Trials@uspto.gov
571-272-7822

Paper: 7
Date: November 21, 2019

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GUARDIAR SOLUTIONS, INC.,
Petitioner,

v.

RSA PROTECTIVE TECHNOLOGIES, LLC,
Patent Owner.

IPR2019-01162
Patent 8,215,865 B2

Before BARRETT, KEN B., PINKERTON, JOHN P., and JAMES J. MAYBERRY, *Administrative Patent Judges.*

MAYBERRY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

Petitioner Guardiar Solutions, Inc. filed a Petition ("Pet.") requesting *inter partes* review of claims 1–35 (the "Challenged Claims") of U.S. Patent No. 8,215,865 B2 (Ex. 1001, the "'865 patent"). Paper 1. Patent Owner, RSA Protective Technologies, LLC, filed a Preliminary Response ("Prelim.

Resp.") to the Petition. Paper 6. We have authority to institute an *inter partes* review under 35 U.S.C. § 314. *See also* 37 C.F.R. § 42.4(a) (permitting the Board to institute trial on behalf of the Director).

To institute an *inter partes* review, we must determine that the information presented in the Petition shows "a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons set forth below, upon considering the Petition, Preliminary Response, and evidence of record, we do not institute an *inter partes* review.

B. Real Parties in Interest

Petitioner identifies itself and Guardiar Corporation, Guardiar USA LLC, Guardiar Europe BVBA, Guardiar South Africa (Pty) Ltd., Praesidiad Group Limited, and Praesidiad Limited as real parties-in-interest. Pet. 1.

C. Related Matters

Petitioner states that the '865 patent is the subject of litigation in the U.S. District Court for the Southern District of Florida in a case styled *RSA Protective Technologies, LLC v. Secure USA, Inc. and Guardiar Solutions Inc.*, Case No. 9:18-cv-81124-RLR (S.D. Fla.). Pet. 1. Petitioner also identifies two lawsuits in the U.S. District Court for the Southern District of New York involving the '865 patent, in cases styled *RSA Protective Technologies, LLC v. MFM Contracting Corp.*, Case No. 1:18-cv-09696-JGK (S.D.N.Y.) and *RSA Protective Technologies, LLC v. Port Authority of N.Y.*, Case No. 1:18-cv-09960-UA (S.D.N.Y.). *Id.* at 1–2. Patent Owner confirms these three proceedings and does not identify any additional matters related to the '865 patent. Paper 4, 1.

D. The ’865 Patent

The ’865 patent, titled “Anti-Ram System and Method of Installation,” issued July 10, 2012 from an application filed January 27, 2010. Ex. 1001, codes (54), (45), (22). The ’865 patent is directed “to the assembly and installation of bollard systems for use in protecting building and other structures from being rammed by vehicles.” *Id.* at 1:40–42. We reproduce Figure 3 from the ’865 patent below.

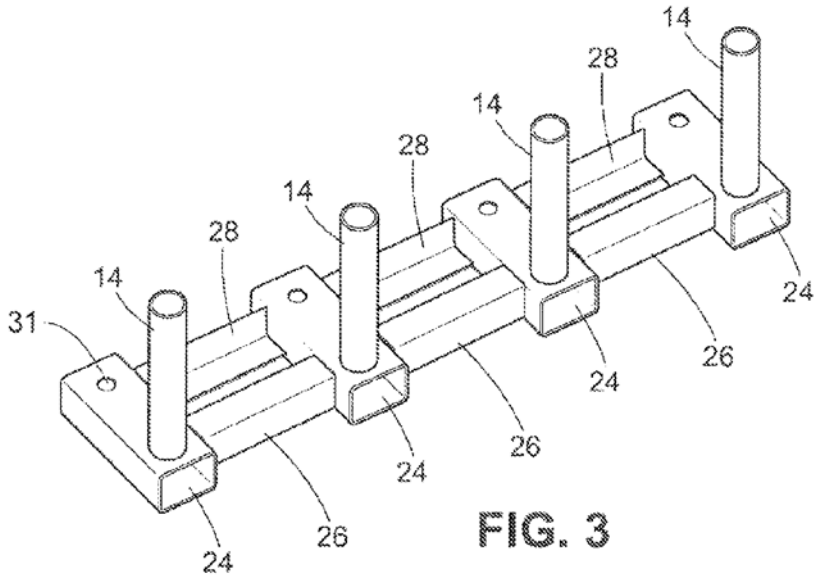

FIG. 3

Figure 3 depicts “an embodiment of th[e] invention with four bollards mounted on the framework for the pad or base of the anti-ram system.” Ex. 1001, 6:1–3. Bollards 14 are mounted on framework 23 for the base, which includes transversely-extending tubular members 24, longitudinally-extending tubular members 26, and longitudinally-extending angular members 28. *Id.* at 7:51–55. Apertures 31 allow the tubular members to be filled with concrete or other material to add strength and weight to the base. *Id.* at 8:7–10. A rebar cage may be added to the base framework. *Id.* at 8:11–16, Fig. 4.

With the bollard system of the ’865 patent, “the striking forces from the crash vehicle are transmitted from the bollard down to the shallow mount pad (5[inches] to 14[inches] in depth) in a way that is different from standard deep trench foundations (4[feet] to 6[feet]).” Ex. 1001, 2:42–45. Also, “[t]he shallow base system makes for a much more effective and efficient load transfer into the soil which reduces the overall volume of displacement of soil by the base, as compared to the standard deep trench foundation systems.” *Id.* at 2:49–52. “In the shallow mount bollard system of [the ’865 patent], the resistive forces are all at the base of the bollard (at the top of the trench) and therefore reduce the likelihood of the bollard rotating and vehicle breaching the security system.” *Id.* at 2:60–64.

E. Illustrative Claims

Of the Challenged Claims, claims 1, 16, and 33 are independent claims. Claim 1, reproduced below, is representative.

> 1. A bollard structure comprising:
> at least one bollard; and
> a base comprising opposed ends and a plurality of structural members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member;
> each bollard being secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard and extending upwardly from the base so as to transmit forces applied to the at least one bollard to the base;
> wherein the base is configured to be mounted in a shallow excavation with the at least one bollard extending above grade; and

> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards.

Ex. 1001, 9:17–41. Claim 16 is similar to claim 1 and recites "a plurality of bollards." *Id.* at 10:5–31. Claim 33 is similar to claims 1 and 16, but adds the requirement that "at least one of the plurality of members that extend parallel to the ends of the base extending between a structural member to which a first bollard is secured and a structural member to which a second bollard adjacent to the first bollard is secured." *Id.* at 11:8–12:13.

F. Prior Art and Asserted Grounds

Petitioner asserts that the Challenged Claims would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	References
1–3, 15–19, 31–35	103	Draht[1]
4, 20	103	Draht and Carlyle[2]
5–14, 21–30	103	Draht and Cold-Formed Steel Design[3]
1–3, 14–19, 30–34	103	Rogers[4]
4, 20	103	Rogers and Carlyle
5–13, 21–29, 35	103	Rogers and Cold-Form Steel Design
35	103	Rogers and Glaesener[5]

[1] Draht, DE 3412354 A1, published Oct. 10, 1985 (Ex. 1016). Exhibit 1017 includes an English translation of Draht, which we refer to in this Decision. Ex. 1018 provides a declaration attesting to the translation.
[2] Carlyle, GB 2229472 A, published Sept. 26, 1990 (Ex. 1011).
[3] Yu, "Cold-Formed Steel Design," John Wiley & Sons, Inc. (3d ed.), published June 12, 2000 (Ex. 1015, "Cold-Formed Steel Design").
[4] Rogers, US 7,040,836 B2, issued May 9, 2006 (Ex. 1010).
[5] Glaesener, US 3,881,697, issued May 6, 1975 (Ex. 1013).

The following subsections provide a brief description of the asserted prior art references.

1. Draht

Draht, titled "Drive-through Prevention Element," published October 10, 1985. Ex. 1017, codes (54), (43). Draht is directed to "a drive-through prevention element . . . that consists of a collision section and a bottom section at angles to each other." *Id.* at code 54. The element tilts when the collision section is struck by a vehicle, such that the vehicle is lifted and cannot drive through the barrier. *Id.* We reproduce Draht's Figure 1, below.

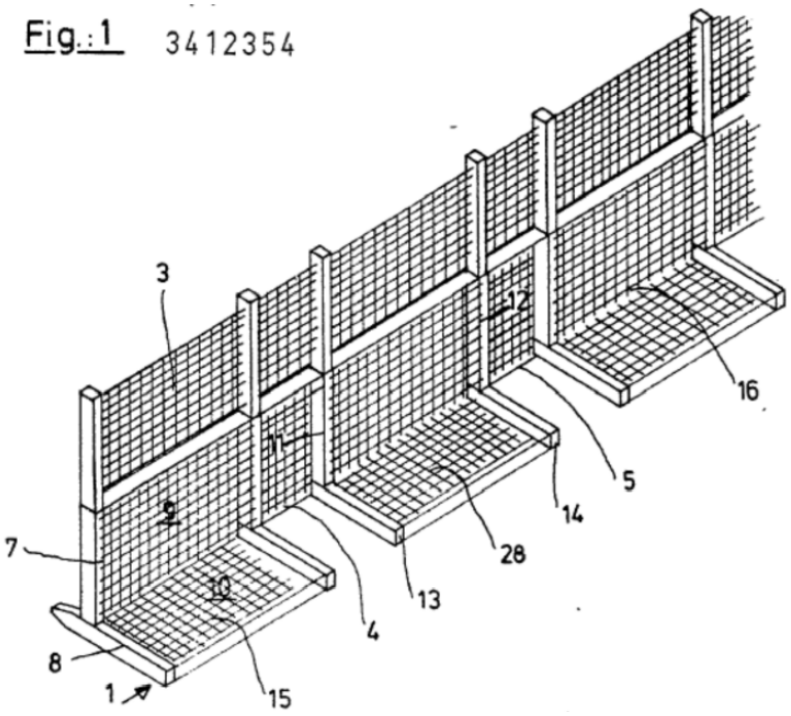

Figure 1 depicts "a perspective representation of a protective barrier with drive-through prevention elements in assembled position." Ex. 1017, 7. Drive-through prevention element 1 includes collision section 7, which is connected at near right angles to and extends upwardly from bottom section 8. *Id.* Bottom section 8 may lie "on or in the ground." *Id.* Collision section 7 and bottom section 8 include solid lattice 9, 10, which adds stability to the

drive-through prevention element. *Id.* The frame for drive-through prevention element 1 includes posts 11, 12, 13, 14, which have double-T profiles. *Id.*; *see also id.* at Fig. 5 (depicting the cross-section of posts 13 and 14, and showing the double-T profile of the posts). Figure 1 depicts multiple drive-through prevention elements 1 connected together in a chain. *Id.* at 7. "[A]ngular elements 15 . . . can and should be made to tip by the impact of a truck in the view direction, wherein the impacting vehicle is lifted and held by the corresponding angular element 15 or 28." *Id.*

"The effectiveness of the angular elements is further improved by placing plowshare-shaped braking elements opposite the angular element." Ex. 1017, 5. These braking elements "provide[] the desired tipping torque for the angular element. [They] can therefore be designed to fold downward and act as a type of anchor, for example, to generate the desired tipping torque." *Id.*

2. Carlyle

Carlyle, titled "Retractable Barrier Post Assembly," published September 26, 1990. Ex. 1011, codes (54), (43). Carlyle relates to "a security barrier device of a type which can be readily moved into position to prevent a vehicle entering a prohibited area." *Id.* at 1. We reproduce Carlyle's Figure 1, below.

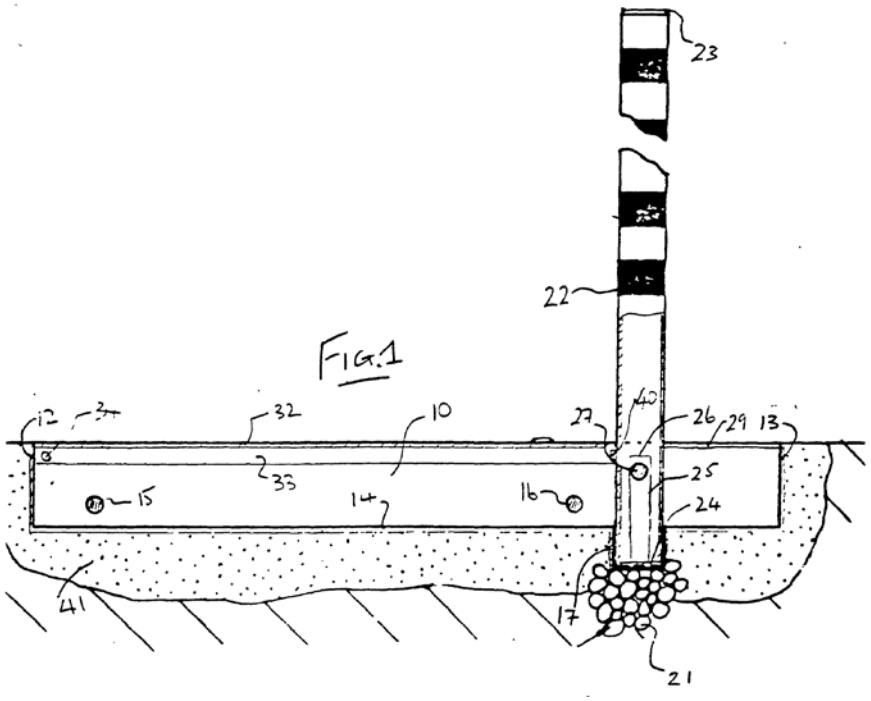

Figure 1 depicts "a longitudinal vertical cross section view of a security barrier device according to [Carlyle's] invention." Ex. 1011, 4. Relevant to this proceeding, Carlyle's retractable barrier post is installed within a shallow excavation, such as 4–6 inches. *See id.* at 6–7, Figs. 1, 4.

3. Cold-Formed Steel Design

Exhibit 1014 provides excerpts from "Cold-Formed Steel Design," which appears to be a textbook or similar reference book. *See* Ex. 1014. The excerpts provide information about cold-formed steel structural members. *See id.* The reference was published June 12, 2000. Ex. 1015, 1 (providing a print out of the Copyright Catalog entry for the reference).

4. Rogers

Rogers, titled "Turntable Barrier System," issued May 9, 2006 from an application filed May 4, 2004. Ex. 1010, codes (54), (45), (22). Petitioner asserts that Rogers is prior art at least under pre-AIA 35 U.S.C.

§ 102(e).[6] Pet. 33. Because the earliest possible priority date for the '865 patent is July 26, 2004, we agree with Petitioner that Rogers is prior art to the '865 patent under at least pre-AIA 35 U.S.C. § 102(e).

Rogers "relates to a barrier system that . . . uses impact elements to restrict the passage of vehicles. The impact elements are mounted on a turntable for rotation between a vehicle restricting position and a vehicle passage position." Ex. 1010, 1:5–11. We reproduce Rogers's Figures 1 and 10, below.

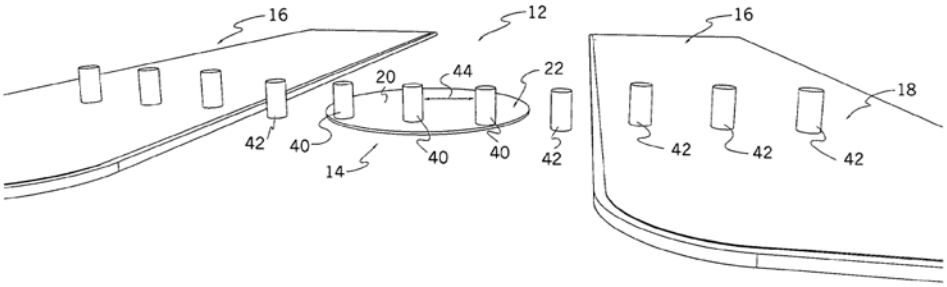

FIG. 1

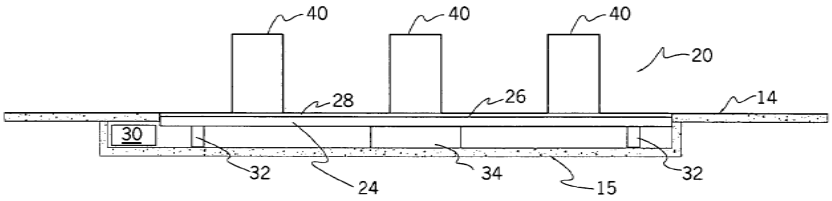

FIG. 10

Figure 1 depicts "a schematic representation of a perspective view of a turntable barrier system according to one embodiment of" Rogers's invention, and Figure 10 depicts "a schematic representation of a side view of a[n exemplary] turntable barrier system." Ex. 1010, 2:55–56, 3:8–10.

[6] Because the application that matured into the '865 patent has an effective filing date before the date the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 296–307 (2011), took effect, we refer to the pre-AIA versions of the patent statute.

The barrier system includes turntable 20 that operates in roadway 12, drive system 30 to rotate the turntable, an operable barrier having impact elements 40, and an inoperable barrier having impact elements 42. *Id.* at 4:16–22. Impact elements 40 may be foundation-type barriers, where the element is integrated into the structure of the turntable, or inertia-, or friction-, type barriers, which sit atop the turntable. *Id.* at 4:24–29, 4:58–62.

Turntable 20 includes top surface 22 located within a recess in roadway 14, with top surface 22 approximately coplanar with the roadway, and rotates in the plane of the roadway. Ex. 1010, 6:4–9. Turntable 20 includes frame structure portion 24, having deck plate 26, and including support structure, such as beams and joists. *Id.* at 6:11–20. Turntable 20 is depicted as circular, but may be provided in other configurations, such as, for example, a rectangular or octagonal shape. *Id.* at 6:15–17, 6:20–24. In an alternative embodiment, the platform may slide instead of rotate. *Id.* at 6:24–27.

Turntable 20 also includes, above frame structure 24, pad layer 28 formed from, for example, reinforced concrete. Ex. 1010, 6:28–31. Frame structure 24 "may include studs or other structure (not shown) around which the pad layer is formed or attached to increase the bond between the frame and the pad layer." *Id.* at 6:31–34. Foundation-type impact barriers may be formed integral with the concrete pad, "so that the pad layer helps serve as the foundation ballast for the . . . impact elements." *Id.* at 6:34–40.

5. Glaesener

Glaesener, titled "Roadside Safety Apparatus," issued May 6, 1975. Ex. 1013, codes (45), (54). Glaesener relates to "a safety system for protecting moving traffic against impact with stationary roadside objects." *Id.* at 1:4–6. Relevant to this proceeding, Glaesener discloses that, in an

embodiment of the safety system, its barrier (post 15) may include a reinforcement structure. *Id.* at 4:1–4; Fig. 5.

II. ANALYSIS

A. Applicable Law

Petitioner's seven asserted grounds of unpatentability are each based on obviousness under 35 U.S.C. § 103(a).

> Section 103(a) [of 35 U.S.C.] forbids issuance of a patent when "the differences between the subject matter sought to be patented 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 person having ordinary skill in the art to which said subject matter pertains."

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art;[7] and (4) when available, objective evidence of nonobviousness, such as commercial success, long felt but unsolved needs, and failure of others.[8] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

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[7] We address the level of ordinary skill in the art in Section II.B., below.

[8] Petitioner states that "simultaneous invention . . . is . . . an objective indication that the system arrived at was obvious." Pet. 15. Petitioner does not explain how this objective evidence is to be weighed here nor does Petitioner provide a limitation-by-limitation analysis demonstrating simultaneous invention. *See id.* at 6–16; *see also* Prelim. Resp. 2 ("[E]ven if Petitioner did allege facts sufficient to show simultaneous invention, that is only relevant as an objective indicia of obviousness ***after*** a prima facie obviousness case is set out, which Petitioner has failed to demonstrate."), 47–53 (addressing simultaneous invention).

"[O]bviousness must be determined in light of *all the facts*, and . . . a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine." *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (emphasis added); *see also PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1196 (Fed. Cir. 2014) ("The presence or absence of a motivation to combine references in an obviousness determination is a pure question of fact."). We recognize that, "[e]ven under [the] 'expansive and flexible' obviousness analysis [of *KSR*], we must guard against 'hindsight bias' and '*ex post* reasoning.'" *St. Jude Med., Inc. v. Access Closure, Inc.*, 729 F.3d 1369, 1381 (Fed. Cir. 2013) (citation omitted).

B. Level of Ordinary Skill in the Art

The level of skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Petitioner contends that a person having ordinary skill in the art:

> would have at least a bachelor's degree or a technical degree in a field such as mechanical or civil engineering or physics and at least several years of experience in designing or manufacturing vehicle barrier systems, but numerous years of experience in the design or manufacture of vehicle barriers, particularly anti-ram systems, could substitute for formal education.

Pet. 28 (referencing Ex. 1003 ¶¶ 71–76 (providing Mr. Roland's testimony regarding the level of ordinary skill in the art)). Patent Owner does not dispute this characterization of the level of ordinary skill in the art. Prelim. Resp. 19. For the purposes of this Decision, we accept Petitioner's characterization of the level of ordinary skill in the art, as we find that it is consistent with the level of skill reflected in the prior art of record.

C. Claim Construction

In *inter partes* reviews, we interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,343 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.* Only claim terms which are in controversy need to be construed and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner informs the Board that, in co-pending litigation, the District Court issued a claim construction order. Pet. 28–29; *see* Ex. 1026 (providing the claim construction order). Petitioner asserts that these constructions should be applied in this proceeding. Pet. 32; *cf.* 83 Fed. Reg. at 51,358 ("Any prior claim construction determination concerning a term of the claim in a civil action . . . that is timely made of record in the *inter partes* review proceeding will be considered."). Patent Owner does not dispute Petitioner's assertion. Prelim. Resp. 19.

We note that, for the nine disputed claim terms construed by the District Court, the court adopted the purported plain and ordinary meaning of the claim term. Ex. 1026, 4–17. We also apply the plain and ordinary meaning to these terms, as that meaning would have been understood by a person having ordinary skill in the art at the time of the invention, when read

in context of the Specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) ("We have made clear, moreover, that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention . . . in the context of the entire patent, including the specification."). We determine, for the purposes of this Decision, that none of the terms require an express construction here to resolve the parties' dispute. *See Nidec Motor Corp.*, 868 F.3d at 1017.

D. Ground 1: Claims 1–3, 15–19, and 31–35 as Allegedly Obvious Over Draht

Petitioner contends that claims 1–3, 15–19, and 31–35 are rendered obvious by Draht. Pet. 34–64.

1. Independent claim 1

Claim 1 recites, in relevant part:

> wherein the at least one first structural member or the at least one structural member or both are configured or tied together to retain within the base supporting media introduced into the base when the base is mounted in the excavation *such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards*.

Ex. 1001, 9:35–41 (emphasis added) (the "retaining supporting media" limitation of claim 1). The "retaining supporting media" limitation of claim 1 requires the at least one first structural member or the at least one structural member or both to be configured (or tied together) to retain within the base, supporting media. The parties agree that the term "supporting media" encompasses either concrete or soil. Pet. 31; Prelim. Resp. 19.

a) Petitioner's contentions

Petitioner contends that Draht discloses that bottom section 8 of its drive-through prevention element may be placed in the ground or covered by

ground, such that the drive-through prevention element is mounted in a shallow excavation. Pet. 55–56 (providing quotations from Ex. 1017, 4, 8 and further referencing *id.* at 5 (lines 14–19); Ex. 1003 ¶ 157). Petitioner also contends that, by disclosing that bottom section 8 is placed in or covered by soil, section 8 "is configured to retain supporting media." *Id.* at 57 (providing quotations from Ex. 1017, 4, 8 and further referencing *id.* at 5 (lines 14–19); Ex. 1003 ¶ 161).

With respect to the requirement in the "retaining supporting media" limitation of claim 1 that the retention of the supporting media resists rotation of the bollards or the bollards and base from impact against a bollard, Petitioner contends that "Draht teaches that the bollards and base resist rotation by driving portions of the base into the ground." Pet. 57–58 (providing quotations from Ex. 1017, 4–5, 5, 6, 8 and further referencing *id.* at 5 (lines 21–26); Ex. 1003 ¶ 162). Specifically, Petitioner relies on the following language in Draht: "if the vehicle drives onto the buried side piece and hits the collision section with its bumper, a tilting force is generated that presses the bottom section into the ground and causes the vehicle to be lifted and held." Pet. 57; Ex. 1017, 4–5. Petitioner also relies on the statements that "angular element acts as an energy-canceling element, through which the energy from the vehicle is directed into the ground," "the drive-through prevention element . . . will be moved only in the direction the vehicle's travel," the "plow-type blade initially helps the angular element to dig in and 'shovels' the earth toward the solid lattice of the collision section," and "[t]his reinforces the braking effect of the angular element 15." Pet. 57–58 (emphasis omitted); Ex. 1017, 5, 6, 8; *see also* Ex. 1017, 5 ("The effectiveness of the angular elements is further improved by placing plowshare-shaped braking elements opposite the angular element in the

expected pushing or moving direction. These braking elements keep the drive-through prevention element from being pulled out of the ground and instead press the angle side even deeper into the ground so that the tipped position is achieved if the vehicle proceeds farther. This tipped position prevents the vehicle from traveling any farther."). Petitioner adds that "as explained by Mr. Roland, Draht teaches rotation resisting methods substantially similar to the exemplary methods described in the '865 patent." Pet. 58 (referencing Ex. 1001, 3:5–19; Ex. 1017, 4, 7; Ex. 1003 ¶¶ 163–165).

b) Patent Owner's counter arguments

Patent Owner argues that Draht does not disclose that its drive-through prevention element is mounted in a shallow excavation. Prelim. Resp. 32. Patent Owner contends that Draht's teachings that its bottom section being covered in dirt to make it aesthetically pleasing "does ***not*** contribute in any way to the Draht fence structure." *Id.* Patent Owner also argues that Petitioner's reliance on Draht's disclosure that its angular element may have side pieces sunk into the ground is misleading, as this disclosure does not teach a shallow excavation. *Id.* at 33.

Patent Owner also argues that Draht's bottom section 8 is not "configured to retain supporting media," as the solid lattices that make up bottom section 8 are one dimensional structures that cannot retain media. Prelim. Resp. 33–34. Patent Owner adds that "the supporting media introduced into the bollard base must aid in the bollards' resistance to rotation." *Id.* at 34. Patent Owner argues that, in contrast, Draht "does not require a heavy, permanent base, and teaches that a benefit of its system is that it's 'very low weight,' making it 'easy to assemble and dissemble.'" *Id.*

Finally, Patent Owner argues that Draht's structure does not resist rotation, as the structure is designed to rotate. Prelim. Resp. 35. Patent

Owner explains that "Draht ***needs to rotate in order to function as intended***—it only works by rotating (tilting) and trapping a vehicle." *Id.* Patent Owner criticizes Petitioner's assertion that Draht's structure "resists rotation," stating that the position is "ambiguous," and provides a conclusory statement that "Draht teaches that the bollards and base resist rotation by driving portions of the base into the ground." *Id.* at 36.

c) Our determinations with respect to claim 1

We determine that Petitioner fails to sufficiently demonstrate that Draht discloses elements of a base structure ("the at least one first structural member or the at least one structural member or both") that "are configured or tied together to retain within the base supporting media . . . such that the rotation is resisted of a bollard or bollards and the base from an impact against the bollard or bollards" as required by the "retaining supporting media" limitation of claim 1. First, Petitioner fails to explain adequately how the structural elements of Draht's bottom section 8 are configured *to retain* soil. Petitioner merely states that Draht's bottom section is placed in or covered by soil and adds a citation that Draht's angular element may have side pieces that are sunk in the ground and covered with soil. *See* Pet. 57. This information does not explain how the at least one first structural member or the at least one structural member or both are configured *to retain* the soil.

Second, even if Draht's bottom section is configured to retail soil, Petitioner fails to explain adequately how this retention of soil results in posts 11 and 12 (the alleged bollards, *see* Pet. 40) or posts 11 and 12 and bottom section 8 resisting rotation. Petitioner's contention that "Draht teaches that the bollards and base resist rotation" does not follow from the assertion that Draht teaches "driving portions of the base into the ground" as

a result of a vehicle colliding with the collision section. *See* Pet. 57. Indeed, as Draht expressly teaches, this driving a portion of the base into the ground is precisely what aids Draht's structure in rotating. As Draht explains,

> The effectiveness of the angular elements is further improved by placing plowshare-shaped braking elements opposite the angular element in the expected pushing or moving direction. These braking elements keep the drive-through prevention element from being pulled out of the ground and instead press the angle side even deeper into the ground so that the tipped position is achieved if the vehicle proceeds farther. This tipped position prevents the vehicle from traveling any farther.

Ex. 1017, 5; *see also id.* ("[S]uch a braking element is easily and practically created . . . to form a swing-tab . . . [that] provides the desired tipping torque for the angular element. It can therefore be designed to fold downward and act as a type of anchor, for example, to generate the desired tipping torque."). That is, by pressing the angle side deeper into the ground, the side acts as a fulcrum that allows the structure to tip, or *rotate*, when a vehicle contacts the collision section. That mechanism is how Draht stops a vehicle. Ex. 1017, code (54) ("The angled element . . . has a braking element on its front edge, preferably a swing-tab, *that allows the angled element to tilt if a vehicle drives into the collision section*. The vehicle is then lifted and held and can no longer drive over or through the barrier." (emphasis added)).

Accordingly we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claim 1 is unpatentable under 35 U.S.C. § 103 over Draht.

2. Independent Claims 16 and 33 and Dependent Claims 2, 3, 15, 17–19, 31, 32, 34, and 35

In asserting that independent claims 16 and 33 are rendered obvious by Draht, Petitioner relies on the same contentions for these claims as

presented for claim 1. Pet. 35–58. Also, Petitioner relies on its contentions with respect to independent claims 1, 16, and 33 in asserting that dependent claims 2, 3, 15, 17–19, 31, 32, 34, and 35 are rendered obvious by Draht. *See* Pet. 58–64 (addressing the specific subject matter of these dependent claims without further reference to the underlying independent claims).

Accordingly, for the reasons discussed above in connection with our analysis of claim 1, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claims 2, 3, 15–19, and 31–35 are unpatentable under 35 U.S.C. § 103 over Draht.

E. Ground 2: Claims 4 and 20 as Allegedly Obvious Over Draht and Carlyle

For Ground 2, Petitioner relies on its contentions with respect to independent claims 1 and 16 for Ground 1 in asserting that dependent claims 4 and 20, which directly depend from claim 1 and claim 16, respectively, are rendered obvious by the combination of Draht and Carlyle. *See* Pet. 64–67 (addressing the specific subject matter of dependent claims 4 and 20 without further reference to the underlying independent claims). Petitioner does not assert that Carlyle remedies the deficiencies in Petitioner's positions that we identify in our analysis of claims 1 and 16 for Ground 1.

Accordingly, for the reasons discussed above in connection with our analysis of claims 1 and 16 for Ground 1, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claims 4 and 20 are unpatentable under 35 U.S.C. § 103 over Draht and Carlyle.

F. Ground 3: Claims 5–14 and 21–30 as Allegedly Obvious Over Draht and Cold-Formed Steel Design

For Ground 3, Petitioner relies on its contentions with respect to independent claims 1 and 16 for Ground 1 in asserting that dependent claims 5–14 and 21–30, which depend, directly or indirectly, from either claim 1 or claim 16, are rendered obvious by the combination of Draht and Cold-Form Steel Design. *See* Pet. 67–72 (addressing the specific subject matter of dependent claims 5–14 and 21–30 without further reference to the underlying independent claims).

Accordingly, for the reasons discussed above in connection with our analysis of claims 1 and 16 for Ground 1, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that dependent claims 5–14 and 21–30 are unpatentable under 35 U.S.C. § 103 over Draht and Cold-Formed Steel Design.

G. Ground 4: Claims 1–3, 14–19, and 30–35 as Allegedly Obvious Over Rogers

Petitioner contends that claims 1–3, 14–19, and 30–35 are rendered obvious by Rogers. Pet. 72–101.

1. Independent claim 1

Claim 1 recites, in relevant part:

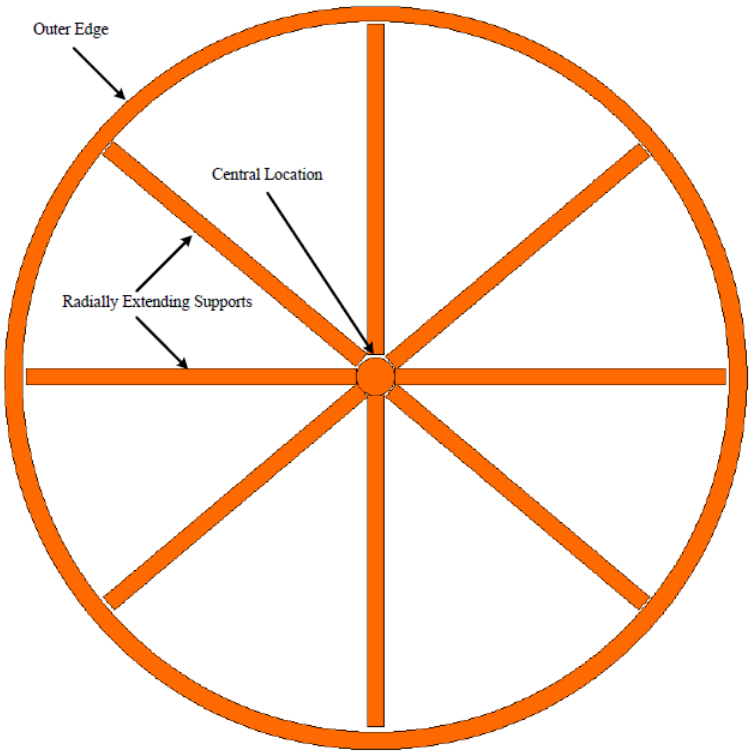
> at least one bollard; and
>
> a base comprising opposed ends and a plurality of structural members which intersect and are tied together, for each bollard of the bollard structure at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction intersecting with the opposed ends, and at least one structural member extending to intersect with the at least one first structural member.

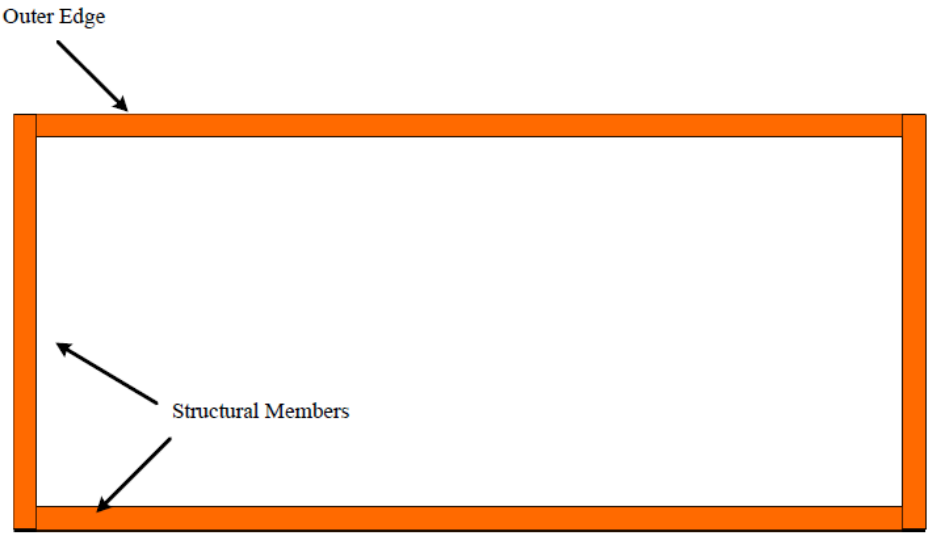
Ex. 1001, 9:19–26 (the "bollard" and "base" limitations of claim 1). Claim 1 also requires each of the at least one bollard to be "secured to at least one of the at least one first structural member and the at least one structural member of the base for the respective bollard." *Id.* at 9:27–29 (the "secured bollard" limitation of claim 1).

a) Petitioner's contentions

Petitioner contends that Rogers's impact elements correspond to the recited bollard. Pet. 75–77 (referencing Ex. 1010, code (57), 1:5–11, 2:12–51, 3:19–23, 4:16–57, 7:19–30; Ex. 1003 ¶ 220). Specifically, Petitioner's identify Rogers's disclosure of foundation-type impact elements as corresponding to the recited bollard and also indicates that Rogers discloses multiple impact elements. *Id.* at 75–76.

Petitioner contends that Rogers discloses a base in the form of a turntable, which includes structural members including sections of steel, beams, joists, and other supports. Pet. 77–78 (referencing Ex. 1010, 6:3–5, 6:11–27, 6:11–15; Ex. 1003 ¶ 221). Petitioner explains that Rogers discloses that its circular turntable may be other shapes, such as rectangular or octagonal. *Id.* at 78 (referencing Ex. 1010, 6:17–22, Figs. 9, 10). Petitioner adds that Rogers discloses that the turntable "may include radially extending supports (e.g. beams, joists, etc.) extending from a central location to an outer edge of the turntable." *Id.* Petitioner provides "[e]xemplary illustrations" provided by Mr. Roland in his declaration, which Petitioner contends are described in Rogers. We reproduce these illustrations below.





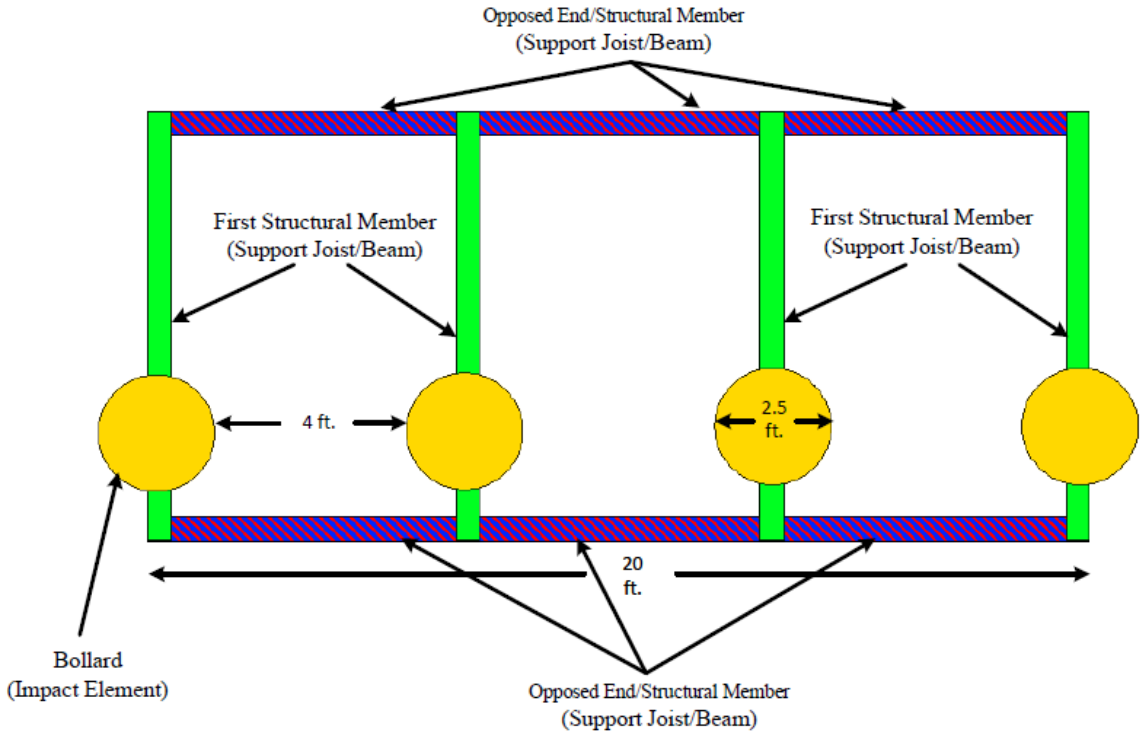
Pet. 79–80 (referencing Ex. 1003 ¶¶ 223, 225). The first illustration depicts a support frame structure for a circular turntable with radially-extending

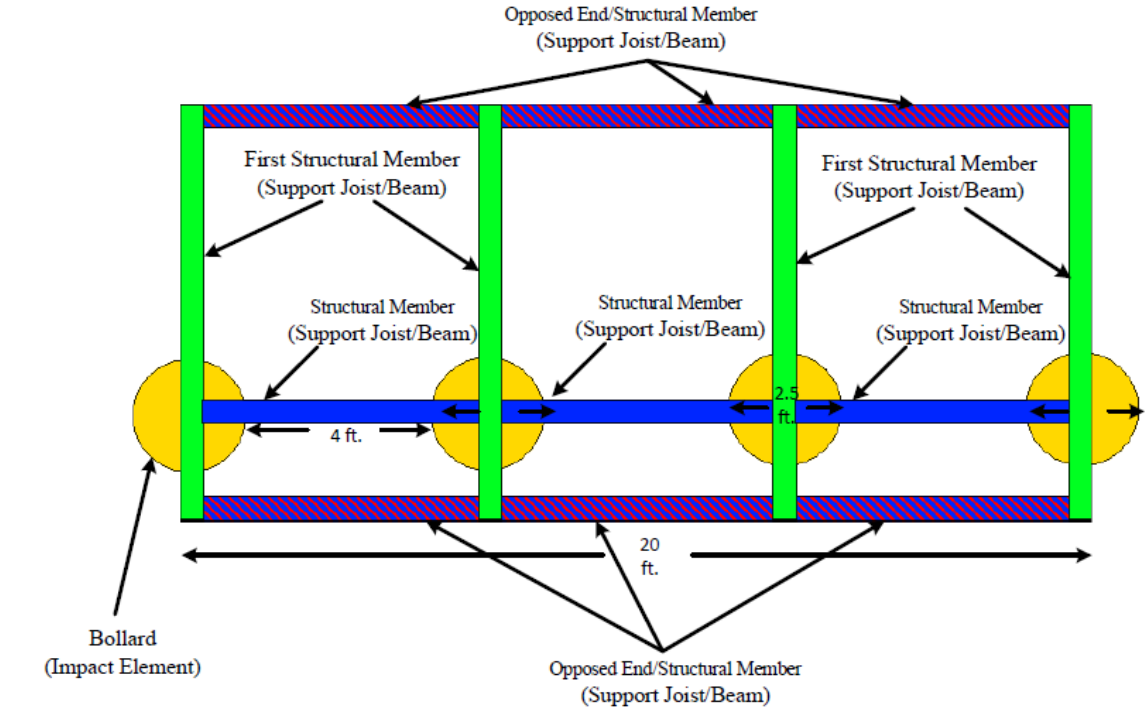
supports originating at the center of the framework, and the second illustration depicts a support frame structure for a rectangular turntable.[9]

With respect to the first illustration above, showing the framework for a circular turntable, Mr. Roland declares that the image "illustrates how a person of ordinary skill in the art would have envisioned a plurality of structural members (highlighted in orange) including: radially extending supports, central location, and outer edge as disclosed by Rogers." Ex. 1003 ¶ 223 (referencing Ex. 1010, Figs. 9, 10). Mr. Roland also declares, with respect to the second image above, that "in my opinion, a rectangular turntable . . . would have been understood by a person of ordinary skill in the art to [at] least have structural members that intersect at the perpendicular corners of the rectangle." *Id.* ¶ 225.

Petitioner also contends that it would have been obvious to a person having ordinary skill in the art to apply Rogers's teaching of offsetting the impact elements on a turntable for a rectangular turntable. Pet. 84. Petitioner does not provide additional support for this assertion, other than that "there were a limited set of options." *Id.* The Petition provides "[o]ne possible configuration" and "[a]nother option" of the configuration, which we reproduce below.

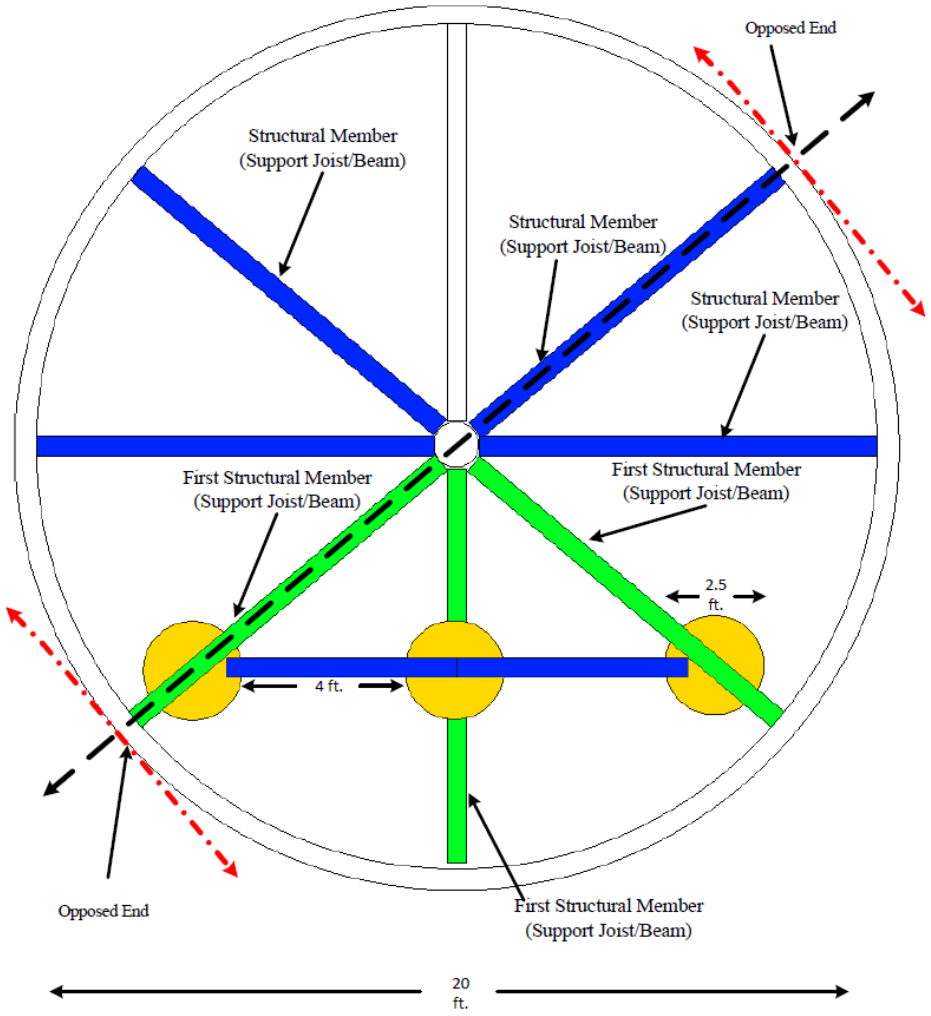
[9] The Petition also reproduces Mr. Roland's illustration showing a rectangular turntable frame with radially-extending supports. Pet. 80. Because the Petition does not rely on this exemplary configuration in subsequent contentions, we do not reproduce that illustration here.





Id. at 84–86 (referencing Ex. 1003 ¶¶ 245–248; Ex. 1010, 4:45–51, 5:58–65; 7:43–46). These two images provide annotated configurations for a framework for a rectangular turntable for Rogers's bollard system,

identifying first structural members (green), structural members (blue) and opposed ends (red). *Id.* In yet another "example," Petitioner provides a framework for a circular turntable, which we reproduce below.



Id. at 87 (referencing Ex. 1003 ¶ 249; Ex. 1010, 7:33–36, Figs. 2–5). This image shows an annotated framework for a circular turntable, identifying first structural members (green), structural members (blue) and opposed ends (red). For both images, bollards are shown in yellow. Petitioner contends that "it would have been obvious (as shown above) to arrange the bollards along the chord, as taught by Rogers, by using additional supports

to connect the bollard to the frame at the four-foot spacing interval taught by Rogers." *Id.* at 88. Petitioner does not further explain this assertion.

Based on the information in the Petition, we understand Petitioner to contend that these illustrations represent possible or exemplary frameworks for a circular or rectangular turntable and that these frameworks include the recited at least one first structural member (shown in green in the above illustrations) and at least one structural member (shown in blue in the above illustrations). *See* Pet. 82–91.[10]

With respect to the "secured bollard" limitation, Petitioner contends that, as illustrated in the framework configurations reproduced above, a person having ordinary skill in the art "would have understood that each of the bollards would be secured to at least one of a first structural member and a structural member of the frame corresponding to that bollard." Pet. 91.[11] Petitioner does not provide any additional explanation to support why an artisan of ordinary skill would have had this understanding. *See id.*

[10] Petitioner also argues that, because Rogers discloses that deck plate 26 may be a unitary structure and because the '865 patent discloses that "cross pieces are inherent in [a] continuous plate," Rogers inherently discloses cross pieces as structural members. Pet. 81–82 (referencing Ex. 1010, 6:11–15; Ex. 1001, 5:48–57; Ex. 1003 ¶ 234–235); *see also id.* at 88, 91 (relying on this inherency argument in support of Rogers disclosing the recited at least one first structural member and at least one structural member).

[11] Petitioner adds that a person having ordinary skill in the art "would have understood that the bollards would be secured to the unitary deck plate as taught by Rogers, which, according to the '865 patent, includes inherent cross pieces (i.e., structural members)," relying on Petitioner's inherency argument concerning cross pieces in the steel deck plate. Pet. 92 (referencing Ex. 1003 ¶ 265; Ex. 1010, 7:43–46).

b) Patent Owner's counter arguments

Patent Owner argues that Rogers teaches away from foundation-type impact barriers because the reference teaches that inertia-type barriers are used when shallow utilities are present, such that they would be used for a shallow excavation arrangement. Prelim. Resp. 37–38. Patent Owner also argues that Rogers discloses only operable bollards, not an inoperable bollard system. *Id.* at 37.

Patent Owner then argues that Petitioner's contentions with respect to the exemplary turntable frameworks rely on hindsight and that Petitioner "does not explain why a [person having ordinary skill in the art] would choose the '865 patent base from all the possibilities available." *Id.* at 40–41.

Patent Owner contends, with respect to Rogers's circular turntable, that such a structure does not have "opposed ends" as required by the "base" limitation of claim 1. Prelim. Resp. 41. Patent Owner also contends Rogers teaches only a stacked, plate-like structure and does not depict the structure envisioned by Petitioner. *Id.* at 42. Patent Owner characterizes Petitioner's illustrations of framework as "made up" and "imagined" and that "[n]ot a single one of these images is taken from Rogers." *Id.* Patent Owner argues that the images are misleading, for example, by showing radially extending structures, which originate at the center of the structure, as extending from one opposed end to the other. *Id.*

With respect to the "secured bollard" limitation, Patent Owner argues that Rogers discloses that its impact elements may be attached to any of the components of the turntable, and that none of these components are the recited structural members. Pet. 43.

c) Our determinations with respect to claim 1

We determine that Petitioner fails to make the requisite showing that Rogers discloses the subject matter of the "base" and "secured bollard" limitations of claim 1 or that this subject matter would have been obvious to a person having ordinary skill in the art at the time of the invention. As an initial matter, we do not agree with Patent Owner that Rogers teaches away from using foundation-type bollards for shallow excavations. Indeed, we find that Rogers expressly teaches using foundation-type bollards on its turntable, which is part of a shallow excavation. *See* Ex. 1010, 3:35–38, 5:35–43; 6:3–40. Also, Patent Owner fails to direct us to any language in the claims that would preclude the claimed bollard system being an operable system, such as one on a moving turntable or sliding platform.

Still, with respect to the circular embodiment, we agree with Patent Owner that Petitioner fails to demonstrate adequately that this embodiment includes at least one first structural member extending from a first of the opposed ends of the base to a second of the opposed ends of the base in a first direction as required by the "base" limitation. Although we do not agree, on the current record, that a circular structure cannot have opposed ends, as we find that the two ends of a diameter could be considered opposed ends, Petitioner's illustration of the circular embodiment shows the alleged first structural members extending from the *center* of the turntable to one edge, not from one edge to another (that is, one opposed end to the other). Because Petitioner fails to explain adequately how the circular turntable embodiment discloses the recited at least one first structural member, we need not consider the circular turntable embodiment further.

With respect to the rectangular embodiment, we agree with Patent Owner that Petitioner's contentions with respect to how Rogers discloses the

structural elements of the "base" limitation and how the bollards are attached to those structural elements are more a product of hindsight than an obvious extension of Rogers's teachings. That is, for the reasons discussed below, we determine Petitioner used the limitations of claim 1 as a roadmap to arrive at the illustrated configurations reproduced above.

First, Petitioner fails to explain adequately why a person having ordinary skill in the art would have understood that Petitioner's exemplary images represent how the disclosed turntables in Rogers are configured. Indeed, it appears from the Petition that the illustrated embodiments represent *possible* options, rather than the product of Roger's disclosure. *See, e.g.*, Pet. 84–85 (presenting "[o]ne possible configuration"), 85–86 (presenting "[a]nother option").

Second, to the extent that Petitioner argues that the illustrated configurations represent obvious modifications to Rogers's structure, the Petition fails to provide any reasoning for such a modification. *See* Pet. 84 (stating that it would have been obvious to apply Rogers's teachings of an offset configuration for a rectangular turntable, without providing any reason why the application was obvious), 88 (indicating that "it would have been obvious . . . to arrange the bollards along the chord, as taught by Rogers, by using additional supports to connect the bollard to the frame at the four-foot spacing interval taught by Rogers" without providing any supporting reason for this arrangement). These conclusory statements are not sufficient to demonstrate obviousness. *See KSR Int'l Co.*, 550 U.S. at 418 ("[O]bviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006))). As such, Petitioner

fails to show sufficiently that the differences between the prior art and the claimed invention would have been obvious to a person having ordinary skill in the art.

Third, we also determine that Petitioner's inherency argument is insufficient to demonstrate that Rogers discloses the subject matter of the "base" and "secured bollard" limitations of claim 1 or that this subject matter would have been obvious to a person having ordinary skill in the art. *See* Pet. 88, 91, 92. Petitioner fails to explain adequately how the statement in the '865 patent that "cross pieces are inherent in the continuous plate" supports a conclusion that Rogers's plate necessarily includes at least one first structural member and at least one structural member configured as recited in the claims. Also, even if such a conclusion is appropriate, Petitioner fails to explain adequately why the bollards would have necessarily been secured to these cross pieces.

Fourth and finally, Petitioner fails to adequately explain the implication of Rogers's disclosure that foundation-type impact elements may be integrally formed with a concrete pad layer and how this integral structure allows *each bollard* to be secured to the at least one first structural member extending or the at least one structural member as required by the "secured bollard" limitation of claim 1. *Cf.* Ex. 1010, 6:28–34 (describing the integral formation of a concrete pad with foundation-type impact elements); Pet. 91–92, 96 (discussing using studs or other structures to bond a concrete pad to the framework to satisfy the requirement that the base structure retains supporting media but not addressing how each integrated impact element is secured to the framework).

Accordingly, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claim 1 is unpatentable under 35 U.S.C. § 103 over Rogers.

2. Independent Claims 16 and 33 and Dependent Claims 2, 3, 14, 15, 17–19, 30–32, 34, and 35.

In asserting that independent claims 16 and 33 are rendered obvious by Rogers, Petitioner relies on the same contentions for these claims as presented for claim 1, above. Pet. 73–97. Also, Petitioner relies on its contentions with respect to independent claims 1, 16, and 33 in asserting that dependent claims 2, 3, 14, 15, 17–19, 30–32, 34, and 35 are rendered obvious by Rogers. *See* Pet. 97–101 (addressing the specific subject matter of these dependent claims without further reference to the underlying independent claims).

Accordingly, for the reasons discussed above in connection with our analysis of claim 1 for Ground 4, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claims 2, 3, 14–19, and 30–35 are unpatentable under 35 U.S.C. § 103 over Rogers.

H. Ground 5: Claims 4 and 20 as Allegedly Obvious Over Rogers and Carlyle

For Ground 5, Petitioner relies on its contentions with respect to independent claims 1 and 16 for Ground 4 in asserting that dependent claims 4 and 20, which directly depend from claim 1 and claim 16, respectively, are rendered obvious by the combination of Rogers and Carlyle. *See* Pet. 101–103 (addressing the specific subject matter of dependent claims 4 and 20 without further reference to the underlying independent claims). Petitioner

does not assert that Carlyle remedies the deficiencies in Petitioner's positions that we identify in our analysis of claims 1 and 16 for Ground 4.

Accordingly, for the reasons discussed above in connection with our analysis of claims 1 and 16 for Ground 4, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claims 4 and 20 are unpatentable under 35 U.S.C. § 103 over Rogers and Carlyle.

I. Ground 6: Claims 5–13, 21–29, and 35 as Allegedly Obvious Over Rogers and Cold-Formed Steel Design

For Ground 6, Petitioner relies on its contentions with respect to independent claims 1 and 16 for Ground 4 in asserting that dependent claims 5–13, 21–29, and 35, which depend, directly or indirectly, from either claim 1 or claim 16, are rendered obvious by the combination of Rogers and Cold-Form Steel Design. *See* Pet. 103–105 (addressing the specific subject matter of dependent claims 5–13, 21–29, and 35 without further reference to the underlying independent claims).

Accordingly, for the reasons discussed above in connection with our analysis of claims 1 and 16 for Ground 4, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that dependent claims 5–13, 21–29, and 35 are unpatentable under 35 U.S.C. § 103 over Rogers and Cold-Formed Steel Design.

J. Ground 7: Claim 35 as Allegedly Obvious Over Rogers and Glaesener

For Ground 7, Petitioner relies on Glaesener for disclosing the subject matter of dependent claim 35 "to the extent it is determined that Rogers does not explicitly teach a rebar member extends between two structural members supporting two adjacent bollards." Pet. 105. Petitioner otherwise relies on

its contentions with respect to independent claim 33, from which claim 35 depends, asserted for Ground 4. *See id.*

Accordingly, for the reasons discussed above in connection with our analysis of Ground 4, we determine, on the record before us, that the information in the Petition fails to demonstrate a reasonable likelihood that claim 35 is unpatentable under 35 U.S.C. § 103 over Rogers and Glaesener.

III. CONCLUSION

After considering all the evidence and arguments presently before us, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to any of the Challenged Claims. Accordingly, we do not institute an *inter partes* review.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), the Petition is *denied*.

PETITIONER:

Joseph J. Richetti
Noah M. Lerman
Frank M. Fabiani
BRYAN CAVE LEIGHTON PAISNER LLP
joe.richetti@bclplaw.com
noah.lerman@bclplaw.com
frank.fabiani@bclplaw.com

PATENT OWNER:

Joseph V. Saphia
Jessica H. Zafonte
HAUG PARTNERS LLP
jsaphia@haugpartners.com
jzafonte@haugpartners.com
ipr.rsaprotective@haugpartners.com