, Marsupial UAVs that Deploy and Recover Unmanned Ground Vehicles, and Wall-Climbing UAVs. Additionally, the AngelFish Cross-Domain Submersible UAV, a DARPA ASW program that I incubated and procured funding for at Teledyne, included a partnership with North Carolina State University.

14. In 1999, while I was employed by Nekton Research (“Nekton”), I captured and managed multiple programs sponsored by the Department of Defense (DoD) and private-sector companies that focused primarily on autonomous underwater vehicles (AUV), remotely operated vehicles (ROV), TwiddleFish toys, and indirect-fire projectiles. During my tenure, Nekton entered into a joint venture agreement with the founders of what eventually became known as Parata Systems – a pharmacy automation solutions company, which I supported launching.

15. After leaving Nekton in March 2002, I joined a then New Jersey-based company called Avionic Instruments, Inc. (“Avionic”). While at Avionic, I

continued developing and marketing robots and supported engineering related to various design, manufacturing, quality and assembly issues on the core aerospace product lines.

16. In late 2004, soon after Avionic was sold, I, along with others from Avionic, secured funding to develop an alpha-level multi-dispenser robotic system. In late 2006, RxMedic (called “APDS” until November 2006) was launched as a stand-alone, dedicated venture. After the operational launch of RxMedic, I served as General Manager and eventually Chief Technical Officer. Through my roles at RxMedic, I oversaw the development of the RxMedic ADS robot, managed the intellectual property portfolio, coordinated sales and marketing, and provided strategic, fiscal, and operational leadership. In May 2010, J.M Smith Corporation acquired RxMedic, and in an effort to assist in the change of ownership, I served as a director of RxMedic until May 2011.

17. Also in late 2004, after Avionic was sold, I, along with others from Avionic, secured funding for Vortex HC through DoD contracts and robot sales, to continue developing the VRAM Mobile Robot Platform (VMRP – a wall-climbing robot), the ARTEMIS AUV (a holonomic submersible robot for counter-mine and counter-obstacle operations), the submersible crawler, the nuclear-grade boiler water reactor (BWR) inspection robot, and other robot products centered around the VRAM including toy systems for Marvel, Mattel, IDEO and others.

18. I have continued to support Vortex HC licensees and customers to date. After the sale of RxMedic, and after fulfilling my 12-month employment obligation, I joined Teledyne Technologies in summer 2011. I served as the Senior Manager for the RTP division of Teledyne Scientific, and supported multiple DoD sponsored robotic-focused programs.

19. In late 2013, Avionic, a TransDigm business unit at that point, requested that I return to turn around a supply-chain issue, and assume management of its Sikorsky S97 Raider helicopter program. The S97 Raider is purported to be the fastest, most maneuverable helicopter, due to its coaxial, counter-rotating variable pitch wings, and an aft-based push-propeller.

20. As CEO of Delta Five, I led a private-equity backed, hospitality-focused venture, coordinating the company's launch and strategic path including an early-stage pivot. Initially focused on back-end robotics and automation, Delta Five shifted to address the rampant bed bug problem—a top priority for hoteliers—with a novel unattended sensor and trap, called the Telemetered Pest Monitoring System. After leading Delta Five and serving on its Board for four years, I resigned to join ARA but continue supporting Delta Five as a stakeholder.

21. In 2018, I joined ARA as sector CTO. In this role, my primary responsibilities included leading the commercialization and technology transition efforts, which require technical, business and corporate development, as well as the

raising of capital and managing matrixed rosters. I assumed my other current role at ARA, Corporate Director of IP and Product Commercialization, in 2020. In this role, I evaluate, quantify, present, and recommend portfolios of IP, product lines, and ventures on the basis of competitive landscapes, addressable markets, sales strategy, resource availability and technology readiness. I also spearhead investments and provide general venture oversight. I have active security clearances including Top Secret (for the Department of Defense) and Sensitive Compartmented Information (for the Intelligence Community).

22. Further details regarding my education and work experience are contained in my CV.

23. I am being compensated at my standard rate of \$500/hour. My compensation is in no way contingent upon my opinions or the outcome of the proceeding.

V. Relevant Legal Standards

24. I am not an attorney, and therefore my understanding of patent law and the legal standards set forth in this report is based on explanations provided to me by counsel.

A. Claim Construction

25. It is my understanding that the numbered paragraphs at the end of the disclosure of a U.S. Patent are the patent “claims” that define the metes and bounds of the invention.

26. I am informed that courts begin claim construction with the language of the claims themselves and that the claims must be read in view of the specification, of which they are a part. I understand that a person of ordinary skill in the art (“POSITA”) should first look to the words of the claims themselves and understand that the scope of claims must be determined by giving the claims their ordinary and customary meaning in light of the specification. I understand that although the specification is the best guide to the meaning of a disputed term, and that the specification is often dispositive, a POSITA should be careful not to limit the claims to the specific embodiments in the specification. I also understand that intrinsic evidence also includes the prosecution history, i.e. the correspondence between the applicant and the United States Patent Office (“USPTO”), which may be used to limit claim terms, and that courts may also look to extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art at the time of the invention including, for example, expert and inventor testimony, dictionaries and learned treatises. However, it is also my understanding

that extrinsic evidence is less significant than the intrinsic record in determining the meaning of the claim language.

27. I understand that patent claims generally include a “transitional” term or phrase, such as “consisting” or “comprising,” which may connect the preamble of the claim to the body of the claim. I have been informed that if a claim uses the term “consisting” as a transition term, that means that the claim is a “closed” claim, which means that the claim is limited to the claim features that follow the transition term and nothing else. On the other hand, I understand that the transition term “comprising” denotes an “open” claim, which means that the claim is not limited to only the features recited in the claim and could encompass the listed elements as well as other unrecited elements.

28. I understand that 35 U.S.C. § 112(f) created an exception to the general rule of claim construction called a “means plus function” limitation. These types of terms and limitations should be interpreted to cover only the corresponding structure described in the specification, and equivalents thereof. I also understand that a limitation is presumed to be a means plus function limitation if: (a) the claim limitation uses the phrase “means for”; (b) the “means for” is modified by functional language; and (c) the phrase “means for” is not modified by sufficient structure for achieving the specified function.

29. I understand that a structure is considered structurally equivalent to the corresponding structure identified in the specification only if the differences between them are insubstantial. For instance, if the structure performs the same function in substantially the same way to achieve substantially the same result. I further understand that a structural equivalent must have been available at the time of the issuance of the claim.

B. Person of Ordinary Skill in the Art

30. I have been asked to review the ZipString Patents from the perspective of a person of ordinary skill in the art (“POSITA”) as of the earliest claimed priority date for the patents.

31. It is my opinion that a POSITA relevant to the ZipString Patents would have had at least a B.S. degree in Mechanical Engineering, Electrical Engineering, Aerospace Engineering, Industrial Design, Product Design, or similar field, with at least two years of industry experience in one of these fields, and such POSITA would be familiar with general principles of mechanics, fluid mechanics and aerodynamics.

32. Based on my education, training and experience, it is my opinion that I can accurately represent the views of a POSITA as of the earliest claimed priority date for the ZipString Patents. The opinions I provide in this declaration are provided using the viewpoint of the POSA as of that date. I note, however, that if the patents are accorded a later priority date, my opinion would not change.

VI. Disputed Claim Term: “*loading slot*”

33. The claim term “loading slot” is found in claims 4 and 16 of the ‘774 Patent, and in claims 1 and 12 of the ‘703 Patent. These and the claims from which they depend are reproduced below:

A. Relevant ZipString Patents

1. The ‘774 Patent

a. Claim 1

A string shooting device comprising:

a body;

a housing attached to the body;

a pair of wheels, wherein at least one of the pair of wheels is a driven wheel; and

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.

b. Claim 4

The string shooting device of claim 1, 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 or removed from between the pair of wheels.

c. Claim 16

A string shooting device comprising:

a body;

a housing attached to the body and defining a loading slot;

a pair of wheels, wherein at least one of the pair of wheels is a driven wheel, wherein the **loading slot** is disposed at least partially over at least one of the pair of wheels; and
a looped string, wherein the looped string comprises a surface texture configured to increase air friction in response to the looped string being propelled through air by the pair of wheels.

2. The '703 Patent

a. Claim 1

A device for propelling a looped string comprising:
a first wheel rotatable about a first axis having a first wheel side orthogonal to the first axis;
a second wheel rotatable about a second axis a second wheel side orthogonal to the second axis, wherein the first wheel side and the second wheel side face a same direction; and
a housing substantially covering the first wheel and the second wheel, the housing comprising:
a first wheel cover portion and a second wheel cover portion defining a string **loading slot** therebetween, wherein the string **loading slot** facilitates loading of the looped string through the string **loading slot** to a position between the first wheel and the second wheel, wherein the first wheel cover portion extending over a portion of the first wheel side, and wherein the second wheel cover portion extends over at least a portion of the first wheel side and at least a portion of the second wheel side.

b. Claim 12

A housing for a string shooting device comprising:
a first wheel cover portion;
a second wheel cover portion;
a string loading slot defined between the first wheel cover portion and the second wheel cover portion, wherein

the first wheel cover portion and the second wheel cover portion are separated by the string loading slot; and
 a guiding slot defined within the housing transverse to the string loading slot and extending from the first wheel cover portion to an intake aperture in the second wheel cover portion.

B. Correct Construction of “loading slot”

34. A POSITA would construe the term “loading slot” as a “slot through which the string is loaded or removed from between the pair of wheels”. Among other reasons, a POSITA would understand this from the written descriptions of the ‘774 Patent and ‘703 Patent. For example, “According to certain embodiments, the housing covers, at least partially, the pair of wheels, and the housing define a loading slot through which the string is loaded or removed from between the pair of wheels.” [‘774 1:63-66; ‘703 2:1-4] “The loading slot of an example embodiment includes rounded edges.” [‘703 2:4-5] “Embodiments of devices described herein include a device body 5 with a housing 100 that covers a pair of wheels, where the pair of wheels includes a first wheel and a second wheel. At least one of the pair of wheels is a drive wheel, while the other of the pair of wheels can be driven or be an idling guide wheel. The housing 100 allows the looped string to be loaded through an oblique loading slot 101 that has specific tolerances based on the size of the looped string that is compatible with the device. This loading slot 101 guides the looped string to fit into a gap between the pair of wheels.” [‘774 8:48-57]

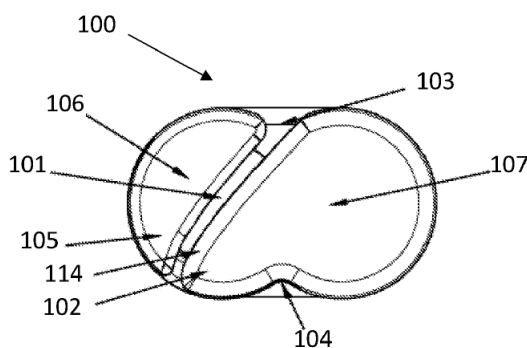


FIG. 6

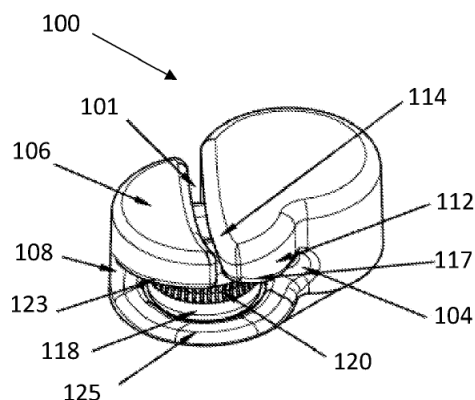


FIG. 7

[‘774 Figs. 6-7]

35. Additionally, “According to embodiments described herein, a user is able to insert the looped string into the loading slot 101 and slide it across a top of a first wheel 118 to fit between the pair of wheels.” [‘774 9:7-10] Furthermore, “looped string is loaded into the loading slot 101 and dragged across the top of the first wheel 118 to be received between the two wheels of the device. The housing 100 includes a guiding tab 105 on the left wheel cover 106 and a loading tab 102 on the right wheel cover 107.” [‘774 60-64]

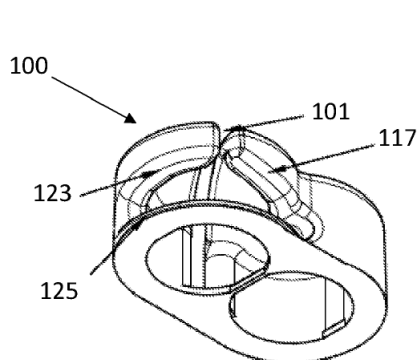


FIG. 8

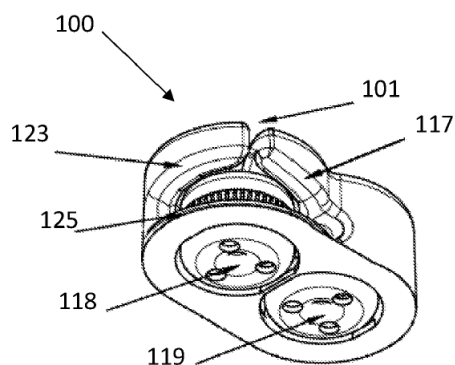


FIG. 9

[‘774 and ‘703, Figs. 8-9]

36. Additional support for the correct construction of “loading slot” can be found in the following: “This loading slot 101 guides the looped string to fit into a gap between the pair of wheels. The slot of an example embodiment includes a curved shape to provide an easy way to load the looped string to a correct position within the string shooting device, while resisting accidental removal of the looped string through the slot.” [‘774 8:59-65]

37. Furthermore, “According to embodiments described herein, a user is able to insert the looped string into the loading slot 101 and slide it across a top of a first wheel 118 to fit between the pair of wheels. While embodiments described herein reference a drive wheel and a guide wheel, either or both wheels can be driven and such embodiments would not depart from the description herein. The loading feature is configured to facilitate the quick and easy swapping of looped strings while also securely holding the looped string between the wheels when the device is operating.” [703 9:11-20]

C. Incorrect Construction of “loading slot”

38. Defendants prefer to construe “loading slot” as a “slot that facilitates loading of the looped string through the string loading slot to a position between a first wheel and a second wheel”. This interpretation is incorrect at least because it reads out the ability to remove the string loop. Defendants also seem to read in

“...loading of the looped string...to a position between a first wheel and a second wheel”, but ignore the dozens references to the term “pair of wheels” in each of the ‘774 and ‘703 Patents. A pair of wheels would encompass a first wheel and a second wheel and is the construction that should be adopted.

VII. Disputed Claim Terms: “*guide slot*” and “*guiding slot*”

39. The claim terms “guide slot” and “guiding slot” are found in claim 13 of the ‘774 Patent, and in claims 12 and 17 of the ‘703 Patent. These and the claims from which they depend are reproduced below:

A. Relevant ZipString Patents

1. The ‘774 Patent

a. Claim 12

A method of propelling a looped string through air comprising:

receiving a looped string into a housing between a pair of

wheels, wherein at least one of the pair of wheels is a driven wheel, wherein the looped string defines an axis along which the string extends, and wherein the looped string comprises a plurality of fibers extending away from the axis;

driving the at least one driven wheel;

propelling the looped string from the at least one driven wheel; and

generating, from the looped string propelled by the at least

one driven wheel, lift at an end of the looped string

distal from the housing based on a surface texture of string configured to increase air friction in response to the looped string being propelled.

b. Claim 13

The method of claim 12, wherein receiving the looped string into the housing between the pair of wheels comprises receiving the looped string through a **guide slot** of the housing between the pair of wheels.

2. The '703 Patent

a. Claim 12

A housing for a string shooting device comprising:
a first wheel cover portion;
a second wheel cover portion;
a string loading slot defined between the first wheel cover
portion and the second wheel cover portion,
wherein
the first wheel cover portion and the second wheel cover portion are separated by the string loading slot;
and
a **guiding slot** defined within the housing transverse to the
string loading slot and extending from the first wheel
cover portion to an intake aperture in the second wheel
cover portion.

b. Claim 17

A device for propelling a string comprising:
a first wheel rotatable about a first axis having a first
wheel side orthogonal to the first axis;
a second wheel rotatable about a second axis; and
a housing substantially covering the first wheel and the

second wheel, the housing defining an exit aperture and a **guiding slot**, the guiding slot extending about at least a portion of an outer perimeter of the first wheel to an intake aperture axially aligned with a gap between the first wheel and the second wheel and the exit aperture.

B. Correct Construction of “guide slot” and “guiding slot”

40. A POSITA would construe the terms “guide slot” and “guiding slot” as a “slot extending around a portion of the circumference of at least one of the pair of wheels”.

41. Support for this construction is found in the ZipString patents, including, “The housing of an example embodiments [sic] includes a guide slot, where the guide slot extends around a portion of a circumference of at least one of the pair of wheels. The guide slot of an example embodiment extends around at least half of the circumference of the at least one 10 of the pair of wheels.” [‘774 2:5-10] Similarly, “According to some embodiments, the housing includes a guiding slot, where the guiding slot extends around a portion of a circumference of at least one of the pair of wheels.” [‘703 2:59-62]

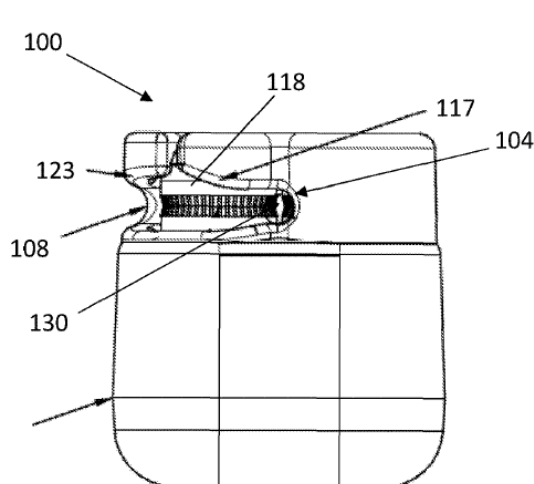


FIG. 12

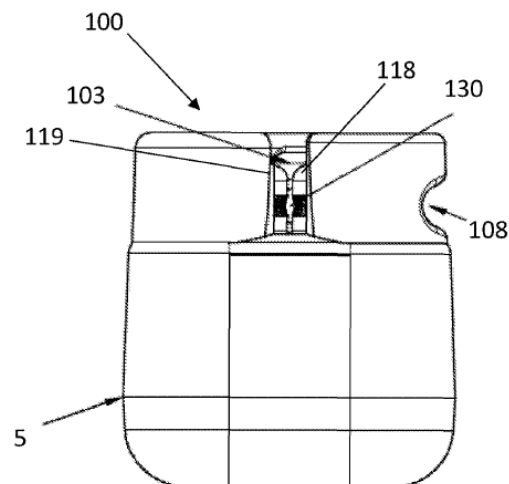


FIG. 13

[‘774 Patent Figs 12-13; ‘703 Patent Figs 12-13]

C. Incorrect Construction of “guide slot” and “guiding slot”

42. In contrast to the Defendants’ position, a POSITA would not construe the terms “guide slot” and “guiding slot” as “a slot different from the loading slot that moves the string to the operation position between a drive wheel and a guide wheel”. Defendants appear to read in the limitation that the guide or guiding slot is *different* from the loading slot. But the term “different” is never used to with or for the term “slot”, despite it being used for other purposes in the ‘774 and ‘703 Patents. A POSITA would notice that the loading slot 101 and guide/guiding slot 108 share a common housing and space. Defendants also seem to read out the “around a portion of the circumference”, which a POSITA would understand could negate the stated purpose of the guide/guiding slot. Additionally, Defendants seem to add the

limitation of an “operation position”, which is not mentioned in the ‘774 or ‘703 Patents. For similar reasons, Defendants’ reference to the Prosecution History of the ‘703 patent does not persuade a POSITA to redefine or unnecessarily limit the guide/guiding slot because the Office Action response of November 20, 2023 at pages 10-12 references the “intake aperture 182” and distinguishes it from the guiding slot and not the loading slot, which is included in the definition presented by Defendants. [‘703 File History: pdf pp 62-63]

VIII. Disputed Claim Terms: “loading tab”

43. The claim term “loading tab” is found in claims 14 and 19 of the ‘774 Patent. These and the claims from which they depend are reproduced below:

A. Relevant ZipString Patents

1. The ‘774 Patent

a. Claim 14

The method of claim 13, wherein receiving the looped string through a guide slot of the housing between the pair of wheels comprises receiving the looped string through the guide slot of the housing, across a first wheel of the pair of wheels guided by a **loading tab**, and between the pair of wheels.

b. Claim 16

A string shooting device comprising:

a body;

a housing attached to the body and defining a loading slot;

a pair of wheels, wherein at least one of the pair of wheels is a driven wheel, wherein the loading slot is

disposed at least partially over at least one of the pair of wheels; and
a looped string, wherein the looped string comprises a surface texture configured to increase air friction in response to the looped string being propelled through air by the pair of wheels.

c. Claim 18

The string shooting device of claim 16, wherein the housing further defines an intake aperture and an exit aperture, wherein the intake aperture is axially aligned with the exit aperture and a gap between the pair of wheels.

d. Claim 19

The string shooting device of claim 18, wherein the loading slot is defined at one edge by a loading tab, wherein the loading tab comprises a tip that is thinner than a body of the loading tab, wherein the loading tab functions to guide the string from the loading slot to the intake aperture.

B. Correct Construction of “loading tab”

44. A POSITA would construe the term “loading tab” as a “a structure which guides the string from the loading slot to the intake aperture.”

45. Support for this construction is found in the ‘774 Patent, including, “The loading slot of an example embodiment is defined at one edge by a loading tab, where the loading tab includes a tip that is thinner than a body of the loading tab, where the loading tab functions to guide the string from the loading slot to the intake aperture.” [‘774 1:67-2:5] Similarly, “According to certain embodiments, the loading slot is defined at one edge by a loading tab, wherein the loading tab

comprises a tip that is thinner than a body of the loading tab, where the loading tab functions to guide the string from the loading slot to the intake aperture.” [‘774 2:50-55]

C. Incorrect Construction of “loading tab”

46. In contrast to the Defendants’ position, a POSITA would not construe the term “loading tab” as “a tab extending from the loading slot that leads the string into the intake aperture”. A POSITA would first note that a slot is a gap or opening and that a structure, such as a tab does not extend from an opening. Instead, a POSITA would recognize from the drawings, for example Figs. 8 and 9 above, that the loading slot is an open space that is formed between the different parts of the housing. As such, the loading tab 102 cannot extend from the space i.e. loading slot but, as the specification discloses the loading tab 102 extends from a portion of the housing 100. Defendants appear to read in a new limitation that the loading tab must be structured in such a way that it extends from the loading slot to guide the string from the loading slot to the intake aperture. But none of the portions cited by Defendants to support this incorrect construction include the requirement that the loading tab extends from the loading slot.

IX. Disputed Claim Terms: “about at least a portion”

47. The claim term “about at least a portion” is found in claims 3 and 17 of the ‘703 Patent. Under the correct construction, described below, this term is not indefinite. These and the claims from which they depend are reproduced below:

A. Relevant ZipString Patent

1. The ‘703 Patent

a. Claim 1

A device for propelling a looped string comprising:
a first wheel rotatable about a first axis having a first wheel side orthogonal to the first axis;
a second wheel rotatable about a second axis a second wheel side orthogonal to the second axis, wherein the first wheel side and the second wheel side face a same direction; and
a housing substantially covering the first wheel and the second wheel, the housing comprising:
a first wheel cover portion and a second wheel cover portion defining a string loading slot therebetween, wherein the string loading slot facilitates loading of the looped string through the string loading slot to a position between the first wheel and the second wheel, wherein the first wheel cover portion extending over a portion of the first wheel side, and wherein the second wheel cover portion extends over at least a portion of the first wheel side and at least a portion of the second wheel side.

b. Claim 3

The device of claim 1, wherein a guiding slot extends **about at least a portion** of the outer perimeter of the first wheel to an intake aperture axially aligned with a gap between the first wheel and the second wheel.

c. Claim 17

A device for propelling a string comprising:

- a first wheel rotatable about a first axis having a first wheel side orthogonal to the first axis;
- a second wheel rotatable about a second axis; and
- a housing substantially covering the first wheel and the second wheel, the housing defining an exit aperture and a guiding slot, the guiding slot extending **about at least a portion** of an outer perimeter of the first wheel to an intake aperture axially aligned with a gap between the first wheel and the second wheel and the exit aperture.

B. Correct Construction of “about at least a portion”

48. A POSITA would construe the term “about at least a portion” by its plain and ordinary meaning as “a part of any whole.”

49. Notably, the Parties have already agreed that the definition for “portion” is “a part of any whole.” [Jt Claim Construction Statement, pg 2] Additionally, support for this construction is found in the ‘703 Patent, including use of the term in claims 1, 6, 9, 10 and 14. A POSITA would understand that estimative terms (“about”, “at least”) do not diminish the POSITA’s understanding of this phrase. In aggregate, terms used within “about at least a portion” mean some portion of a whole. A POSITA would know that “About” means approximately or roughly near a particular quantity, which in basic English language is an approximation of the amount within the whole. “At least” is synonymous with no less than, which, when used in conjunction with “a portion,” indicates that, at a

minimum, some part of the whole. Accordingly, it is my opinion that the term “about at least a portion” is sufficiently definite.

C. Incorrect Construction of “about at least a portion”

50. In contrast to the Defendants’ position, a POSITA would not construe the term “about at least a portion” as indefinite. Notably, Defendants not only ignore the agreed-upon definition of the root term “portion”, they also provide no analysis to support the indefiniteness assertion.

X. Disputed Claim Terms: “configured to illuminate a location on a path of travel of a string”

51. The claim term “configured to illuminate a location on a path of travel of a string” is found in claim 13 of the ‘927 Patent. Under the correct construction, described below, this term is not indefinite. This is reproduced below:

A. Relevant ZipString Patent

1. The ‘927 Patent

a. Claim 13

A string shooting device comprising:
 a body;
 a housing attached to the body;
 a pair of wheels disposed at least partially within the housing, wherein at least one of the pair of wheels is a driven wheel; and
 a light source, wherein the light source is **configured to illuminate**
 a location on a path of travel of a string propelled by the string shooting device.

B. Correct Construction of “configured to illuminate a location on a path of travel of a string”

52. A POSITA would construe the term “configured to illuminate a location on a path of travel of a string” as “designed to light a portion of a path along which the string travels.”

53. Support for this construction is found in the ‘927 Patent, including “According to certain embodiments, the light switch includes a photo sensor where the photo sensor causes the light source to illuminate in response to a level of light sensed at the photo sensor being below a predetermined value.” [‘927 2:31-34] Additionally, “Embodiments provided herein include a string shooting device including: a body; a housing attached to the body; a pair of wheels disposed at least partially within the housing, where at least one of the pair of wheels is a driven wheel; a light source; and a light guide, where the **light guide is configured to guide light from the light source to a location on a path of travel of a string propelled by the string shooting device.** The string shooting device further includes, in some embodiments, a string where the string includes at least one of phosphorescent particles or phosphorescent fibers and where the string is propelled along the path of travel.” [‘927 2:35-45] Accordingly, it is my opinion that the term “configured to illuminate a location on a path of travel of a string” is sufficiently definite.

C. Incorrect Construction of “configured to illuminate a location on a path of travel of a string”

54. In contrast to the Defendants’ position, a POSITA would not construe the term “configured to illuminate a location on a path of travel of a string” as indefinite. Not only is there adequate disclosure in the specification, as stated above, the phrase is sufficiently clear on its own, using its plain and ordinary meaning. Notably, Defendants provided no analysis to support the indefiniteness assertion.

XI. Declaration

55. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code. I reserve the right to amend my opinions in light of new information.

Dated: January 6, 2025

By: _____


Jason A. Janet