

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MINNESOTA**

Tsteigen, Inc. d/b/a Tec-Spiral; Hongjia
Wang,

Plaintiffs,

v.

Viking Drill & Tool, Inc. a/k/a
Consolidated Toledo Drill,

Defendant.

Case No. 0:21-cv-02759 KMM HB

**PLAINTIFFS TSTEIGEN AND HONGJIA WANG’S RESPONSE TO
DEFENDANT VIKING’S INVALIDITY STATEMENT AND PRIOR ART
CHARTS RE CLAIMS 15, 18, 19, AND 22 OF U.S. PATENT NO. 11,007,583**

Plaintiffs Tsteigen, Inc. and Hongjia Wang’s (collectively, “Tsteigen”) hereby serves their response to Defendant Viking Drill & Tool, Inc.’s (“Viking”) patent invalidity statement and prior art charts regarding newly issued and asserted Claims 15, 18, 19, and 22 of Tsteigen’s U.S. Patent No. 11,007,583 (“the ’583 Patent”).

I. TSTEIGEN’S GENERAL STATEMENTS

Tsteigen incorporates by this reference its general statements concerning its reservation of rights, invalidity legal standards, and person of ordinary skill in the art in its August 19, 2022 amended response to Viking’s invalidity contentions.

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I. TSTEIGEN’S GENERAL STATEMENTS

Tsteigen incorporates by this reference its general statements concerning its reservation of rights, invalidity legal standards, and person of ordinary skill in the art in its August 19, 2022 amended response to Viking’s invalidity contentions.

II. SCOPE AND CONTENT OF VIKING’S ASSERTED PRIOR ART

Tsteigen incorporates by this reference its August 19, 2022 amended response to Viking’s description of the asserted prior art references. Tsteigen adds the following to address the new comments and statements by Viking.

1. U.S. Patent No. 2,193,186 (“Bannister”)

U.S. Patent No. 2,193,186 (“Bannister”) does not have a cone portion as disclosed in the ‘583 Patent and recited in the claims thereof. What Viking annotates on page 24 as a “Cone portion” in Figure 2 of Bannister is a centering tip, not a cone portion. Nor does Bannister disclose cutting tips on a cone portion or cutting tips that are arranged spirally.

2. U.S. Patent Application Publication No. 2005-0053438 (“Wetzel”)

U.S. Patent Application Publication No. 2005-0053438 (“Wetzel”) does not have a cone portion as disclosed in the ‘583 Patent and recited in the claims thereof. What Viking annotates on page 25 as a “Cone portion” in Figure 1 of Wetzel is a centering tip, not a cone portion. Nor does Wetzel disclose cutting tips on a cone portion or cutting tips that are arranged spirally.

3. U.S. Patent Application Publication No. 2011-0116884 (“Li”)

U.S. Patent Application Publication No. 2011-0116884 (“Li”) does not clearly disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. What Viking annotates on page 25 as a “Cylinder portion” in Figure 1 of Li is undefined and fails to show a cylindrical structure. Nor does Li disclose cutting tips that are arranged spirally.

4. U.S. Design Patent No. D840,449 S (“Wang II”)

U.S. Design Patent No. D840,449 S (“Wang II”) does not have a cone portion as disclosed in the ‘583 Patent and recited in the claims thereof. What Viking annotates on page 26 as a “Cone portion” in the design drawing of Wang II does not constitute a cone portion. Nor does Wang II disclose cutting tips on a cone portion or cutting tips that are arranged spirally.

5. G.B. Patent Application Publication No. 2405820 (“Sheldon”)

Great Britain Patent Application Publication No. 2405820 (“Sheldon”) does not disclose either a cone portion or a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Sheldon instead discloses a step drill that is not a cone and that has no cylindrical structure axially fixed to the step drill portion.

6. U.S. Patent No. 5,452,971 (“Nevills”)

U.S. Patent No. 5,452,971 (“Nevills”) does not disclose cutting tips that are arranged spirally.

7. U.S. Patent No. 10,058,929 (“Durfee I”)

U.S. Patent No. 10,058,929 (“Durfee I”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Durfee I instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

8. U.S. Patent No. 9,687,915 (“Durfee II”)

U.S. Patent No. 10,058,929 (“Durfee II”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Durfee II instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

Additionally, Viking does not claim that Durfee II discloses cutting tips that are arranged spirally.

9. U.S. Patent No. 8,029,215 (“Gentry”)

U.S. Patent No. 8,029,215 (“Gentry”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Gentry instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

Additionally, Viking does not claim that Gentry discloses cutting tips that are arranged spirally.

10. U.S. Patent No. 9,731,358 (“Allen”)

U.S. Patent No. 9,731,358 (“Allen”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Allen instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

Additionally, Viking does not claim that Allen discloses cutting tips that are arranged spirally.

11. U.S. Patent No. 4,582,458 (“Korb”)

U.S. Patent No. 4,582,458 (“Korb”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Korb instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

Additionally, Korb does not disclose cutting tips that are arranged spirally.

12. U.S. Patent No. 9,539,653 (“Rogalla”)

U.S. Patent No. 9,539,653 (“Rogalla”) does not disclose cutting tips. Nor does it disclose a cone portion, cutting tips on a cone portion, or cutting tips that are arranged

spirally.

13. U.S. Patent No. 3,592,555 (“Mackey”)

U.S. Patent No. 3,592,555 (“Mackey”) does not disclose cutting tips. Nor does it disclose a cone portion, cutting tips on a cone portion, or cutting tips that are arranged spirally.

14. German Utility Patent No. 202011106232U1 (“Ruko”)

German Utility Patent No. 202011106232U1 (“Ruko”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Ruko instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion. Additionally, Ruko does not disclose cutting tips that are arranged spirally.

15. Chinese Patent Publication No. 102126039 (“Shiqing”)

Chinese Patent Publication No. 102126039 (“Shiqing”) does not clearly disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. What Viking annotates on page 25 as a “Cylinder portion” in the patent drawing of Shiqing is undefined and fails to show a cylindrical structure. Additionally, Shiqing does not disclose cutting tips that are arranged spirally.

16. PCT Application Publication No. 2012/167448 (“Tec-Spiral”)

PCT Application Publication No. 2012/167448 (“Tec-Spiral”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Tec-Spiral instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

17. PCT Application Publication No. 2008/092386 (“Zhang”)

PCT Application Publication No. 2008/092386 (“Zhang”) does not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. Zhang instead discloses a step drill that has no cylindrical structure axially fixed to the step drill portion.

**18. Tool and Manufacturing Engineers Handbook, Vol. 1
 (“Handbook”)**

The Tool and Manufacturing Engineers Handbook, Vol. 1: Machining, Society of Manufacturing Engineers, Dearborn, MI, 1998, Chapter 9 – Drilling, Reaming and Related Processes (“Handbook”) that Viking references on page 35 does not disclose cutting tips. Nor does it disclose a cone portion, cutting tips on a cone portion, or cutting tips that are arranged spirally.

19. Viking’s Drill Nos. 00693, 00694, and 00714

Viking’s Drill Nos. 00693, 00694, and 00714 do not disclose a cylinder portion as disclosed in the ‘583 Patent and recited in the claims thereof. These Viking drill bits instead disclose step drills that have no cylindrical structure axially fixed to the step drill portion. Additionally, they do not disclose cutting tips that are arranged spirally.

III. RESPONSE TO VIKING’S SPECIFIC INVALIDITY CONTENTIONS

A. Viking’s Extraneous Introductory Content Regarding Invalidity

**1. The ’583 Patent Claims 15 and 19 further reciting that the
cylinder portion is longer than the cone portion**

Claims 15 and 19 of the ’583 Patent depend from Claims 1 and 8, respectively,

and further recite that the cylinder portion is longer than the cone portion. Tsteigen objects to Viking's list of prior art references as purported examples of just the one added patent claim element of these two dependent patent claims. Viking then claims that such presence of drill bits in the prior art that have cylinder portions that are longer than the cone portions of the same drill bit render obvious Claims 15 and 19. Viking does so without attempting any showing of motivation to combine. Viking hand waives, ultimately, and baldly states that,

To the extent that a prior art drill did not have a cylinder portion longer than the cone portion, a person of ordinary skill in the art would have known that step drills are not restricted to cutting workpieces that are thinner than the height of a step of the step drill, and would realize that the cylinder portion could be made longer. They would understand that a drill so modified would be effective in accurately drilling into workpieces having a thickness that is greater than the height of a step, and even workpieces whose thickness is greater than the length of the cone portion.

(Viking's Statement, p. 39). Viking, however, shows no instance in the prior art in which this is the case.

Viking cites to Bannister at p. 1, left col., ll. 1-11; Wetzl at ¶ [0008]; and Mackey at 1:46-65, each of which do not have a cone portion but instead discloses merely a centering tip at the front of the drill bit, and cites Li at ¶ [0003]; Nevills at 5:54 – 6:45; and Shiqing at Abstract, each of which discloses decidedly different leading cutting structures, which were addressed during prosecution and found to not support rejection of

the claims on either anticipation or obviousness grounds.

2. The '583 Patent Claims 18 and 22 further reciting that the cutting tips are formed spirally on a cone portion exterior

Claims 18 and 22 of the '583 Patent depend from Claims 1 and 8, respectively, and further recite that the cutting tips are formed spirally on a cone portion exterior. Tsteigen objects to Viking's list of prior art references as purported examples of just the one added patent claim element of these two dependent patent claims. Viking then claims that such presence of drill bits in the prior art that have cutting tips formed spirally on a cone portion exterior render obvious Claims 18 and 22. Viking does so without attempting any showing of motivation to combine.

B. Viking's Specific Contentions of Patent Invalidity Due to Anticipation

In simply two sentences, Viking states its contention that the newly asserted claims are invalid based on anticipation: "As is explained in the accompanying claim charts, all claims of the Patents-in-suit are anticipated by the prior art Matco drills. As is explained in the accompany claim charts, claim 22 of the '583 patent is anticipated by Sheldon." (Viking's Statement, p. 41).

1. Matco

In response to Viking's contention of anticipation based on Matco, Tsteigen contends that Matco does not qualify as prior art to the asserted patent claims in this Action. Tsteigen notes that Viking provided no evidence that Matco had been publicly disclosed, publicly used, or offered for sale before the priority date for the patent claims Tsteigen is asserting in the present patent infringement suit. Should the Court reach a

finding to the contrary, however, Plaintiffs reserve their rights to detail and establish that Matco does not anticipate, render obvious, or otherwise invalidate the specified claims.

2. Sheldon

In response to Viking's contention that Sheldon anticipates claim 22 of the '583 patent, Tsteigen incorporates by this reference each specific statement that it makes in its Exhibit R served concurrently herewith. As to **claim 1 of the '583 patent**, Sheldon discloses composite cutting blade groups that are formed **not spirally**, but straight, or orthogonal, which is evident from its Figures 1, 2A, and 2B, as well as its express purpose stated in its Abstract "to enable the tool to cut more than on diameter of hole." Also, there is no cylinder portion, or the cylinder portion is the small ring axially fixed to the shank -- small in both length and diameter as shown in Sheldon's Figure 1. Either way, the spiral flute does not extend any way up the cylinder portion. See, Figure 1.

As to **claim 22 of the '583 patent**, Sheldon does not disclose either a cone portion or a cylinder portion as disclosed in the '583 Patent and recited in claim 22.

C. Viking's Specific Contentions of Patent Invalidity Due to Obviousness

Immediately following this anticipation contention, Viking professes to satisfy its invalidity contentions based on obviousness by providing "exemplary references and combinations of references" that it then claims "are not exhaustive" and then refers the reader to fill in the gaps with "as explained in the accompanying claim charts" and even "incorporates by reference any combination(s) of references cited in" its July 13, 2022 Statement. (Viking's Statement, p. 41).

Tsteigen responds that, as a threshold matter, this does not comply with the

Court’s May 3, 2022 Case Management Order [Dkt. 21], p. 13, which obligates Viking to provide “a complete and detailed explanation of its allegations with respect to (i) which claim(s) alleged to be infringed are invalid; and (ii) which specific prior art, if any, invalidates each claim....”

1. Matco and Wang I

In any event, to the extent Viking contends all of the newly asserted patent claims are obvious over Matco or Wang I, Tsteigen responds that Matco and Wang I do not qualify as prior art to the asserted patent claims in this Action, as detailed above and in Tsteigen’s previous responses.

2. Sheldon

Viking also contends that Sheldon renders obvious the newly asserted claims. In response, Tsteigen incorporates by this reference each specific statement that it makes in its Exhibit R served concurrently herewith. In sum, as to each of these patent claims, Tsteigen contends that Sheldon does not disclose a twist drill at all, but rather, discloses a step drill, as detailed in Sheldon’s Abstract and Figures 2A and 2B. As to claim 1 of the ’583 patent, Sheldon discloses composite cutting blade groups that are formed not spirally, but straight, or orthogonal, which is evident from its Figures 1, 2A, and 2B, as well as its express purpose stated in its Abstract “to enable the tool to cut more than on diameter of hole.” Also, there is no cylinder portion, or the cylinder portion is the small ring axially fixed to the shank -- small in both length and diameter as shown in Sheldon’s Figure 1. Either way, the spiral flute does not extend any way up the cylinder portion. See, Figure 1.

As to **claims 15 and 19 of the '583 patent**, since Sheldon is as a step drill for drilling holes in thin workpieces, there is no cylinder portion to speak of, let alone one that is longer than the step drill portion, which itself does not constitute a cone portion.

3. Sheldon in combination with one or more of other references

As an alternative, Viking next contends that the claims are obvious over Sheldon in combination with “one or more of” Korb, Wetzl, the Viking 2014 catalog, NAS 907, or the Viking 00693, 00694 or Viking 00714 drills. Claims 4, 9 and 10 of the '584 patent are obvious over Sheldon in combination with one or more of Korb, Wetzl, the Viking 2014 catalog, NAS 907, or the Viking 00693, 00694 or Viking 00714 drills.

This is the sum total of this obviousness contention. As is evident from the bald charge, this does not qualify as a specific contention of obviousness. It lacks any motivation to combine, how the features could combine, or any analysis how the combination would function sufficient to render the referenced patent claims obvious. Accordingly, Tsteigen therefore responds in kind by stating that these combinations would not render a functional drill bit; combining these references with Sheldon in a manner that could approach Mr. Wang's patented invention would be contrary to the stated purpose of Sheldon. Sheldon is a step drill (Abstract, Figures 2A and 2B). Nothing in Sheldon or the other references would motivate a person of ordinary skill in the art to make the combination alleged; and the combinations would not meet all of the patent claim elements of the challenged patent claims.

Additionally, by listing several secondary prior art references in the disjunctive, the contention also does not rise to the level of specificity required by the Court's Case

Management Order, which states, “Defendant must serve ... “a complete and detailed explanation of its allegations with respect to (i) which claim(s) alleged to be infringed are invalid; and (ii) which specific prior art, if any, invalidates each claim....” (Dkt. 21, p. 13).

4. Wang I in combination with one or more of other references

Also, as an alternative, Viking contends the newly cited patent claims are obvious over Wang I “in combination with one or more of Durfee I, Durfee II, Gentry, Allen, Korb, Ruko, Mackey, Wetzl or the Viking 00693, 00694 or 00714 drills.”

This is the sum total of this contention. As is evident from the bald charge, this does not qualify as a specific contention of obviousness. It lacks any motivation to combine, how the features could combine, anything.

Tsteigen contends that Wang I does not qualify as prior art to the asserted patent claims in this Action. Tsteigen notes that Viking provided no evidence that Wang I had been publicly disclosed before the priority date for the patent claims Tsteigen is asserting in the present patent infringement suit. Should the Court reach a finding to the contrary, however, Plaintiffs reserve their rights to detail and establish that Wang I does not anticipate, render obvious, or otherwise invalidate the specified claims.

5. Bannister in combination with other references

Viking contends that the newly asserted claims are obvious over Bannister in combination with one or more of Durfee I, Durfee II, Gentry, Allen, Korb, Ruko Wetzl, Li, Wang I, Shiqing, Tec Spiral, Zhang, Mackey, or the Viking 00693, 00694 or 00714 drills.” This allegation is just a bullet point; it does not constitute actual obviousness

contentions. It lacks any motivation to combine, any analysis of how the features could combine, any evaluation of how the combination would function together sufficient to render the referenced patent claims obvious. Accordingly, Tsteigen therefore responds in kind by stating that these combinations would not render a functional drill bit; combining these references with in a manner that could approach Mr. Wang's patented invention would be contrary to the stated purpose of Bannister. Bannister is a twist drill with a centering top blade. Nothing in Bannister or the other references would motivate a person of ordinary skill in the art to make the combination alleged or otherwise modify Bannister to be configured more like the patented claims; and the combinations would not meet all of the patent claim elements or method steps of the challenged patent claims.

As mentioned above, by listing several secondary prior art references in the disjunctive, these contentions do not rise to the level of specificity required by the Court's Case Management Order, which states, "Defendant must serve ... a complete and detailed explanation of its allegations with respect to: [¶](ii) which specific prior art, if any, invalidates each claim...." (Dkt. 21, p. 13).

6. Li in combination with other references

Viking contends that the newly asserted patent claims are obvious over Li in combination with one or more of Durfee I, Durfee II, Gentry, Allen, Korb, Ruko Wetzl, Wang I, Shiqing, Tec Spiral, Zhang, Mackey, or the Viking 00693, 00694 or 00714 drills. This allegation is, again, just a bullet point; this is not actual obviousness contention. It lacks any analysis of any motivation to combine, any evaluation of how the features could combine, any discussion of how the combination would function together sufficient

to render the referenced patent claims obvious. Accordingly, Tsteigen therefore responds in kind by stating that these combinations would not render a functional drill bit; combining these references with in a manner that could approach Mr. Wang's patented invention would be contrary to the stated purpose of Li. Li is a twist drill with a centering top blade. Nothing in Li or the other references would motivate a person of ordinary skill in the art to make the combination alleged or otherwise modify Bannister to be configured more like the patented claims; and the combinations would not meet all of the patent claim elements or method steps of the challenged patent claims.

Also, they lack the level of specificity required by the Court's Case Management Order. (Dkt. 21, p. 13).

7. Wang II, alone or in combination with other references

Viking contends that the newly asserted patent claims are invalid as obvious over Wang II in combination with one or more of Durfee I, Durfee II, Gentry, Allen, Korb, Ruko, Bannister, Mackey, Zhang, Tec Spiral or the Viking 00693, 00694 or 00714 drills. Just like the foregoing supposed invalidity contentions, above, this is a mere recitation more befitting of a heading of an analysis, not the analysis itself. It is a bald bullet point. The allegation fails to evidence any reasoning, any evaluation of the purported combinations and how they would function. Wang II is a design patent, after all; by definition, it discloses a new, ornamental design. By definition, it contains no suggestion or motivation to combine with any other set of features disclosed elsewhere.

8. Viking Drills in combination with other references

Viking contends that the newly asserted patent claims are invalid as obvious over the Viking 00693, 00694 or 00714 drill in combination with one or more of Bannister, Wetzl, Li, Wang II, Nevills, Mackey, Shiqing, Durfee I, Wang I, Korb, Zhou, Ruko, Tec Spiral, Zhang, and the Handbookin combination with at least one of Bannister, Durfee I, Wetzl, Wang I, Wang II, Korb, CN1021260039, CN103084629, DE202011106232U1, WO2012/167448 and WO2008/092386. These three Viking Drills appear to be merely step drills. No one would be motivated to combine the features of Bannister or of any of the other listed references to arrive at a completely different drill bit with a completely different purpose and functioning.

In sum, these purported obviousness contentions, again, do not rise to the level of an actual obviousness contention. And, by listing several secondary prior art references in the disjunctive, the contention does not even rise to the level of specificity required by the Court's Case Management Order, which states, "Defendant must serve ... a complete and detailed explanation of its allegations with respect to: [¶](ii) which specific prior art, if any, invalidates each claim...." (Dkt. 21, p. 13).

IV. INDICIA OF NON-OBVIOUSNESS AND SECONDARY CONSIDERATIONS

Contrary to Viking's contentions, discovery will reveal considerable indicia of non-obviousness.

Tsteigen's significant commercial success. Tsteigen's patented twist drills are a significant commercial success, leading to widespread copying and infringement, the

success being tied to the patent claim elements.

Evidence of widespread copying, evidence of infringement. Tsteigen's patented twist drills are so innovative and significant of a nonobvious improvement over its contemporaries that it has led to widespread copying and infringement, the widespread copying and evidence of infringement being tied to the unparalleled success of the Hyper-Step drills, which is tied to the patent claim elements.

Evidence of the long-felt, unmet need and failures by others. The prior art is replete with the long-felt, unmet need that was finally achieved by Tsteigen's patented configuration after decades of failure by others.

Tsteigen's patented configuration produces highly unexpected and beneficial results. The results are so unexpected, so far exceeding any expectation of the individual elements separate from the combined whole, that Viking can do nothing but to copy each and every minute detail of Tsteigen's patented configuration. Indeed, even faced with the prospect of a patent infringement suit and patent infringement allegations, Viking and others refuse to reconfigure their imitation twist drills to any non-infringing configuration or any expired prior art configuration, which, by definition, has been dedicated to the public, free to be exercised by anyone.

The nexus between these indicia and the patented configuration. The nexus between these indicia and the patented configuration is evident, for example for the reasons described above, and will be further demonstrated at trial.

V. TSTEIGEN’S PATENT CLAIMS AND SECTION 112

Tsteigen disagrees with each of Viking’s charges that Tsteigen’s newly asserted patent claims are invalid for having one or more patent claim terms that are indefinite.

In particular, the limitation “wherein the cylinder portion is longer than the cone portion” of asserted claims 15 and 19 of the ’583 patent is clear on its face and is shown in Figure 7 of the ’583 patent, as well as described throughout the patent.

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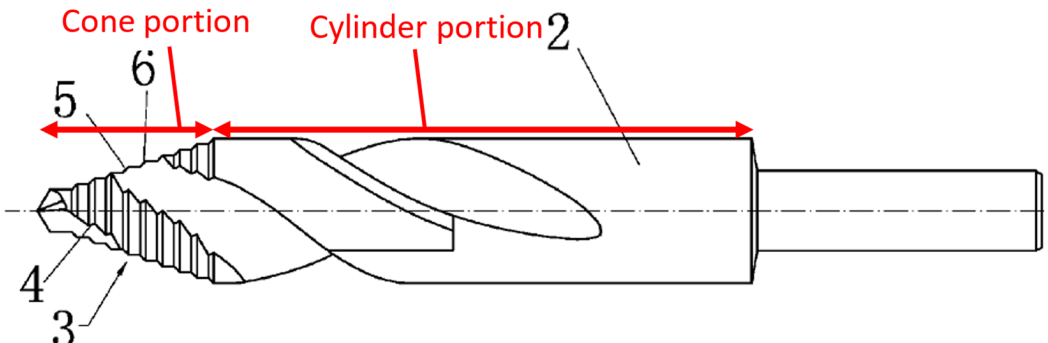
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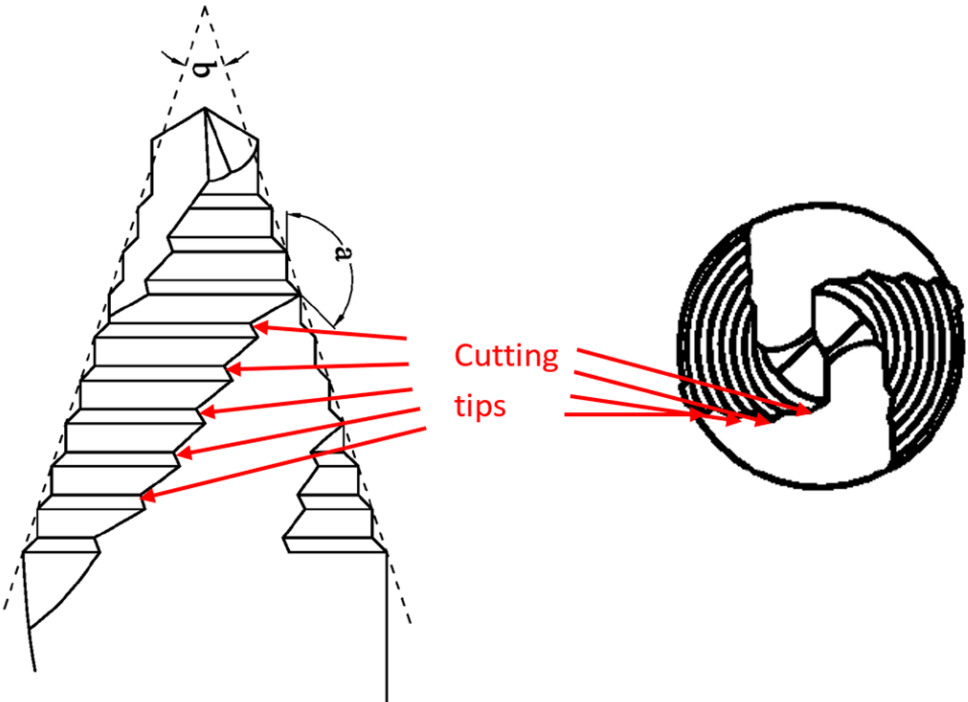
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EXHIBIT J

EXHIBIT J

The '583 Patent		
Claims	Defendant's Contentions Wang I (U.S. Patent App. Pub. No. 2018/0133808)	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	In Wang I, the cylinder portion is longer than the cone portion, as shown in the annotated reproduction of FIG. 5, shown below. 	The Wang I disclosure does not constitute prior art since it does not precede the priority date of Tsteigen's asserted patent claims. Should the Court reach a finding to the contrary, Plaintiffs reserve their rights to detail and establish that Wang I does not anticipate, render obvious, or otherwise invalidate the specified claims.
['583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	Wang I shows the cutting tips of the plurality of composite cutting blade groups formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion. See the annotated reproductions of FIGs. 7 and 8 presented below.	

	 Wang I further teaches this spiral formation of cutting tips of the plurality of cutting blade groups in Paragraphs [0010] and [0035], which state that “connecting lines of the flutes form a spiral structure.”	
[’583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See [’583:15]	
[’583:22] The twist drill of claim 1 wherein the cutting tips of the	See [’583:18]	

plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.		
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EXHIBIT K

EXHIBIT K

The '583 Patent		
Claims	Defendant's Contentions Matco Drills	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	In the Matco drills, the cylinder portion is longer than the cone portion. Cone portion Cylinder portion  Operation portion	Matco does not constitute prior art since it does not precede the priority date of Tsteigen's asserted patent claims. Should the Court reach a finding to the contrary, Plaintiffs reserve their rights to detail and establish that Matco does not anticipate, render obvious, or otherwise invalidate the specified claims.
['583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	In the Matco drills, the cutting tips (T1-T8) of the composite cutting blade groups are formed spirally on cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	

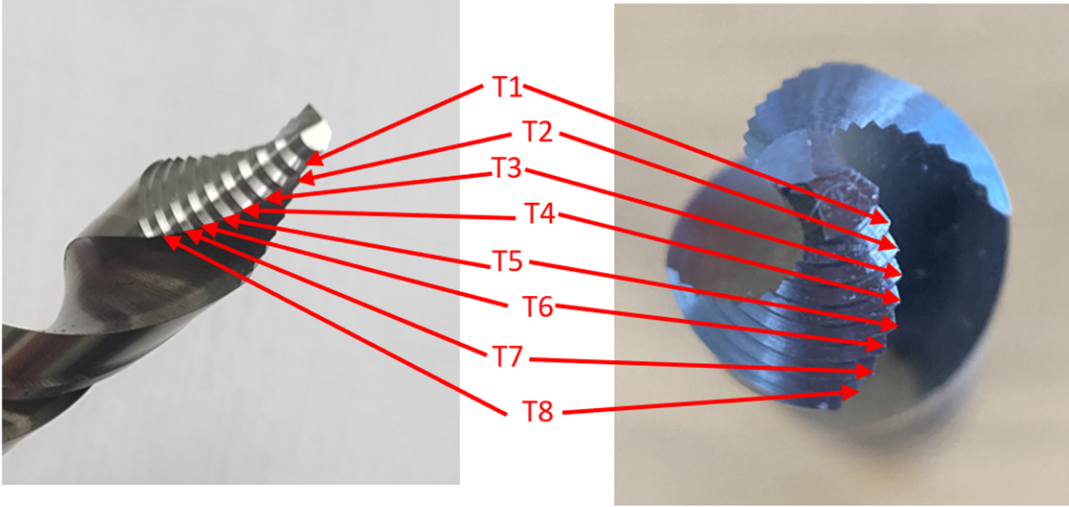
		
[’583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See [’583:15]	
[’583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See [’583:18]	

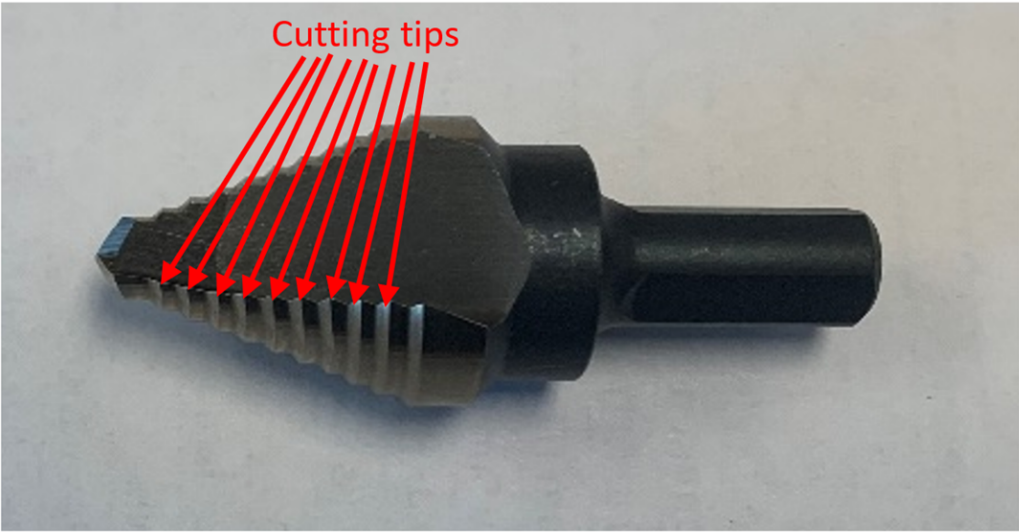
EXHIBIT L

EXHIBIT L

The '583 Patent		
Claims	Defendant's Contentions Viking 00714 drill	Plaintiffs' Response
[’583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	The Viking 00714 drill has a cylinder portion that is shorter than the cone portion. Knowing that step drills are not restricted to cutting workpieces that are thinner than the height of a step of the step drill, however, a person of ordinary skill would realize that the cylinder portion could be made longer. They would understand that a drill modified in this manner would be effective in accurately drilling into workpieces having a thickness that is greater than the height of a step, and even workpieces whose thickness is greater than the length of the cone portion. The person of ordinary skill would also be aware of many different designs of twist drills where the cutting tip had been modified from the conventional chisel tip to provide for improved drilling, with the result that the drill has a cone portion at the tip, followed by a cylinder portion that is longer than the cone portion. Examples of such designs that would be known to a person of ordinary skill include Bannister, FIGs. 1 and 2; Wetzl, FIG. 1; Li, FIG. 1; Wang II, FIGs. 1, 3; Nevills, FIG. 10; Mackey FIG. 4 and Shiqing, FIG. 1. See also the Handbook at FIG. 9-16. The person of ordinary skill would be motivated to make such a modification because the prior art teaches that a drill having a conical portion followed by a longer cylinder portion lead to advantages such as requiring less torque, generating less heat, improved drilling accuracy, easier starting into the workpiece material, effectively clearing the hole of chips, the production of fewer burrs and a better finished hole. See, e.g. Bannister p. 1, left col., ll. 1-11; Wetzl ¶ [0008]; Li ¶ [0003]; Wang II; Nevills, 5:54 –6:45; Mackey 1:46-65; and Shiqing, Abstract. Furthermore, a person of ordinary skill would reasonably understand one or more of these advantages would be achieved by making the modification.	The Viking 00714 appears to be a step drill. It does not have a cylinder portion to speak of. There is no reason for a person of ordinary skill in the art to add a cylinder portion that is longer than the cone portion. Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.

[’583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.

The Viking 00714 drill has cutting tips of the plurality of composite cutting blade groups formed on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion. *See* annotated photo of an exemplary Viking 00714 drill in [’583: 1.a] and below.



It was known that drills could have cutting tips arranged along the edge of a spiral flute. *See e.g.* Durfee I, 1:33-39 and 3:57 – 6:32; Li, FIGs. 1-8; Wang I, FIGs. 5-12 and ¶¶ [31, 32, 35, 36]; Korb, FIGs. 1, 2 and 7, 1:33-35, and 2:37-44. Korb suggests equivalency between a flute cut helically, and a flute cut at about zero degrees to the drill axis. Step drills with helical flutes were also known in Shiqing, FIGs. 1-5; Ruko, FIG. 1; Tec Spiral FIGs. 1-2; and Zhang, FIG. 1.

It would have been obvious to one of ordinary skill to modify the straight flute of the Viking 00714 drill to a spiral flute, in which case the cutting tips of the modified drill would be formed spirally. Spiral flutes are known to be easier, quicker and less expensive to manufacture in a drill than a straight flute, which

The Viking 00714 drill has cutting tips that are formed in what appears to be a straight pattern, not spirally.

Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.

	would result in the cutting tips of the Viking 00714 drill being formed spirally on the cone portion exterior as claimed.	
['583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See ['583:15]	See [Tsteigen's response to Viking's '583:15]
['583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See ['583:18]	See [Tsteigen's response to Viking's '583:18]

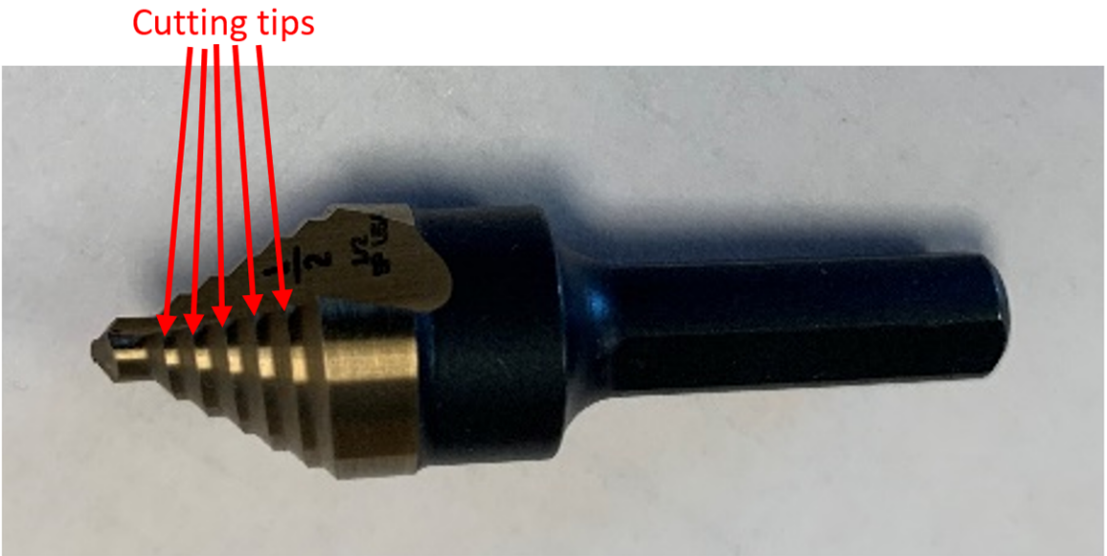
EXHIBIT M

EXHIBIT M

The '583 Patent		
Claims	Defendant's Contentions Viking 00693 drill	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	The Viking 00693 drill has a cylinder portion that is shorter than the cone portion. Knowing that step drills are not restricted to cutting workpieces that are thinner than the height of a step of the step drill, however, a person of ordinary skill would realize that the cylinder portion could be made longer. They would understand that a drill modified in this manner would be effective in accurately drilling into workpieces having a thickness that is greater than the height of a step, and even workpieces whose thickness is greater than the length of the cone portion. The person of ordinary skill would also be aware of many different designs of twist drills where the cutting tip had been modified from the conventional chisel tip to provide for improved drilling, with the result that the drill has a cone portion at the tip, followed by a cylinder portion that is longer than the cone portion. Examples of such designs that would be known to a person of ordinary skill include Bannister, FIGs. 1 and 2; Wetzl, FIG. 1; Li, FIG. 1; Wang II, FIGs. 1 and 3; Nevills, FIG. 10; Mackey, FIG. 4; and Shiqing, FIG. 1. <i>See also</i> the Handbook at FIG. 9-16. The person of ordinary skill would be motivated to make such a modification because the prior art teaches that a drill having a conical portion followed by a longer cylinder portion leads to advantages such as requiring less torque, generating less heat, improved drilling accuracy, easier starting into the workpiece material, effectively clearing the hole of chips, the production of fewer burrs and a better finished hole. See, e.g. Bannister p. 1, left col., ll. 1-11; Wetzl ¶ [0008]; Li ¶ [0003]; Wang I ¶ [0013]; Nevills 5:54 – 6:45; Mackey 1:46-65; and Shiqing, Abstract. Furthermore, a person of ordinary skill would reasonably understand one or more of these advantages would be achieved by making the modification.	The Viking 00693 appears to be a step drill. It does not have a cylinder portion to speak of. There is no reason for a person of ordinary skill in the art to add a cylinder portion that is longer than the cone portion. Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.

[’583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.

The Viking 00693 drill has cutting tips of the plurality of composite cutting blade groups formed on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion. *See* annotated photo of an exemplary Viking 00693 drill in [’583: 1.a] and below.



It was known that drills could have cutting tips arranged along the edge of a spiral flute. *See e.g.* Durfee I, 1:33-39 and 3:57 – 6:32; Li, FIGs. 1-8; Wang I, FIGs. 5-12 and ¶¶ [31, 32, 35, 36]; Korb, FIGs. 1, 2 and 7, 1:33-35, and 2:37-44. Korb suggests equivalency between a flute cut helically, and a flute cut at about zero degrees to the drill axis. Step drills with helical flutes were also known from Shiqing, FIGs. 1-5; Ruko, FIG. 1; Tec Spiral FIGs. 1-2; and Zhang, FIG. 1.

It would have been obvious to one of ordinary skill to modify the straight flute of the Viking 00694 drill to a spiral flute, in which case the cutting tips of the modified drill would be formed spirally. Spiral flutes are known to be easier, quicker and less expensive to manufacture in a drill than a straight flute, which

The Viking 00693 drill has cutting tips that are formed in what appears to be a straight pattern, not spirally.

Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.

	would result in the cutting tips of the Viking 00693 drill being formed spirally on the cone portion exterior as claimed.	
[’583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See [’583:15]	See [Tsteigen’s response to Viking’s ’583:15]
[’583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See [’583:18]	See [Tsteigen’s response to Viking’s ’583:18]

EXHIBIT N

EXHIBIT N

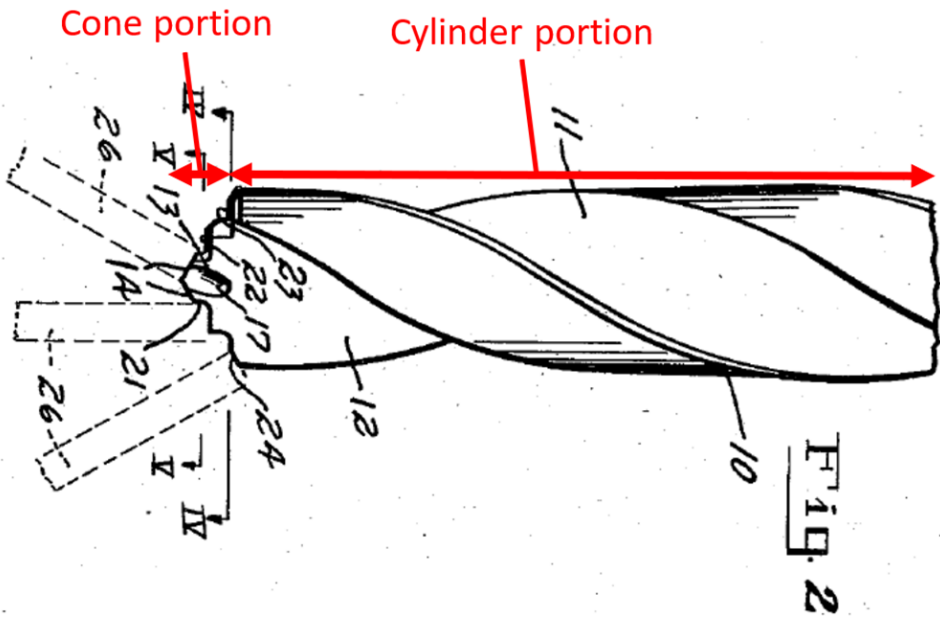
The '583 Patent		
Claims	Defendant's Contentions Viking 00694 drill	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	The Viking 00694 drill has a cylinder portion that is shorter than the cone portion. Knowing that step drills are not restricted to cutting workpieces that are thinner than the height of a step of the step drill, however, a person of ordinary skill would realize that the cylinder portion could be made longer. They would understand that a drill modified in this manner would be effective in accurately drilling into workpieces having a thickness that is greater than the height of a step, and even workpieces whose thickness is greater than the length of the cone portion. The person of ordinary skill would also be aware of many different designs of twist drills where the cutting tip had been modified from the conventional chisel tip to provide for improved drilling, with the result that the drill has a cone portion at the tip, followed by a cylinder portion that is longer than the cone portion. Examples of such designs that would be known to a person of ordinary skill include Bannister, FIGs. 1 and 2; Wetzl, FIG. 1; Li, FIG. 1; Wang II, FIGs. 1, 3; Nevills, FIG. 10; Mackey FIG. 4 and Shiqing, FIG. 1. <i>See also</i> The Handbook at FIG. 9-16. The person of ordinary skill would be motivated to make such a modification because the prior art teaches that a drill having a conical portion followed by a longer cylinder portion lead to advantages such as requiring less torque, generating less heat, improved drilling accuracy, easier starting into the workpiece material, effectively clearing the hole of chips, the production of fewer burrs and a better finished hole. <i>See, e.g.</i>, Bannister, p. 1, left col., ll. 1-11; Wetzl, ¶ [0008]; Li, ¶ [0003]; Wang II; Nevills, 5:54–6:45; Mackey, 1:46-65; and Shiqing, Abstract. Furthermore, a person of ordinary skill would reasonably understand one or more of these advantages would be achieved by making the modification.	The Viking 00694 appears to be a step drill. It does not have a cylinder portion to speak of. There is no reason for a person of ordinary skill in the art to add a cylinder portion that is longer than the cone portion. Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
['583:18] The twist drill of claim 8 wherein the cutting tips of the	The Viking 00694 drill has cutting tips of the plurality of composite cutting blade groups formed on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion. <i>See</i> annotated photo of an exemplary Viking 00694 drill in ['583: 1.a] and below.	The Viking 00694 drill has cutting tips that are formed in what appears to be a straight pattern, not spirally.

plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	Cutting tips  It was known that drills could have cutting tips arranged along the edge of a spiral flute. <i>See e.g.</i> Durfee I, 1:33-39 and 3:57 – 6:32; Li, FIGs. 1-8; Wang I, FIGs. 5-12 and ¶¶ [31, 32, 35, 36]; Korb, FIGs. 1, 2 and 7, 1:33-35, and 2:37-44. Korb suggests equivalency between a flute cut helically, and a flute cut at about zero degrees to the drill axis. Step drills with helical flutes were also known in Shiqing, FIGs. 1-5; Ruko, FIG. 1; Tec Spiral, FIGs. 1-2; and Zhang, FIG. 1. It would have been obvious to one of ordinary skill to modify the straight flute of the Viking 00694 drill to a spiral flute, in which case the cutting tips of the modified drill would be formed spirally. Spiral flutes are known to be easier, quicker and less expensive to manufacture in a drill than a straight flute, which would result in the cutting tips of the Viking 00694 drill being formed spirally on the cone portion exterior as claimed.	Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
[’583:19] The twist drill of claim 1 wherein the cylinder portion is	<i>See</i> [’583:15]	See [Tsteigen’s response to Viking’s ’583:15]

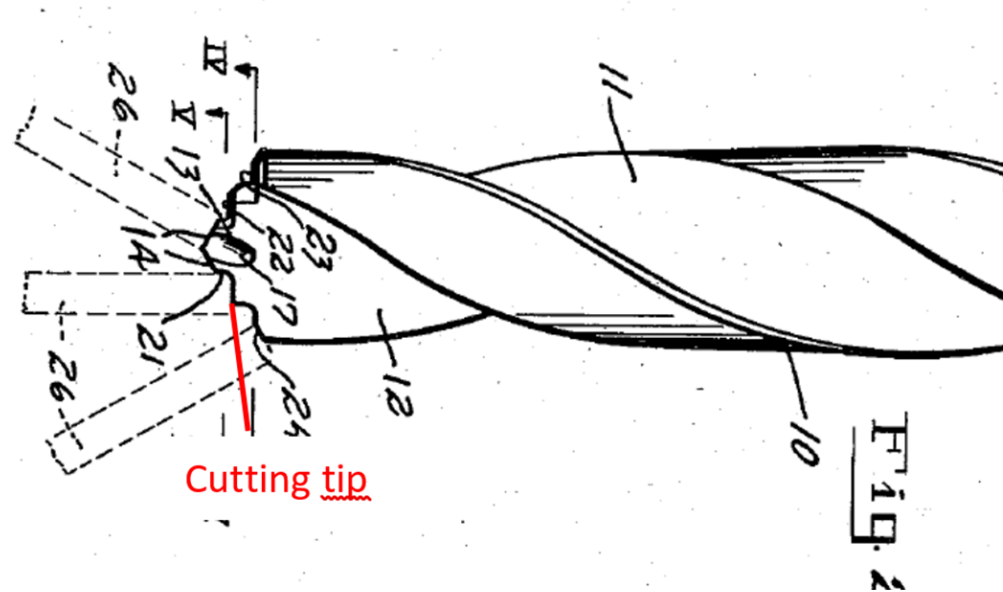
longer than the cone portion.		
[’583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See [’583:18]	See [Tsteigen’s response to Viking’s ’583:18]

EXHIBIT O

EXHIBIT O

The '583 Patent		
Claims	Defendant's Contentions Bannister (U.S. Patent No. 2,193,186)	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	Bannister shows a twist drill in which the cylinder portion is longer than the cone portion, as seen in the annotated reproduction of FIG. 2, below. 	Bannister does not have a cone portion, but rather a center or guide tip. There is no motivation in the prior art to give reason to a person of ordinary skill in the art to add a cone portion. Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
['583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone	Bannister shows a twist drill with a pair of cutting tips between the front tip and the shoulder leading to the cylinder portion.	Bannister drill has a centering cutting tip structure that is formed in what appears to be a straight pattern, not spirally. Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the

portion to a rear end of the cone portion.



Bannister does not, however, limit the disclosure to this arrangement and emphasizes that the drill may include multiple steps: “[w]hile I have illustrated a plurality of steps or series of drilling units, the number will be governed largely by the size of the drill. For example, with drills less than one inch diameter, I preferably grind the point with the central drilling unit and one pair of cutting edges. As the diameter of the drill increases, the number of drill units may be increased.” Bannister, p. 2, right col, l. 70 – p. 3, left col. l. 2.

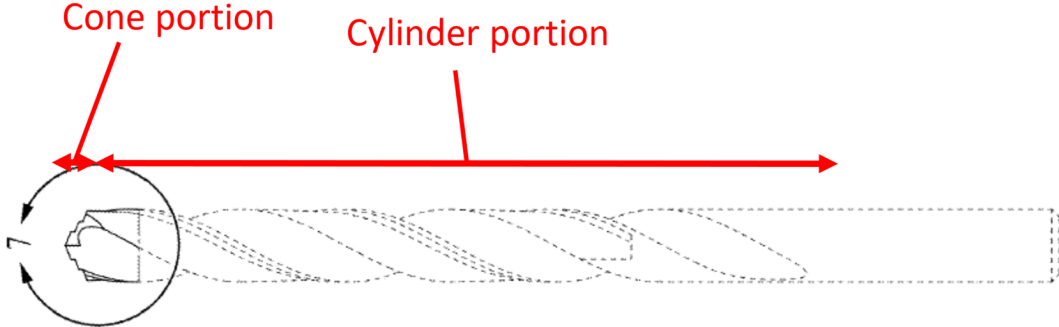
It was known that drills having stepped cutting blades at their front ends could have the cutting tips arranged spirally along the side of the spiral flute. *See e.g.* Durfee I, 1:33-39 and 3:57 – 6:32; Wetzl, FIGs. 1 and 2, and ¶¶ [8, 27, 37, 38, 46-50], Li, FIGs. 1-8; Wang I, FIGs. 5-12 and ¶¶ [31, 32, 35, 36]; Korb, FIGs. 1, 2 and 7, 1:33-35, and 2:37-44. Korb suggests equivalency between a flute cut helically, and a flute cut at about zero degrees to the drill axis. Step drills with helical flutes were also known from Shiqing, FIGs. 1-5; Ruko, FIG. 1; Tec Spiral FIGs. 1-2; and Zhang, FIG. 1.

accused drill bits so as to fall within any public domain safe harbor.

	It would have been obvious to one of ordinary skill to modify Bannister so that the cutting tips of the modified drill would be formed spirally, because spiral flutes are known to be easier, quicker and less expensive to manufacture in a drill than a straight flute.	
[’583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See [’583:15]	See [Tsteigen’s response to Viking’s ’583:15]
[’583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See [’583:18]	See [Tsteigen’s response to Viking’s ’583:18]

EXHIBIT P

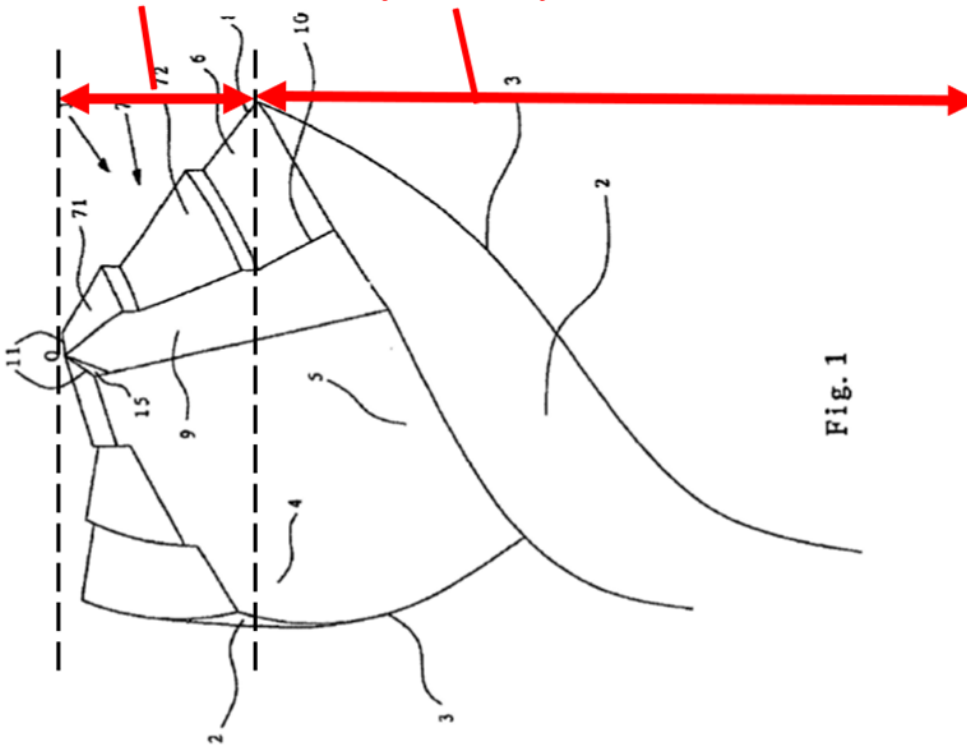
EXHIBIT P

The '583 Patent		
Claims	Defendant's Contentions Wang II (U.S. Design Pat. No. D840,449)	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	Wang II shows a twist drill with a cylinder portion longer than the cone portion, as shown in the annotated reproduction of FIG. 2, below. 	Wang II does not have a cone portion, but rather a center or guide tip. There is no motivation in the prior art to give reason to a person of ordinary skill in the art to add a cone portion. Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
['583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	Wang II does not show or teach that the cutting tips are formed spirally. A person of ordinary skill would know of drills having cutting tips arranged spirally on a cone section. A person of ordinary skill would know of such an arrangement as shown in, for example, Bannister, FIGs. 1 and 2; Durfee I, FIGs. 1 and 2; Korb, FIG. 7; Mackey, FIGs. 2 and 3; Ruko, FIG. 1; Zhang, FIG. 1; and Tec Spiral, FIGs. 1 and 2. A person would have been motivated to modify Wang II's drill because the prior art teaches that a drill having a conical portion with a spiral flute leads to advantages such as requiring less torque, generating less heat, improved drilling accuracy, easier starting into the workpiece material, effectively clearing the hole of chips, the production of fewer burrs and a better finished hole. <i>See, e.g.</i> Bannister p. 1, left col., ll. 1-11; Korb 1:51-60; and Mackey 1:46-65. Furthermore,	Wang II has a centering cutting tip structure that is formed in what appears to be a straight pattern, not spirally. Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.

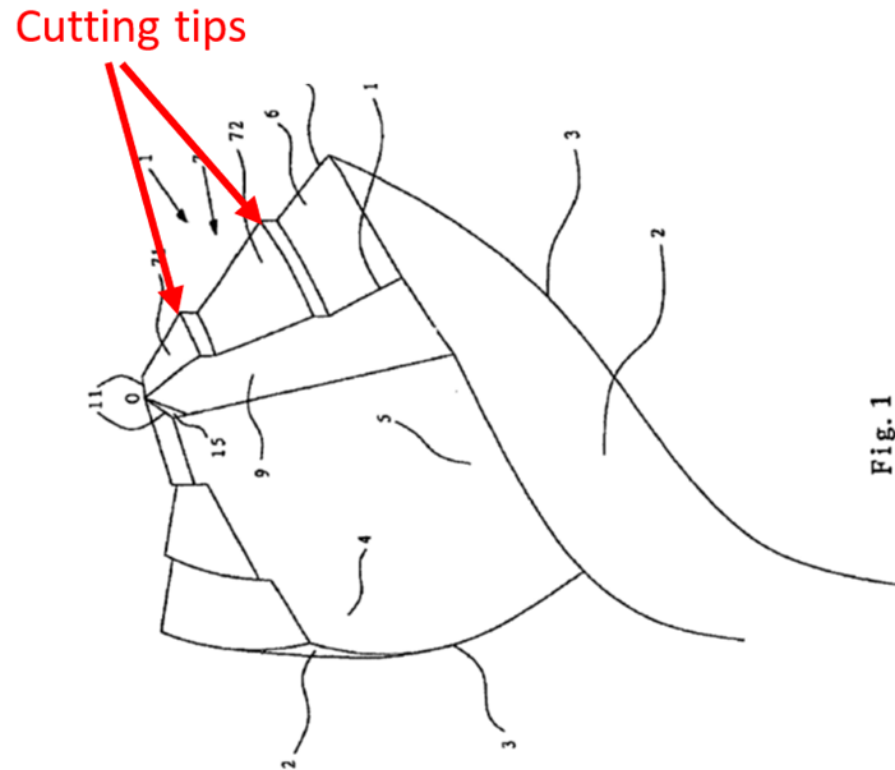
	a person of ordinary skill would reasonably understand one or more of these advantages would be achieved by making the modification.	
['583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See ['583:15]	See [Tsteigen's response to Viking's '583:15]
['583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See ['583:18]	See [Tsteigen's response to Viking's '583:18]

EXHIBIT Q

EXHIBIT Q

The '583 Patent		
Claims	Defendant's Contentions Li (U.S. Pat. App. Pub. No. 2011/0116884)	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	Li shows a drill having a cylinder portion longer than the cone portion, as shown in the annotated reproduction of FIG. 1, below. Cone portion Cylinder portion  Fig. 1	Li does not disclose a cylinder portion, let alone one that is longer than the cone portion. There is no motivation in the prior art to give reason to combine Li with any of the prior art references. Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
['583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite	Li shows cutting tips formed on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion. See the annotated reproduction of FIG. 1 below.	Li discloses what might constitute a pair of cutting tips that are formed in what appears to be a straight pattern, not spirally.

cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.



It was known that drills could have cutting tips arranged along the edge of a spiral flute. See e.g. Durfee I, 1:33-39 and 3:57 – 6:32; Wetzl, FIGs. 1 and 2, and ¶¶ [8, 27, 37, 38, 46-50], Li, FIGs. 1-8; Wang I, FIGs. 5-12 and ¶¶ [31, 32, 35, 36]; Korb, FIGs. 1, 2 and 7, 1:33-35, and 2:37-44. Korb suggests equivalency between a flute cut helically, and a flute cut at about zero degrees to the drill axis. Step drills with helical flutes were also known from Shiqing, FIGs. 1-5; Ruko, FIG. 1; Tec Spiral FIGs. 1-2; and Zhang, FIG. 1.

In view of the art described above, it would have been obvious to one of ordinary skill to modify Li to have the cutting tips arranged spirally to achieve the advantages discussed in the art.

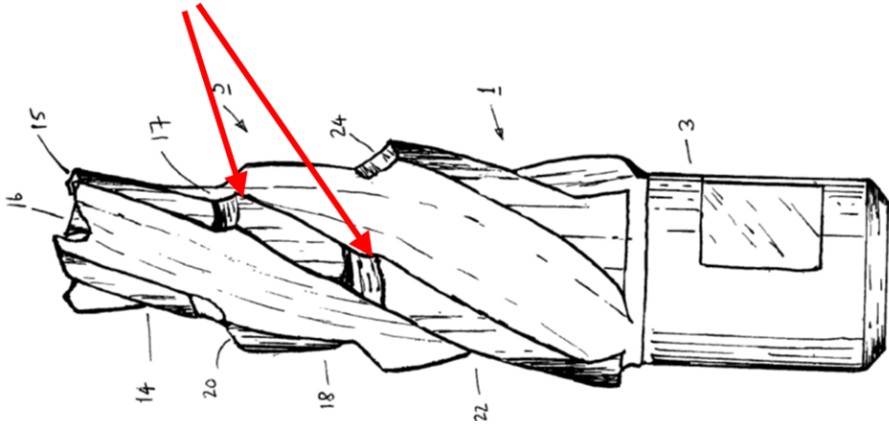
Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.

[’583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See [’583:15]	See [Tsteigen’s response to Viking’s ’583:15]
[’583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	See [’583:18]	See [Tsteigen’s response to Viking’s ’583:18]

EXHIBIT R

EXHIBIT R

The '583 Patent		
Claims	Defendant's Contentions Sheldon (GB 2,405,820A)	Plaintiffs' Response
['583:15] The twist drill of claim 8 wherein the cylinder portion is longer than the cone portion.	Sheldon shows a drill having a cylinder portion that is shorter than the cone portion. Knowing that step drills are not restricted to cutting workpieces that are thinner than the height of a step of the step drill, however, a person of ordinary skill would realize that the cylinder portion could be made longer. They would understand that a drill modified in this manner would be effective in accurately drilling into workpieces having a thickness that is greater than the height of a step, and even workpieces whose thickness is greater than the length of the cone portion.	Sheldon appears to be a step drill. It has neither a cone portion or a cylinder portion. There is no reason for a person of ordinary skill in the art to add a cylinder portion that is longer than the step drill portion.
	The person of ordinary skill would also be aware of many different designs of twist drill where the cutting tip had been modified from the conventional chisel tip to provide for improved drilling, with the result that the drill has a cone portion at the tip, followed by a cylinder portion that is longer than the cone portion. Examples of such designs that would be known to a person of ordinary skill include Bannister, FIGs. 1 and 2; Wetzl, FIG. 1; Li, FIG. 1; Wang II, FIGs. 1 and 3; Nevills, FIG. 10; Mackey FIG. 4 and Shiqing, FIG. 1.	Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
	The person of ordinary skill would be motivated to make such a modification because the prior art teaches that a drill having a conical portion followed by a longer cylinder portion lead to advantages such as requiring less torque, generating less heat, improved drilling accuracy, easier starting into the workpiece material, effectively clearing the hole of chips, the production of fewer burrs and a better finished hole. <i>See, e.g.</i> Bannister, p. 1, left col., ll. 1-11; Wetzl, ¶ [0008]; Li, ¶ [0003]; Wang I, ¶ [0013]; Nevills, 5:54 – 6:45; Mackey, 1:46-65; and Shiqing, Abstract. Furthermore, a person of ordinary skill would reasonably understand one	Sheldon was addressed during prosecution and dealt with there.

	or more of these advantage would be achieved by making the modification.	
[’583:18] The twist drill of claim 8 wherein the cutting tips of the plurality of composite cutting blade groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.	Sheldon discloses that the cutting tips of the plurality of cutting blade groups are formed spirally on the cone portion exterior from a front end of the cone portion to a rear end of the cone portion. See the annotated reproduction of FIG. 1 shown below. Cutting blade tips formed spirally 	Again, Plaintiff and inventor Hongjia Wang was the first to do what Viking claims was obvious. Now, it excels in terms of performance and, consequently, commercial success. Everyone is copying it, and Viking refuses to redesign the accused drill bits so as to fall within any public domain safe harbor.
[’583:19] The twist drill of claim 1 wherein the cylinder portion is longer than the cone portion.	See [’583:15]	See [Tsteigen’s response to Viking’s ’583:15]
[’583:22] The twist drill of claim 1 wherein the cutting tips of the plurality of composite cutting blade	See [’583:18]	See [Tsteigen’s response to Viking’s ’583:18]

groups are formed spirally on a cone portion exterior from a front end of the cone portion to a rear end of the cone portion.		
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PROOF OF SERVICE

I am over the age of eighteen (18) years, employed in the County of Los Angeles, and not a party to the above-entitled action. My business address is 9401 Wilshire Blvd., Ninth Floor, Beverly Hills, CA 90212.

On October 7, 2022, I served the following document:

**PLAINTIFFS TSTEIGEN AND HONGJIA WANG'S RESPONSE TO
DEFENDANT VIKING'S INVALIDITY STATEMENT AND PRIOR
ART CHARTS RE CLAIMS 15, 18, 19, AND 22 OF U.S. PATENT
NO. 11,007,583**

- ☐ **BY SERVICE PROVIDER:** I caused a copy of such document to be sent via electronic service to the addressee(s) shown below using a service provider, such as Express Networks, and:
- ☒ **BY ELECTRONIC MAIL:** I caused a copy of such document to be sent via electronic mail to the addressee(s) shown below:

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I declare, under penalty of perjury under the laws of the United States that the foregoing is true and that I am employed in the office of a member of the Bar of this Court at whose direction the service was made.

Executed on October 7, 2022 at Beverly Hills, California.

/s/Kelly Cunningham
Kelly Cunningham

Desiree Loranger

From: Desiree Loranger
Sent: Friday, October 7, 2022 2:38 PM
To: STrichi@carlsoncaspers.com; mwilliams@carlsoncaspers.com;
DVandenburgh@carlsoncaspers.com; Viking_CCVL@carlsoncaspers.com; ECurtin@ip-firm.com;
HHorrell@greenespel.com; JPaul@greenespel.com; ATobin@greenespel.com
Cc: Kelly Cunningham; Joe Dirkx; Edward Bustillos; Tsteigen-v-Vikinglitgroup
Subject: Tsteigen, Inc., et al. v. Viking Drill & Tool, Inc. [Case No. 0:21-cv-02759 KMM HB]
Attachments: 0-21-cv-02759 - RESP by Tsteigen to Invalidity Stmt 10-7-22.pdf

Dear Counsel:

On behalf of Kelly Cunningham, Esq., attached please find Tsteigen's statement and prior art charts in response to Viking invalidity contentions re the newly issued and asserted patent claims.

If you have any difficulty accessing the attached, please do not hesitate to contact me.

Any reply to the attached should be made directly to Mr. Cunningham.

Regards,

Desiree Loranger

Legal Assistant to Randall S. Leff, Esq. | Russell M. Selmont, Esq. | David N. Tarlow, Esq. | Catherine A. Veeneman, Esq. | Elliot Z. Chen, Esq.

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