

THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KLEIN TOOLS, INC.,

Petitioner

v.

MILWAUKEE ELECTRIC TOOL CORPORATION

Patent Owner

Case No. IPR2026-00233

U.S. Patent No.

11,656,067

**DECLARATION OF ROBERT GIACHETTI, PH.D. IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 11,656,067**

TABLE OF CONTENTS

I.	BACKGROUND AND QUALIFICATIONS.....	2
II.	UNDERSTANDING OF THE LAW	4
1.	Level of Ordinary Skill in the Art	4
2.	Claim Construction	5
3.	Anticipation.....	6
4.	Obviousness.....	7
III.	TECHNICAL BACKGROUND - STATE OF THE ART	11
IV.	THE '067 PATENT	13
1.	Overview and Prosecution History of the '067 Patent	13
2.	Priority Date	13
3.	Challenged Claims.....	13
V.	ASSERTED PRIOR ART.....	18
1.	Summary of Opinions	18
2.	Overview of the Asserted Prior Art.....	18
VI.	UNPATENTABILITY	20
1.	Ground 1: Claims 1-9, 11-12 of the '067 Patent are Anticipated in View of Hernandez.....	20
a.	Claim 1	20
2.	Ground 2: Claims 1-9, 11-12 of the '067 Patent are Obvious in View of Hernandez alone, or in Combination with Murray.....	23
a.	Claim 1	24
b.	Claim 6	39

c.	Claim 7	42
d.	Motivation to Combine and Expectation of Success Combining Hernandez and Murray	44
3.	Ground 3: Claim 10 of the '067 is Obvious Over Hernandez in View of Gilliam.....	47
a.	Claim 10	47
b.	Motivation to Combine and Expectation of Success Combining Hernandez and Gilliam	49
VII.	NO SECONDARY CONSIDERATIONS OF NON- OBVIOUSNESS.....	52

LIST OF EXHIBITS¹

Exhibit No.	Description²
1001	Certified U.S. Patent No. 11,656,067
1002	Certified File History for U.S. Patent No. 11,656,067
1003	Declaration of Robert Giachetti
1004	Curriculum Vitae of Robert Giachetti
1005	U.S. Patent No. 7,096,596 (“Hernandez”)
1006	U.S. Patent No. 6,324,769 (“Murray”)
1007	U.S. Patent No. 6,367,161
1008	U.S. Patent No. 6,662,463
1009	U.S. Patent Application Publication No. 2004/0071869 (filed Oct. 10, 2002) (“Gilliam”)
1010	U.S. Patent No. 4,429,462
1011	U.S. Patent No. 6,243,964
1012	U.S. Patent No. 6,282,808
1013	U.S. Patent No. 6,643,947
1014	U.S. Patent No. 6,804,899

¹ Unless otherwise specified, citations are to the original page, column, and line numbers in exhibits, and all emphasis is added unless otherwise noted.

² Descriptions are for convenience only and are not admissions or evidence.

Exhibit No.	Description ²
1015	Patent Owner’s Preliminary Response to Petition, <i>Apex Tool Group LLC v. Milwaukee Electric Tool Corp.</i> , PGR2020-00056, Paper No. 9.
1016	Milwaukee Tool Internal May 8, 2017 Presentation, titled “Wider tape standout issue[:] Root cause analysis and Rework”
1017	Milwaukee Tool Internal Standout Procedure Excel Spreadsheet
1018	Kat Eschner, <i>How Hoop Skirts Led to Tape Measures</i> , Smithsonian Magazine (July 14, 2017), https://www.smithsonianmag.com/smart-news/how-hoop-skirts-led-tape-measures-180963995/ (last visited Dec. 5, 2025).
1019	Tape (Chesterman), https://americanhistory.si.edu/collections/object/nmah_761653 .
1020	U.S. Patent No. 79,965
1021	U.S. Patent No. 1,402,589
1022	Dkt. 28. Report of the Parties’ Planning Meeting in <i>Milwaukee Electric Tools Corporation v. Klein Tools, Inc.</i> , No. 1:25-cv-04689 (N.D. Ill.).
1023	Dkt. 30. Order adopting Parties’ Proposed Case Management Schedule in <i>Milwaukee Electric Tools Corporation v. Klein Tools, Inc.</i> , No. 1:25-cv-04689 (N.D. Ill.).
1024	Dkt. 42. Order granting Joint Motion for Extension of Certain Dates in <i>Milwaukee Electric Tools Corporation v. Klein Tools, Inc.</i> , No. 1:25-cv-04689 (N.D. Ill.).
1025	Dkt. 53. Joint Motion to Extend Certain Deadlines in the Scheduling Order in <i>Milwaukee Electric Tools Corporation v. Klein Tools, Inc.</i> , No. 1:25-cv-04689 (N.D. Ill.).

I, Dr. Robert Giachetti, declare as follows:

1. My name is Robert Giachetti. I have been retained by Klein Tools, Inc., (“Petitioner”) as an expert for the above-captioned Petition for *inter partes* review (“IPR”) of U.S. Patent No. 11,656,067 (the “’067” patent) (Ex-1001). I understand Petitioner is challenging the validity of claims 1-12 (the “Challenged Claims”) of the ’067 patent in this Petition.

2. I have been asked to opine on whether the Challenged Claims are anticipated and/or rendered obvious by the prior art. In this Declaration, I give my opinions as to whether certain references invalidate the Challenged Claims. My opinions are based on my years of education, research, training and experience, as well as my investigation and review of relevant materials. In preparing this Declaration, I reviewed the materials referenced herein, including the ’067 patent (Ex-1001), the file history of the ’067 patent (Ex-1002), the prior art references, the Petition, references which reflect the state of the relevant art at the time of the alleged invention and the background knowledge of a person of ordinary skill in the art, and other documents listed in the Exhibit List of the Petition. I may rely upon these materials and/or additional materials to rebut arguments raised by Patent Owner.

3. This Declaration contains statements of my opinions formed to date and the bases and reasons for those opinions. I may offer additional opinions based on further review of materials in this case, including opinions and/or testimony of other

expert witnesses. I make this Declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein.

4. Where my conclusions are based on certain assumptions that I have adopted, I have stated such assumptions in this Declaration.

5. Fusion Engineering, LLC is being compensated at my usual rate of \$525 per hour for my time spent working on issues in this matter. I am also being reimbursed for any reasonable and customary expenses associated with my work and testimony. I have no financial interest in, or affiliation with, the Petitioner, real parties-in-interest, or the Patent Owner. My compensation is not dependent upon the outcome of, or my testimony in, the present IPR or any related litigation proceedings.

I. BACKGROUND AND QUALIFICATIONS

6. My current curriculum vitae, which includes additional detail about my education, experience, and publications, is attached as Ex-1004. Below I highlight some relevant aspects of my education and experience.

7. I currently serve as the Senior Vice President at Fusion Engineering, LLC.

8. I earned a Ph.D. in mechanical engineering in 2008 from the University of Wisconsin-Madison. I earned a Master of Science in mechanical engineering from the University of Illinois at Chicago in 2000. I earned a Bachelor of Science in

mechanical engineering, with a minor in physics, from Marquette University in 1997. I also taught undergraduate level courses at all three of these Universities while I was enrolled. I am a licensed mechanical engineer in Illinois, Georgia, and Oklahoma. I am also an active member in various committees for both ASTM International, formerly known as: the American Society for Testing and Materials, (ASTM) and the American Society of Mechanical Engineers (ASME) related to consumer products (ASTM), sports equipment (ASTM), and power transmission and gearing (ASME). I have also participated in the National Council of Examiners, Engineers and Surveyors PAKS committee (Professional Activities and Knowledge Study) that selects the types of questions, and proportion thereof, that appear on the examination required to become a licensed engineer.

9. I have more than 25 years of experience in mechanical engineering and machine design, and over 15 years of experience providing consulting services in mechanical engineering and biomechanic practices. These consulting services have ranged from consumer product design review, testing, usage, focus group design, and government product recall; industrial equipment review and failure analysis; and development of instrumented testing. My project experience includes buckling analysis of telescopic cylinders and bending performance of lifting hooks. I am proficient in designing equipment using, or relying on analysis performed with

software and hardware capabilities, including, but not limited to, LabVIEW, Matlab, Mathcad, AutoCAD, and 3DSSPP.

10. Additionally, I have worked in industry designing machinery in steel coil processing equipment and I also worked as a designer of industrial lifting equipment. In these positions I routinely implemented analysis of machine elements in regard to their shape, stress, strains, and machine element strength as a function of shape. This sort of analysis is taught in several undergraduate engineering courses. Examples of these machines or machine elements include lifting beams, spreader beams, and hooks.

II. UNDERSTANDING OF THE LAW

11. I am not an attorney, and I do not offer any legal opinions herein. In order to conduct my analysis, I have been provided by counsel with an understanding of the legal principles relevant to the analysis, which are summarized below.

12. I understand that for a claim of a patent to be found patentable, it must be, among other things, new and not obvious in light of what came before it. Patents and publications which predate the claimed subject matter are generally referred to as “prior art.”

1. Level of Ordinary Skill in the Art

13. I understand that an assessment of claims of the '067 patent are to be construed as they would have been understood by a person of ordinary skill in the

art (“POSA”) as of the earliest priority date. For the purposes of my opinions below, I have been asked to assume that the relevant priority date for the Challenged Claims is August 24, 2017, and have applied the understanding of a POSA as of that date.

14. I understand that several factors may be considered in determining the level of skill in the art, including the education level of the inventor, the education level of active workers in the field, the type of problems encountered in the art, prior art solutions to those problems, the speed with which innovations in the art are made, and sophistication of the technology.

15. I have analyzed the ’067 patent and, in my opinion, a POSA in the field of the ’067 patent in August 2017 (the “relevant time period”) would have had a bachelor’s degree in engineering or at least 2 years of industry experience in equipment or tool design involving beam strength calculations. Formal education in a relevant field, such as mechanical engineering may compensate for less experience, and vice versa.

16. I have been a POSA since at least 1997. The opinions I am offering are from the perspective of a POSA at the time of the alleged invention, which I understand to be August 24, 2017.

2. Claim Construction

17. I understand the first step in determining whether a patent claim is valid is to properly construe the claims. I further understand that claim terms are generally

given their ordinary and customary meaning, which is the meaning that the term would have to a POSA in question at the relevant time period, taking into account the claim language itself, specification, and prosecution history pertaining to the patent, as well as the relevant extrinsic evidence. I have applied this standard in formulating my opinions, and set forth my understanding of the scope of particular claim terms discussed below.

3. Anticipation

18. I understand that the law of anticipation is governed by the provisions of 35 U.S.C. § 102. I understand that the question of anticipation asks whether the claims cover something that is novel. I have been informed that the concept of anticipation requires that each and every element of a Challenged Claim is present in, or otherwise taught by, a single reference. In other words, I understand that one cannot combine two or more references to assert a finding of anticipation. I understand that the content of a patent or other printed publication (a “prior art reference”) should be interpreted the way a POSA would have interpreted the prior art reference as of the effective filing date. I further understand that the prior art reference must enable a POSA to make and use the claimed subject matter.

19. I also understand that a prior art reference does not need to explicitly describe each element because anticipation can occur when a claimed limitation is necessarily inherent in the relevant reference. I understand that claimed subject

matter is inherent and in the public domain if it is the natural result flowing from the explicit disclosure of the prior art. Further, I understand that inherent anticipation does not require that a POSA would have recognized the inherent disclosure as of the critical date. I am also informed that, for inherent anticipation, information arising after the critical date may be used to show that the claimed subject matter, as disclosed in a prior art reference, was in fact inherent to the prior art.

4. Obviousness

20. I understand that a claim is unpatentable under 35 U.S.C. § 103 if the claimed subject matter as a whole would have been obvious to a POSA at the relevant time period. I understand that if the claimed invention is not anticipated by the prior art, the claim may still be invalid if the difference between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a POSA. Thus, in considering the reason or motivation to combine references, it is essential to avoid using hindsight.

21. I also understand that an obviousness determination includes the consideration of various factors such as (1) the scope and content of the prior art, (2) the differences between the prior art and the asserted claims, (3) the level of ordinary skill in the pertinent art, and (4) the existence of secondary considerations or objective indicia of obviousness or non-obviousness.

22. I understand that the content of a patent or other printed publication (i.e., a reference) should be interpreted the way a POSA would have interpreted the reference as of the effective filing date. In forming my opinions, I have assumed that the person of ordinary skill in the art is a hypothetical person who is presumed to be aware of all of the relevant art at the time of the invention. I also understand that a POSA is not an automaton, and may be able to fit together the teachings of multiple patents employing ordinary creativity and the common sense that familiar items may have obvious uses in another context or beyond their primary purposes.

23. In determining the scope and content of the prior art, I understand that a reference is considered analogous art if it falls within the field of the inventor's endeavor or if it is reasonably pertinent to the particular problem with which the inventor was involved. A reference is reasonably pertinent if it logically would have commended itself to an inventor's attention in considering their problem. If a reference relates to the same problem as the claimed invention, that supports use of the reference as prior art in an obviousness analysis.

24. I understand that an obviousness determination can be based on a single prior art reference or a combination of multiple prior art references or the knowledge of one of ordinary skill in the art. I have been informed by counsel that there are several recognized rationales for combining references or modifying a single reference to show obviousness. Some of these rationales include:

- combining prior art elements according to known methods to yield predictable results;
- simple substitution of one known element for another to obtain predictable results;
- use of known technique to improve similar devices (methods, or products) in the same way;
- applying a known technique to a known device (method or product) ready for improvement to yield predictable results;
- “obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; and
- some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

25. I also understand from counsel that an obviousness determination requires a reasonable expectation of success in achieving the claimed invention. I understand that a finding of a reasonable expectation of success does not require

absolute predictability of success. I understand that evidence of a reasonable expectation of success, like evidence of a motivation to combine, may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved.

26. I further understand that if an alleged invention is otherwise rendered obvious in view of the prior art, it is not patentable simply because the inventors discover an inherent property or a result that naturally flows from its application or use. I also understand that a range may disclose a particular value when a POSA is able to determine optimum or workable ranges by routine experimentation.

27. I understand that secondary considerations or objective indicia of non-obviousness may include (1) a long felt but unmet need in the prior art that was satisfied by the claimed invention; (2) commercial success or lack of commercial success of processes covered by the patent; (3) unexpected results achieved by the claimed invention; (4) praise of the claimed invention by others skilled in the art; (5) the taking of licenses under the patent by others; (6) deliberate copying of the claimed invention; (7) teaching away; and (8) the simultaneous invention of the claimed subject matter. I also understand that there must be a relationship between any such secondary considerations and the claimed invention. I further understand that contemporaneous and independent invention by others is a secondary consideration supporting an obviousness determination.

28. I understand that any secondary considerations or objective indicia must bear a nexus to the claimed invention. Where the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention. I further understand that the patentee bears the burden of demonstrating that the relevant commercial success is attributable to the claimed invention, as opposed to other economic and commercial factors unrelated to the technical quality of the patented subject matter.

29. In rendering my opinions, I followed these guidelines.

III. TECHNICAL BACKGROUND - STATE OF THE ART

30. Here, I present the knowledge and terminology that would have been generally understood by a POSA in the relevant time period. I also now discuss a brief review of commercial devices that existed before August 2017.

31. Tape measures were known since at least the 1800s. Ex-1018; Ex-1019. And “[o]ne of the most desirable characteristics commercial rule assemblies can possess is a relatively long blade standout.” Ex-1006, 1:10-12. Standout is the distance a tape measure’s blade can be extended before it buckles under its own weight. *E.g.*, Ex-1006, 1:14-18.

32. POSAs have long known that a blade’s curvature has a direct impact on a tape measure’s standout. *E.g.*, Ex-1021, 2:45-54 (1919 patent describing tape and

how “its concavo convex structure and its dimensions being such that when so extended and straightened, it possesses sufficient structural strength to prevent it from buckling.”). For example, Murray, filed in 1999, explains how “one skilled in the art” would have understood that blade standout distance depends on several factors, including, but not limited to, blade width, height of the blade in its concavo-convex configuration, blade thickness, and geometry of the blade transverse cross-section when in the concavo-convex configuration. Ex-1006, 5:21-30. Murray further explains how “[t]he concavo-convex cross-section of the blade generally provides the unsupported blade 16 with blade standout.” Ex-1006, 5:10-20.

33. A POSA in August 2017 would also have known how to adjust a blade’s curvature, flat width, and thickness to achieve a standout of “up to approximately 13 feet [156 inches],” for example, as taught by Hernandez and Murray. Ex-1005, 1:29-34, 4:47-50; Ex-1006, Cover, Title, Abstract, 1:10-37, 1:62-67, 2:7-8, 2:19-26, 3:16-20, 3:48-53, 5:6-65, 6:28-47, 6:55-65, 7:14-52, 7:65-8:12, 11:6-10.

34. In fact, the principles provided in Hernandez and Murray are elementary concepts taught at the beginning of a POSA’s collegiate education. Namely, the cross-sectional (transverse) shape is taught as a key concept in the introduction to analysis of bending of long slender beams, and the inherent material stiffness is also taught as an essential element of resistance to bending. A POSA is

also taught that material density combined with the shape of the blade determines the weight of the extended blade (as well as the overall weight of the device). Similarly, the curvature of the stand out length for a long slender beam, i.e., the blade, is also conceptualized in the entry level engineering course.

IV. THE '067 PATENT

1. Overview and Prosecution History of the '067 Patent

35. I have reviewed the '067 patent (Ex-1001). I have also reviewed the description of the '067 patent provided in Section VIII of the Petition and agree with it.

36. I understand the prosecution history of a patent can provide insight into how the inventors and the patent examiner understood the claimed invention and the prior art. I have reviewed the prosecution history of the '067 patent (Ex-1002). I have also reviewed and agree with the summary of that history provided in Section VIII(1) of the Petition.

2. Priority Date

37. I have been asked to assume for the purposes of the present Declaration that the priority date of the '067 patent is August 24, 2017.

3. Challenged Claims

38. I understand that Petitioner is challenging the patentability of claims 1-12 of the '067 patent in the Petition for IPR to which this Declaration will be attached. Those claims are reproduced below:

The '067 Patent	
Limitation Identifier	Text of Claim
Independent Claim 1	
[1A]	"A tape measure comprising:"
[1B]	"a housing;"
[1C]	"a tape reel rotatably mounted within the housing;"
[1D]	"an elongate blade wound around the reel, the elongate blade comprising:"
[1E]	"an upper surface;"
[1F]	"a lower surface;"
[1G]	"an elongate metal core having a first thickness, T1, between 0.12 mm and 0.14 mm;"
[1H]	"a length between 15 feet and 40 feet;"
[1I]	"a flat width of 20 mm to 40 mm;"
[1J]	"a curved profile such that the upper surface of the elongate blade defines a concave surface and the lower surface defines a convex surface;
[1K]	"a curved width, wherein the curved width is less than the flat width; and"
[1L]	"a curved height between 8.5 mm and 9.5 mm;"

The '067 Patent	
Limitation Identifier	Text of Claim
[1M]	“wherein a ratio of the curved width to the flat width is between 0.6 and 0.8;”
[1N]	“wherein a ratio of curved height to flat width is greater than 0.285;”
[1O]	“wherein a standout distance of the elongate blade from the housing is greater than 150 inches; and”
[1P]	“a retraction system coupled to the tape reel, wherein the retraction system drives rewinding of the elongate blade on to the tape reel.”
Dependent Claim 2	
	“The tape measure of claim 1,”
[2A]	“wherein the curved profile is located at a location along at least the first 132 inches of a length of the elongate blade.”
Dependent Claim 3	
	“The tape measure of claim 1,”
[3A]	“wherein the curved profile is located at a location between 5 feet and 15 feet along a length of the elongate blade measured from a hook located at an end of the tape blade.”
Dependent Claim 4	
	“The tape measure of claim 1,”
[4A]	“wherein the curved profile is located at a location between 6.5 feet and 13 feet along a length of the elongate blade measured from a hook located at an end of the tape blade.”
Dependent Claim 5	

The '067 Patent	
Limitation Identifier	Text of Claim
	"The tape measure of claim 4,"
[5A]	"wherein the flat width is 25 mm to 32 mm."
Dependent Claim 6	
	"The tape measure of claim 5,"
[6A]	"wherein the flat width is 32 mm."
Dependent Claim 7	
	"The tape measure of claim 6,"
[7A]	"wherein the curved width is less than 26 mm."
Dependent Claim 8	
	"The tape measure of claim 1,"
[8A]	"wherein the standout distance of the elongate blade from the housing is at least 156 inches."
Dependent Claim 9	
	"The tape measure of claim 1,"
[9A]	"wherein, when the elongate blade is at a maximum standout length, the curved profile is located in a section of tape blade that extends 5 feet from the housing toward a hook located at the end of the tape blade."
Dependent Claim 10	
	"The tape measure of claim 1, further comprising:"

The '067 Patent	
Limitation Identifier	Text of Claim
[10A]	“an upper polymer coating coupled to an upper surface of the elongate metal core,”
[10B]	“the upper polymer having a second thickness, T2; and”
[10C]	“a lower polymer coating coupled to a lower surface of the elongate metal core,”
[10D]	“the lower polymer coating having a third thickness, T3;”
[10E]	“wherein T1+T2+T3 is between 0.15 mm and 0.5.”
Dependent Claim 11	
	“The tape measure of claim 1,”
[11A]	“wherein the ratio of the curved height to T1 is greater than 65.”
Dependent Claim 12	
	“The tape measure of claim 1,”
[12A]	“wherein the retraction system is a spring-based retraction system comprising a spring coupled to the tape reel,”
[12B]	“wherein, as the elongate blade is unwound from the tape reel to extend from the housing, the spring stores energy and the spring releases energy driving rewinding of the elongate blade on to the tape reel.”

V. ASSERTED PRIOR ART

39. There are a number of patents and published patent applications that constitute prior art to the '067 patent. I have reviewed and considered the prior art discussed in this section, as well as the other Exhibits cited in this Declaration.

1. Summary of Opinions

40. I have reviewed and agree with the analysis in the Petition for IPR of the '067 patent. It is my opinion that each and every Challenged Claim would be anticipated by the prior art or obvious to a POSA at the relevant time period in view of the prior art applied in the Petition and knowledge and understanding of a POSA as further explained in this Declaration.

Ground	Claims	Basis
1	1, 2, 3, 4, 5, 6, 7, 8, 9, 11 12	Unpatentable pursuant to 35 U.S.C. § 102 over Hernandez
2	1, 2, 3, 4, 5, 6, 7, 8, 9, 11 12	Unpatentable pursuant to 35 U.S.C. § 103 over Hernandez alone, or in combination with Murray
3	10	Unpatentable pursuant to 35 U.S.C. § 103 over Hernandez in combination with Gilliam

2. Overview of the Asserted Prior Art

41. I have read and agree with the characterization of the asserted prior art in the Petition.

42. In reviewing the Hernandez patent (US 7,096,596 B2), I note that it expressly incorporates and references U.S. Pat. No. 6,324,769 to Murray as an example of prior art tape measures and specifically discusses the desirable characteristics of an elongated blade, such as achieving a standout arcuate length of at least ten feet with a horizontal linear length greater than ninety-seven percent of the standout arcuate length. Ex-1005, 1:5-7, 1:21-31. The Hernandez patent further describes the technical problem of downward bending in extended blades and the importance of blade dimensions, material selection, and cross-sectional shape in addressing this issue. Ex-1005, 1:31-43.

43. In my opinion, the incorporation by reference of the disclosure in Murray is effective because the Hernandez patent identifies, with particularity, the relevant subject matter—namely, the configuration and performance characteristics of tape measure blades—and clearly indicates the context in which the incorporated material is to be understood. A POSA reading the Hernandez patent would recognize that Murray provides foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are directly relevant to the improvements described in the Hernandez patent. The reference is not generic or ambiguous; rather, it is made in the context of a detailed technical discussion, enabling a POSA to locate and apply the incorporated

teachings to understand both the prior art and the advancements of the Hernandez disclosure.

VI. UNPATENTABILITY

1. Ground 1: Claims 1-9, 11-12 of the '067 Patent are Anticipated in View of Hernandez

44. For several claims, Hernandez alone discloses every limitation of the Challenged Claims. For others, a POSA would have found Hernandez to anticipate or inherently anticipate the Challenged Claims. While I have been asked to provide opinions only on certain limitations, I have reviewed the Petition's mapping of Hernandez to the Challenged Claims and agree with it. To the extent that any limitation is not disclosed or inherently disclosed by Hernandez, it is my opinion that the limitation is nevertheless obvious.

a. Claim 1

(1) “a curved width, wherein the curved width is less than the flat width; and” [1K]

45. In my opinion, Hernandez discloses limitation [1K]. Hernandez describes how “[t]he extended portion 60 of the blade 20 has a curved cross-section” and “[t]he blade 20 is substantially flat when wound about the reel 18[.]” Ex-1005, 4:19-23. More specifically, Hernandez discloses that “[t]he extended, elongated blade” may have a curved width “from about 0.925 inch to about 1.25 inch” (*id.* at 4:41-43), and further discloses that “[t]he blade 20 in the wound-up and flattened

condition may have a width of at least about 1 inch, for example about 1.600 to about 1.625 inches.” *Id.* at 4:23-25.

46. Hernandez also incorporates by reference Murray, (Ex-1005, 1:5-7, 1:28-31) which also discloses a curved width, wherein the curved width is less than the flat width. For example, Murray describes “the elongated blade when extending outwardly of the housing assembly opening in a normal concavo-convex cross-sectional configuration onto the reel in an abutting volute coil formation in a flattened cross-sectional configuration.” Ex-1006, Abstract; *see also id.* at 1:55-59. Hernandez further discloses this limitation because it incorporates Murray, which discloses that “[w]hen the preferred 1.25 inch [31.75 mm] blade (flat width F) is in its concavo-convex cross-sectional configuration ... the curved or arcuate width W is approximately 1.018 inches [25.857 mm].” Ex-1006, 7:58-62.

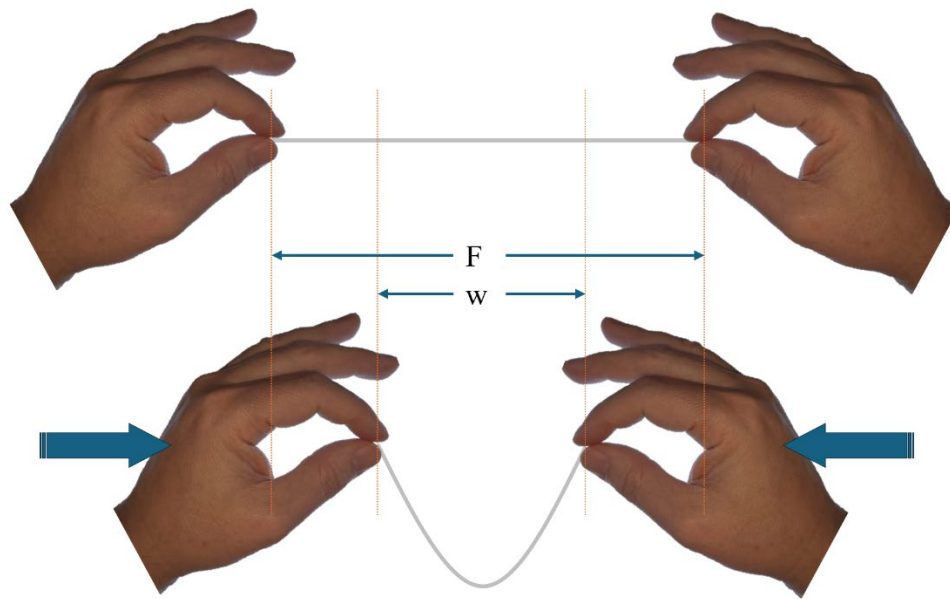
47. In my opinion, a POSA would have recognized that Hernandez and Murray expressly disclose “a curved width, wherein the curved width is less than the flat width.”

48. Further, in my opinion, a POSA would have known, and recognized, that the curved width of a tape measure like the ones taught by Hernandez, Murray, and described in the '067 patent must be less than the flat width of the blade. A POSA would recognize that for thin members, as is the case in tape measures, the area of the tape blade's cross-section does not increase or decrease in any appreciable

way when the tape blade flattens out. For instance, the neutral axis, a theoretical curve near the center of the cross-section by definition, experiences no stretching along its length when it is flattened out. Because the cross-section is so thin, a POSA would also thereby recognize that stretching along the whole profile of the cross-section is also negligible. Since the cross-sectional area can therefore be considered constant, and the thickness is considered constant, the arc length of the cross-section can also be considered constant. Accordingly, when the shape of the cross-section departs from a flat line, i.e. as curved height, H , increases from zero, the horizontal curved width, w , must decrease. For at least this reason, a POSA would understand that, due to the lack of stretching along the cross-section, when a given tape measure's cross-section is curved, the resulting width must necessarily be less than its flat width.

49. This phenomenon is analogous to comparing a length of string held taut as opposed to slack, as illustrated below. In this way, the curved width of the catenary shape will always be shorter than the flattened, or taut, width. In mathematical terms familiar to the POSA, from their required introductory calculus courses, the arc length computed along the shape of the cross-sectional curve will always exceed the flattened projection of the curved segment. In another simple example, considering a circle, having a radius 1, the total width of the circle, w , is 2 (i.e., the diameter), but the arclength of the semicircle is π (π) (approximately 3.14)

(i.e., half circumference), which is the width of the semicircle if it were smashed flat, or, F. Therefore, for a given tape measure like the ones taught by Hernandez, Murray, and described in the '067 patent, the curved width will always be less than the flat width.



50. Accordingly, a POSA would also have known that this limitation is an inherent property; as such, the curved width of a tape measure is inherently less than the flat width.

2. Ground 2: Claims 1-9, 11-12 of the '067 Patent are Obvious in View of Hernandez alone, or in Combination with Murray

51. As explained above, Claims 1-9 and 11-12 of the '067 patent are anticipated by Hernandez. To the extent that any limitation is not disclosed or inherently disclosed by Hernandez alone, it is my opinion that the limitation is

nevertheless obvious as discussed below. In my opinion, a POSA would have found Hernandez alone, or in combination with Murray, to render obvious Claims 1-9 and 11-12. While I have been asked to provide opinions only on certain limitations, I have reviewed the Petition's mapping of Hernandez and Murray to the Claims 1-9 and 11-12 and agree with it. Unless noted otherwise, it is my opinion that Hernandez alone, or in combination with Murray render Claims 1-9 and 11-12 obvious.

a. Claim 1

(1) “an elongate metal core having a first thickness, *Tl*, between 0.12 mm and 0.14 mm;” [1G]

52. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [1G] obvious.

53. Hernandez discloses an elongated blade “formed from a flat strip of metallic material,” i.e., metal. Ex-1005, 4:57-63, 2:7-16, 2:29-31. Hernandez further describes a blade thickness, “*t*,” for that core of “about 0.0045 inches [0.114 mm], for example from about 0.0030 inch [0.076 mm] to 0.0060 inch [0.152 mm][.]” Ex-1005, 4:25-27, 2:32-34. Hernandez therefore discloses a range of metal core thicknesses of 0.076 mm to 0.152 mm, which encompasses the claimed range.

54. Further, Hernandez incorporates by reference Murray, which also discloses a blade thickness, wherein the thickness can range from “0.0045 inch [0.114 mm] to 0.0063 inch [0.160 mm].” Ex-1006, 5:30-38; Ex-1005, 1:5-7, 1:28-31. Murray also discloses a blade thickness, wherein the thickness can also range

more specifically, from about “approximately 0.005 inch [0.127 mm] to approximately 0.0056 inch [0.142 mm].” Ex-1006, 5:38-46. Further, Murray discloses an embodiment wherein “the blade thickness T is approximately 0.0051 inch [0.130 mm].” Ex-1006, 5:47-49. Murray therefore discloses a range of metal core thicknesses of 0.114 mm to 0.160 mm, which encompasses the claimed range, a narrower range of 0.127 mm to 0.142 mm, which overlaps the claimed range, and an embodiment where the metal core thickness is 0.13 mm, which is within the claimed range.

55. Moreover, a POSA would have known that the ranges taught by Hernandez and Murray could be adjusted to adjust standout, and a POSA would have known how to adjust the disclosed ranges. As Murray expressly explains, “one skilled in the art will understand that the **length of the blade standout depends on many factors**, including (but not limited to) blade width (i.e. the transverse width of the blade measured when the blade is in its flattened condition shown, for example, in FIG. 8 and designated F); the height of the blade 16 in the concavo-convex configuration (designated H in FIG. 7); **blade thickness** (designated T in FIG. 7); and the geometry of the blade transverse cross-section when the same is in its normal concavo-convex than configuration.” Ex-1006, 5:21-30. For example, Murray expressly teaches that “a blade construction having dimensions within the broadest ranges,” i.e., up to 0.16 mm blade thickness, results in a blade standout up

to approximately 13 feet (156 inches), while further teaching that a blade “having dimensions within the more preferred narrower ranges,” i.e., up to 0.142 mm, results in a blade stand out of up to approximately 12.5 feet (150 inches). *Id.* at 5:30-62. In my opinion, a POSA would have been explicitly taught and understood that stand out is affected by the blade thickness, and that they could alter the stand out of the blade by adjusting thickness. Specifically, a POSA would have known and understood that they could increase the stand out of the blade by increasing blade thickness. *See, e.g., id.* at 7:14-24 (describing “relatively high thickness” of blade “is required for the arcuate length-out to be achieved). In other words, a POSA would have understood that thickness is result-effective.

56. A POSA would have been motivated to adjust the blade thickness so as to arrive at the claimed range by their desire to increase the stand out of the blade, while also understanding that making the blade too thick could result in making the housing too large, negatively impacting the comfort and usability of the tape measure, causing flattening to become too difficult, or making the tape measure too heavy thereby also leading to discomfort and extra effort in reeling in or deployment. Ex-1005, 1:28-48, 4:50-51; Ex-1006, 1:10-12, 1:34-37, 2:19-26, 3:16-20, 5:20-30. For example, Murray teaches that “[o]ne of the most desirable characteristics commercial rule assemblies can possess is a relatively long blade stand out.” Ex-1006, 1:10-12. And Hernandez teaches that “it is desirable that an extended portion

of the elongated blade be as linear as possible.” Ex-1005, 1:28-32. Murray further teaches that it is undesirable to have “a housing assembly footprint that is too large to fit comfortably within the average user’s hand.” Ex-1006, 8:57-65.

57. As I discuss in the motivation to combine section, a POSA would be motivated to modify the Hernandez’s tape measure in light of Murray’s teachings so as to arrive at the claimed range by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures with increased standout. In addition, a POSA would have understood that Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

58. In my opinion, a POSA would also expect to have a high degree of success. Hernandez and Murray expressly point to blade thicknesses for increasing standout in tape measures. And as I described above, POSAs had long known how a blade’s curvature and thickness impacted standout and how to successfully adjust those parameters to achieve their desired standout, including how to adjust those parameters relative to each other. *Supra* §III. These would also be straightforward adjustments and a POSA would have reasonably expected that tape measures with

the claimed blade thicknesses would work as intended (i.e., have an increased standout).

(2) “a length between 15 feet and 40 feet,” [1H]

59. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [1H] obvious.

60. Hernandez discloses a tape measure, wherein “[t]he extended portion 60 of the elongated blade 20 may have a standout arcuate length of at least ten feet with a horizontal linear length greater than ninety-seven percent of the standout arcuate length.” Ex-1005, 4:47-50, 1:31-34. Hernandez incorporates by reference Murray, which further discloses a tape measure “with a 33 foot long blade.” Ex-1006, 8:6-9, 11:6-21; Ex-1005, 1:5-7, 1:28-31. A POSA would have understood that Hernandez and Murray teach a tape measure having, at minimum, a blade length of 10 feet to 33 feet. A POSA would have also understood that Murray teaches a tape measure having a blade length in the claimed range (i.e., 33 feet).

61. As Hernandez explains, a “tape measure is a device used to measure such things as length and distance.” Ex-1005, 1:21-22. Hernandez further discusses that a “user employs the tape measure by unwinding the elongated blade, extending the blade through an opening in the housing.” *Id.* at 1:24-26. Murray similarly discloses that an “elongated blade formed of a ribbon of metal is mounted on the reel[,]” and further discloses that the “blade is constructed and arranged with respect

to the housing assembly to extend from a position tangential to the reel outwardly through a spaced opening in the housing assembly.” Ex-1006, 1:46-50.

62. In my opinion, a POSA would have found obvious and understood that the length of the blade affects the distance a tape measure can measure, and that they could affect the distance a tape measure can measure by adjusting the length of the blade. As such, a POSA would have understood that lengthening the blade would result in a longer blade.

63. A POSA would have been motivated to adjust the blade length so as to arrive at the claimed range by their desire to increase the usability of the blade. And a POSA would have understood that a blade with increased usability would measure greater distances. A POSA would have further understood that the blade length could be modified, and such modifications would have affected, and changed, the length of the blade.

64. As I discuss in the motivation to combine section, a POSA would be motivated to modify the Hernandez’s tape measure in light of Murray’s teachings so as to arrive at the claimed range by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures with increased standout. In addition, a POSA would have understood that Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout

performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

65. In my opinion, a POSA would also expect to have a high degree of success. At a minimum, Hernandez and Murray expressly teach blade lengths. Further, as I discussed above, it was well known to POSAs how to successfully adjust the length of a blade. *Supra* §III. These would also be straightforward adjustments and a POSA would have reasonably expected that lengthening a blade would work as intended (i.e., have a longer blade).

(3) “a flat width of 20 mm to 40 mm;” [1I]

66. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [1I] obvious.

67. Hernandez describes a flat width, wherein the flat width can range from “at least about 1 inch [25.4 mm]” up to “about 1.625 inches [41.275 mm].” Ex-1005, 4:23-25. Hernandez therefore discloses a range of flat widths of 25.4 mm to 41.275 mm, which overlaps the claimed range.

68. Murray, which is incorporated by Hernandez, also describes blade flat widths, which can range from “approximately 1.10 inches [27.94 mm] to approximately 1.5 inches [38.1 mm][,]” and can more specifically range from “approximately 1.25 inches [31.75 mm] to approximately 1.39 inches [35.306 mm].” Ex-1006, 5:30-41; Ex-1005, 1:5-7, 1:28-31. Murray further discloses an

embodiment wherein “the blade 16 width is approximately 1.25 inch [31.75 mm][.]” Ex-1006, 5:47-49. Murray therefore discloses a range of flat widths of 27.94 mm to 38.1 mm, which is within the claimed range, a narrower range of 31.75 mm to 35.306 mm, which is within the claimed range, and an embodiment where the flat width is 31.75 mm, which is within the claimed range.

69. Moreover, a POSA would have known that the ranges taught by Hernandez and Murray could be adjusted to adjust standout, and a POSA would have known how to adjust the disclosed ranges. As Murray expressly explains, “one skilled in the art will understand that the **length of the blade standout depends on many factors**, including (but not limited to) **blade width** (i.e. the transverse width of the blade measured **when the blade is in its flattened condition** shown, for example in FIG. 8 and designated F); the height of the blade 16 in the concavo-convex configuration (designated H in FIG. 7); blade thickness (designated T in FIG. 7); and geometry of the blade transverse cross-section when in the same is in its normal concavo-convex than configuration.” *Id.* at 5:21-30. Murray further discloses, “[g]reater degrees of standout with a comparable percentage of linear to arcuate length-out can be achieved by making the blade wider.” *Id.* at 7:40-42. More specifically, this increased flattened width allows the non-flattened blade height to be greater—an elementary concept familiar to a POSA for decreasing bending deflection in long slender beams. *Id.* at 7:45-50. In my view, a POSA would have

understood how standout is affected by blade flat width, and that they could affect the standout of the blade by using an increased flat width to bolster the blade's curved height. In other words, a POSA would have understood that blade flat width is result-effective.

70. A POSA would have been motivated to adjust the blade flat width so as to arrive at the claimed range by their desire to increase the standout of the blade, while also understanding that making the blade too wide could result in making the housing too large, negatively impacting the comfort and usability of the tape measure, causing flattening to become too difficult, or making the tape measure too heavy thereby also leading to discomfort and extra effort in reeling in or deployment. as expressly taught by Hernandez and Murray. Ex-1005, 1:29-41, 4:50-51; Ex-1006, 1:10-12, 1:34-37, 2:19-26, 3:16-20, 5:20-30, 7:40-42, 8:6-23, 8:57-65, 11:6-22. Murray discloses that “[o]ne of the most desirable characteristics commercial rule assemblies can possess is a relatively long blade standout.” Ex-1006, 1:10-12. Hernandez further teaches that “it is desirable that an extended portion of the elongated blade be as linear as possible.” Ex-1005, 1:28-32. Moreover, a POSA would have understood that a blade having dimensions within the broadest ranges taught by Murray is within the claimed range and would result in a blade standout in the range of up to 13 feet. *See, e.g.*, Ex-1006, 5:51-62. Murray further teaches that it is undesirable to have “a housing assembly footprint that is too large to fit

comfortably within the average user's hand.” Ex-1006, 8:57-65. As such, a POSA would not only have understood that the flat width of a blade could be modified, and that such modifications would have affected the length of blade standout, but would have also been motivated to adjust the flat width of the blade in order to achieve their desired standout.

71. As I discuss in the motivation to combine section, a POSA would be motivated to modify the Hernandez's tape measure in light of Murray's teachings so as to arrive at the claimed range by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures with increased standout. In addition, a POSA would have understood that Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

72. In my opinion, a POSA would also expect to have a high degree of success. First, Hernandez and Murray expressly point to blade flat widths for increasing standout in tape measures. Second, as I described above, POSAs had long known how a blade's curvature and flat width impacted standout and how to successfully adjust those parameters to achieve their desired standout, including how to adjust those parameters relative to each other. *Supra* §III. These would also be

straightforward adjustments and a POSA would have reasonably expected that tape measures with the claimed flat widths would work as intended (i.e., have an increased standout).

(4) “a curved width, wherein the curved width is less than the flat width; and” [1K]

73. In my opinion, Hernandez, alone or in combination with Murray, discloses and/or renders limitation [1K] obvious for the reasons I explain in §VI.1.a(1), above.

(5) “a curved height between 8.5 mm and 9.5 mm;” [1L]

74. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [1L] obvious.

75. Hernandez describes a curved height, wherein the curved height can range “from about 0.125 inch [3.175 mm] to about 0.500 inch [12.7 mm][.]” Ex-1005, 4:41-42. Hernandez therefore discloses a range of curved heights of 3.175 mm to 12.7 mm, which encompasses the claimed range.

76. Murray which also discloses an elongated metal blade with a curved height, which can range from “approximately 0.25 inch [6.35 mm] to approximately 0.40 inch [10.16 mm][.]” Ex-1006, 5:30-35. Further, Murray discloses a curved height, wherein the curved height can also range more specifically from about “approximately 0.30 inch [7.62 mm] to approximately 0.35 inch [8.89 mm][.]” Ex-

1006, 5:38-46. And Murray also discloses an embodiment wherein the curved height “is approximately 0.32 inch [8.128 mm][.]” Ex-1006, 5:47-49. Murray therefore discloses a range of curved heights of 6.35 mm to 10.16 mm, which encompasses the claimed range, and a narrower range of 7.62 mm to 8.89 mm, which overlaps the claimed range.

77. A POSA would have known that the ranges taught by Hernandez and Murray could be adjusted to adjust standout, and a POSA would have known how to adjust the disclosed ranges. Murray explains, “one skilled in the art will understand that the **length of the blade standout depends on many factors**, including (but not limited to) blade width (i.e. the transverse width of the blade measured when the blade is in its flattened condition shown, for example in FIG. 8 and designated F); the **height of the blade 16 in the concavo-convex configuration** (designated H in FIG. 7); blade thickness (designated T in FIG. 7); and geometry of the blade transverse cross-section when in the same is in its normal concavo-convex than configuration.” *Id.* at 5:21-30. In my opinion, a POSA would have known and understood that standout is affected by the curved height, and that they could affect the standout of the blade by adjusting the curved height. In other words, a POSA would have understood that curved height is result-effective.

78. A POSA would have been motivated to adjust the curved height so as to arrive at the claimed range by their desire to increase the standout of the blade.

For example, Murray teaches that “[o]ne of the most desirable characteristics commercial rule assemblies can possess is a relatively long blade standout.” Ex-1006, 1:10-12; *see also id.* at 1:34-37, 2:20-26, 3:16-20, 5:20-30. Murray also teaches that by increasing the flat width of the blade, the curved blade height can be increased so as to increase standout without any changes to the curvature of the cross section. Ex-1006, 7:45-50. And Hernandez further teaches that “it is desirable that an extended portion of the elongated blade be as linear as possible.” Ex-1005, 1:28-32. Murray also teaches that it is undesirable to have “a housing assembly footprint that is too large to fit comfortably within the average user’s hand.” Ex-1006, 8:57-65.

79. As I discuss in the motivation to combine section, a POSA would be motivated to modify the Hernandez’s tape measure in light of Murray’s teachings so as to arrive at the claimed range by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures with increased standout. In addition, a POSA would have understood that Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

80. In my opinion, a POSA would also expect to have a high degree of success. Hernandez and Murray both expressly point to blade curved heights for increasing standout in tape measures. As I described above, POSAs had long known how a blade's curvature, including curved height, impacted standout and how to successfully adjust those parameters to achieve their desired standout. *Supra* §III. These would also be straightforward adjustments and a POSA would have reasonably expected that tape measures with the claimed curved widths would work as intended (i.e., have an increased standout). For example, Murray expressly teaches that “a blade construction having dimensions within the broadest ranges,” i.e., up to 10.16 mm curved height, results in a blade standout of up to approximately 13 feet (156 inches), while further teaching that a blade “having dimensions within the more preferred narrower ranges,” i.e., up to 8.89 mm curved height, results in a blade standout of up to approximately 12.5 feet (150 inches). Ex-1006, 5:30-62. In other words, Murray expressly provides guidelines for a POSA to follow in making these straightforward adjustments to arrive at their desired standout.

(6) “wherein a standout distance of the elongate blade from the housing is greater than 150 inches; and” [10]

81. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [10] obvious.

82. As discussed above in Section VI.2.a(2), Hernandez discloses tape measures comprising “a standout arcuate length of at least ten feet.” Ex-1005, 4:47-50, 1:31-34. Murray further discloses a standout length of “up to approximately 13 feet [156 inches].” Ex-1006, 5:49-51, 5:51-62, 11:6-10.

83. A POSA would have been motivated to achieve a standout of “greater than 150 inches.” For example, Murray teaches that “[o]ne of the most desirable characteristics commercial rule assemblies can possess is a relatively long blade standout.” Ex-1006, 1:10-12; *see also id.* at 1:34-37, 2:20-26, 3:16-20, 5:20-30. Further, as Hernandez explains, “benefits of [its] invention include, but are not limited to, providing a tape measure blade having a cross-sectional configuration that resists bending[.]” Ex-1005, 1:55-60, 1:28-41.

84. As I discuss in the motivation to combine section, a POSA would be motivated to modify the Hernandez’s tape measure in light of Murray’s teachings so as to arrive at the claimed range by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures with increased standout. In addition, a POSA would have understood that Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

85. In my opinion, a POSA would also expect to have a high degree of success. For example, Murray expressly discloses embodiments with a stand-out greater than 150 inches (12.5 feet). Further, as discussed, POSAs had long known how blade stand-out could be increased by adjusting a blade's thickness, flat width, and curved profile. *Supra* §III. Moreover, these would be straightforward adjustments and a POSA would have reasonably expected that tape measures with the claimed range would work as intended (i.e., have an increased stand-out).

b. Claim 6

(1) “wherein the flat width is 32 mm.” [6A]

86. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [6A] obvious.

87. Hernandez discloses a range of flat widths of 25.4 mm to 41.275 mm, which includes a flat width of 32 mm. *Supra* §VI.2.a(3). And Murray discloses a range of flat widths of 27.94 mm to 38.1 mm, and a narrower range of 31.75 mm to 35.306 mm, both of which include a flat width of 32 mm. *Id.* In my opinion, arriving at 32 mm would be a matter of routine optimization. *Id.* A POSA would have been motivated to adjust the blade's flat width so as to arrive at the claimed value by their desire to increase the stand-out of the blade, as I explained above. *Supra* §VI.2.a(3); Ex-1005, 1:29-41; Ex-1006, 1:10-12, 1:34-37, 2:19-26, 3:16-20, 5:20-30, 5:51-62, 7:40-42.

88. Additionally, Murray discloses an embodiment wherein “the blade 16 width is approximately 1.25 inch[es] [31.75 mm][.]” Ex-1006, 5:47-49. In my opinion, a POSA would have been motivated to adjust Murray’s blade flat width of 31.75 mm (1.25 inches) so as to arrive at the claimed value by their desire to increase the standout of the blade while also understanding that making the blade too wide could result in making the housing too large, negatively impacting the comfort and usability of the tape measure, causing flattening to become too difficult, or making the tape measure too heavy thereby also leading to discomfort and extra effort in reeling in or deployment. as expressly taught by Hernandez and Murray, as expressly taught by Hernandez and Murray. Ex-1005, 1:29-41, 4:50-51; Ex-1006, 1:10-12, 1:34-37, 2:19-26, 3:16-20, 5:20-30, 5:51-62. For example, Murray discloses that “[g]reater degrees of standout with a comparable percentage of linear to arcuate length-out can be achieved by making the blade wider.” *Id.* at 7:40-42. Murray further teaches that it is undesirable to have “a housing assembly footprint that is too large to fit comfortably within the average user’s hand.” Ex-1006, 8:57-65.

89. A POSA would have understood that the claimed value is within the broader range that is taught by Murray and would result in a blade standout of up to 13 feet. *See, e.g.*, Ex-1006, 5:47-62. As such, a POSA would not only have understood that the flat width of a blade could be modified, and that such modifications would have affected the length of blade standout, but would have also

been motivated to adjust the flat width of the blade in order to achieve their desired standout.

90. As I discuss in the motivation to combine section, a POSA would be motivated to incorporate the teachings of Murray to adjust Hernandez's tape measure so as to arrive at the claimed value by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures with increased standout. In addition, Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

91. In my opinion, a POSA would also expect to have a high degree of success. First, Hernandez and Murray expressly point to blade flat widths for increasing standout in tape measures. Second, Murray specifically discloses an embodiment wherein “the blade 16 width is approximately 1.25 inch [31.75 mm][.]” Ex-1006, 5:47-49. Third, as I described above, POSAs had long known how a blade's curvature and flat width impacted standout and how to successfully adjust those parameters to achieve their desired standout, including how to adjust those parameters relative to each other. *Supra* §III. These would also be a straightforward

adjustment and a POSA would have reasonably expected that tape measures with the claimed flat width would work as intended (i.e., have an increased standout).

c. Claim 7

(1) “wherein the curved width is less than 26 mm.”
[7A]

92. In my opinion, Hernandez, alone or in combination with Murray, renders limitation [7A] obvious.

93. Hernandez discloses a range of curved widths of 23.498 mm to 31.750 mm, which includes curved widths of less than 26 mm. *Supra* §VI.1.a(1). In my opinion, arriving at a curved width less than 26 mm would be a matter of routine optimization. *Id.* A POSA would have been motivated to adjust the blade curvature and flat width so as to arrive at the claimed value by their desire to increase the standout of the blade, as I explained above. *Supra* §§VI.1.a(1), VI.2.a(3); Ex-1005, 1:28-31; Ex-1006, 1:34-37, 5:20-65, 7:45-50.

94. Additionally, Murray discloses that “[w]hen the preferred 1.25 inch [31.75 mm] blade (flat width F) is in its concavo-convex cross-sectional configuration ... the curved or arcuate width W is approximately 1.018 inches [25.857 mm].” Ex-1006, 7:58-62. In my opinion, a POSA would have been motivated to adjust Murray’s blade curved width of 25.857 mm so as to arrive at the claimed value by their desire to increase the standout of the blade, as expressly taught by Hernandez and Murray. Ex-1005, 1:29-41; Ex-1006, 1:10-12, 1:34-37, 2:19-26,

3:16-20, 5:20-65, 7:40-50; *supra* §§VI.1.a(1), VI.2.a(3), VI.2.a(5). For example, Murray discloses that “[i]t can be understood by one skilled in the art that the 1.25 inch [31.75 mm] blade width of a preferred embodiment of the assembly 10 allows the blade height H to be increased without increasing the overall blade curvature[.]” Ex-1006, 7:45-50.

95. A POSA would have understood that curvature, including curved width, and flat width affect standout, and the claimed value is within the broadest ranges that is taught by Murray and would result in a blade standout of up to 13 feet. *See, e.g.*, Ex-1006, 5:47-62. Murray also explains “one skilled in the art will understand that the length of the blade standout depends on many factors, including (but not limited to) ... the geometry of the blade transverse cross-section configuration[.]” Ex-1006, 5:20-30. As such, a POSA would not only have understood that the flat width of a blade could be modified without increasing the curved width, and that such modifications would have affected the length of blade standout, but would have also been motivated to increase the flat width without increasing the curved width of the blade in order to achieve their desired standout.

96. As I discuss in the motivation to combine section, a POSA would be motivated to modify the Hernandez’s tape measure in light of Murray’s teachings so as to arrive at the claimed value by their desire to increase the standout of the blade. *Infra* §VI.2.d. At a minimum, Hernandez and Murray both relate to tape measures

with increased standout. In addition, a POSA would have understood that Hernandez expressly identifies Murray as an example of prior art tape measures providing foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are relevant to the improvements described in the Hernandez. *Id.*; *supra* §V.2.

97. In my opinion, a POSA would also expect to have a high degree of success. First, Hernandez and Murray expressly point to adjusting parameters such as blade flat widths and curved heights, without increasing curved widths, for increasing standout in tape measures. Second, Murray specifically discloses, “[w]hen the preferred 1.25 inch [31.75 mm] blade (flat width F) is in its concavo-convex cross-sectional configuration ... the curved or arcuate width W is approximately 1.018 inches [25.857 mm].” Ex-1006, 7:58-62. Third, as I described above, POSAs had long known how a blade’s curvature and flat width impacted standout and how to successfully adjust those parameters to achieve their desired standout, including how to adjust those parameters relative to each other. *Supra* §III. These would also be a straightforward adjustment and a POSA would have reasonably expected that tape measures with the claimed flat width would work as intended (i.e., have an increased standout).

**d. Motivation to Combine and Expectation of Success
Combining Hernandez and Murray**

98. Hernandez relates to a tape measure having an elongated blade. *See generally*, Ex-1005. Hernandez describes the desirability that the extended portion of the elongated blade be as linear as possible with increased standout. *Id.* at 1:21-31. For example, Hernandez discloses that “[t]he extended portion 60 of the elongated blade 20 may have a standout arcuate length of at least ten feet with a horizontal linear length greater than ninety-seven percent of the standout arcuate length.” *Id.* at 4:27-56. Hernandez also discloses “[t]he extended portion 60 of the blade 20 ha[ving] a curved cross-section[.]” *Id.* at 4:21-46, 1:34-48.

99. Murray likewise relates to a tape measure with increased blade standout. *See generally*, Ex-1006. Murray also describes the desirability that the extended portion of the elongated blade be as linear as possible, and characteristics and factors that affect blade standout. *E.g.*, Ex-1006, 1:9-37, 2:19-20, 3:16-21, 5:6-30, 5:63-65, 6:24-47, 7:14-17, 7:65-8:5, 11:6-10, 18:64-19:16, Fig. 9.

100. In my opinion, a POSA would have been motivated to combine Hernandez’s teachings with Murray’s teachings to achieve their desire to increase the standout of the blade. Both Hernandez and Murray relate to tape measures, and more particularly, tape measures having increased blade standout. Further, Hernandez incorporates by reference Murray. Hernandez expressly incorporates and references Murray (U.S. Pat. No. 6,324,769) as an example of prior art tape measures disclosing the “desirab[ility] that an extended portion of the elongated blade be as

linear as possible” and in the context of tape measures having “standout arcuate length of at least ten feet.” Ex-1005, 1:3-7, 1:28-48. A POSA having reviewed Hernandez would recognize that Murray provides foundational disclosure interweaving cross-sectional blade geometry, standout performance, and the associated technical challenges—all of which are directly relevant to the improvements described in Hernandez. *Supra* §V.2.

101. Further, commercially relevant market forces would also have led a POSA to combine teachings in the prior art to achieve the benefits of a tape measure with increased standout, a longer life, and easier coiling. A POSA would have known that tape measures with increased standout length had increased usability because customers could measure longer distances and use less effort while doing so. As a result, a POSA would have understood that a tape measure with an increased standout length would be desired by a customer.

102. A POSA would also have had a reasonable expectation of success combining Hernandez’s teachings with Murray’s teachings. Both Hernandez and Murray describe a tape measure. Both also disclose characteristics of the tape blade achieving increased standout. In my opinion, the combination of Hernandez and Murray is merely the combination of known elements to perform their known functions leading to a predictable result. The combination of Hernandez and Murray does not change the key aspects of either reference. In other words, each reference

would work in combination just as they did apart. In my opinion, any remaining work to apply Murray's teachings to Hernandez is within the level of skill of a POSA.

3. Ground 3: Claim 10 of the '067 is Obvious Over Hernandez in View of Gilliam

103. In my opinion, Hernandez in view of Gilliam renders Claim 10 obvious. While I have been asked to provide opinions only on certain limitations, I have reviewed the Petition's mapping of Hernandez and Gilliam to Claim 10 and agree with it. To the extent Hernandez alone does not render obvious certain limitations of Claim 10, Hernandez in view of Gilliam renders these limitations obvious.

a. Claim 10

(1) “wherein $T1+T2+T3$ is between 0.15 mm and 0.5.” [10E]

104. In my opinion, Hernandez in combination with Gilliam renders limitation [10E] obvious.

105. It was well-known that coating tape measures would increase the life of the blade by increasing abrasion resistance and/or providing a low friction surface to aid in coiling the blade. Ex-1009 ¶7; *see also id.* at Abstract, ¶¶3-4, 15, 23; Ex-1006, 2:27-29, 14:4-52, 18:30-32. Gilliam discloses, “[w]hile the base material of the blade is typically metal, the surface of the blade material is rarely bare metal.” Ex-1009 ¶3. Gilliam further discloses a “conventional technique of applying the

polymer coating to the blade material.” *Id.*, ¶5. Gilliam also discloses that “the blade material is **typically** painted, printed with length indicia, and then coated with a polymer coating to improve abrasion resistance and/or reduce friction.” *Id.*, ¶3. In my opinion, a POSA would have understood that applying coatings with thicknesses as taught by Gilliam would increase abrasion resistance and/or provide a low friction surface to aid in coiling the blade.

106. Hernandez and Gilliam disclose the claimed range. Hernandez teaches the first thicknesses (T1) can range “from about 0.0030 inch [0.0762 mm] to 0.0060 inch [0.152 mm].” *Supra* §VI.2.a(1). Gilliam further discloses that the second (T2) and third (T3) thicknesses should be “on the order of 0.001 inches [0.025 mm] or less.” Ex-1009 ¶20; *see also id.*, ¶7. Hernandez in combination with Gilliam therefore teaches ranges for the sum of “T1+T2+T3” that overlaps the claimed range: 0.126 mm [0.076 mm + 0.025 mm + 0.025 mm] to 0.202 mm [0.152 mm + 0.025 mm + 0.025 mm].

107. In my opinion, a POSA would have chosen the thinner coating thickness taught by Gilliam when applying the coating to the upper and lower surfaces of the blade to avoid the need to increase the size of the housing to accommodate a thicker tape and to minimize the weight of the overall device, thereby maximizing comfort. As Murray explains “the footprint of the housing assembly to be made small to be comfortably grippable using one hand.” Ex-1006,

8:55-65; *see also id.* at 9:30-35. This is consistent with the Gilliam teaching that “increasing the coating thickness increases also the space consumed by the coiled blade, thereby deleteriously increasing the overall size of the tape measure.” Ex-1009 ¶4; *see also id.*, ¶14. Thus, a POSA would have understood that increasing or decreasing the coating thickness of the blade (i.e., a thicker tape) would cause the size of the housing to also increase or decrease, respectively. In other words, a POSA would have known that increasing the coating thickness of the blade would adversely increase the size of the tape measure and would have looked to Gilliam for its teachings of thinner blade coatings.

108. As I discuss in the motivation to combine section, *infra* §VI.3.a, a POSA would have been motivated to incorporate Gilliam’s teachings regarding coating tape measure blades in Hernandez’s tape measure blades to increase the life of the blade, and would also expect to have a high degree of success.

**b. Motivation to Combine and Expectation of Success
Combining Hernandez and Gilliam**

109. Hernandez relates to a tape measure having an elongated blade. *See generally*, Ex-1005. Hernandez describes the desirability that the extended portion of the elongated blade be as linear as possible with increased standout. *Id.* at 1:21-31. Hernandez also incorporates Murray, which also relates to a tape measure with increased blade standout. *See generally*, Ex-1006; Ex-1005, 1:5-7, 1:28-31.

Likewise, Murray describes the desirability that the extended portion of the elongated blade be as linear as possible, and characteristics and factors that affect blade standout. *E.g.*, Ex-1006, 1:9-37, 2:19-20, 3:16-21, 5:6-30, 5:63-65, 6:24-47, 7:14-17, 7:65-8:5, 11:6-10, 18:64-19:16, Fig. 9.

110. Further, Murray (and thus Hernandez through its incorporation), discloses that a “blade 16 has a clear film 158 of plastic material adhered to a concave side thereof (FIG. 11) to protect the blade 16 while the same is out of the housing assembly 12 and while the blade 16 is being retracted under the spring force of the spring 32 back into the housing assembly 12.” Ex-1006, 14:4-52; *see also id.*, at 2:27-29, 18:30-32.

111. Gilliam relates to a “methods of coating a tape measure blade.” Ex-1009 ¶6. Gilliam also discloses that “[o]ne of the purposes of applying a coating 34 to the blade 12 is to increase the life of the blade 12.” Ex-1009 ¶23. Gilliam further discloses that the purpose of the polymer coating “is to increase abrasion resistance and/or to provide a low friction surface to aid in coiling the blade 12.” *Id.* ¶15; *see also id.* at Abstract, ¶¶3-4, 15. Gilliam also discloses an embodiment, wherein “a nylon coating is applied to the metallic tape blade, with the coating having a thickness of not more than about 0.001 inches or less per side[.]” *Id.* ¶7.

112. As Gilliam explains, one advantage of the tape measure coating is that it “increase[s] the life of the blade,” while another is “provid[ing] a low friction

surface to aid in coiling the blade 12.” Ex-1009 ¶¶ 15, 23; *see also* Ex-1006, 2:27-29, 14:4-52, 18:30-32 (Murray describing similar advantages). One advantage of Hernandez’s tape measure is that it has increased standout. Ex-1005, 1:55-60, 1:28-35; Ex-1006, 1:10-12. In my view, a POSA would have understood that this combination would increase the usability of the blade. Thus, in my opinion, a POSA would have been motivated to combine the teachings of Hernandez and Gilliam to achieve the benefits of a tape measure with increased standout, a longer life, and easier coiling.

113. Further, commercially relevant market forces would also have led a POSA to combine teachings in the prior art to achieve the benefits of a tape measure with increased standout, a longer life, and easier coiling. A POSA would have known that tape measures with increased standout length had increased usability because customers could measure longer distances and use less effort while doing so. A POSA would have known that a tape measure with a longer life and easier coiling also had increased usability because a customer would be able to use a tape measure for a longer amount of time. As a result, a POSA would have understood that a tape measure with an increased standout length and increased life would be desired by a customer.

114. A POSA would also have had a reasonable expectation of success combining Hernandez’s teachings with Gilliam’s teachings. Both Hernandez and

Gilliam describe a tape measure. Both also disclose a polymer coating on the tape measure. In my opinion, the combination of Hernandez and Gilliam is merely the combination of known elements (i.e., applying a polymer coating to a tape measure achieving increased standout) to perform their known functions leading to a predictable result (a coated blade). The combination of Hernandez and Gilliam does not change the key aspects of either reference. In other words, each reference would work in combination just as they did apart. In my opinion, any remaining work to apply Gilliam's teachings to Hernandez is within the level of skill of a POSA.

VII. NO SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS

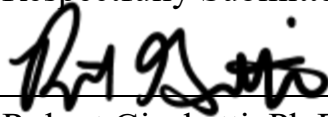
115. As noted above, I understand that certain objective factors called "secondary considerations" should also be considered when determining whether a claimed invention is non-obvious. I am not aware of any secondary considerations here that would show that the Challenged Claims of the '067 patent are non-obvious. To the extent Patent Owner identifies any additional secondary considerations, I reserve the right to analyze and respond to them.

Declaration of Dr. Giachetti for *Inter Partes* Review of U.S. Patent No. 11,656,067

I, Robert Giachetti, declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and 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.

January 26, 2026

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'R. Giachetti', is written over a horizontal line.

Robert Giachetti, Ph.D.