UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

BOS GMBH & CO. KG, et al., Plaintiffs, vs. **MACAUTO USA, INC., et al.,** Defendants.	**17-10461-TGB** **OPINION AND ORDER CONSTRUING DISPUTED CLAIM TERMS (ECF Nos. 36, 37, 38)**

This is a patent infringement case in which Plaintiffs BOS GmbH & Co. KG and BOS Automotive Products, Inc. (collectively, "BOS") allege that Defendants Macauto USA, Inc. and Macauto Industrial Co., Ltd. (collectively, "Macauto") have infringed upon U.S. Patent No. 7,188,659, entitled "Injection-Molded Plastic Guide Rail" (the "'659 Patent").

Pursuant to this Court's standard procedure, the parties were to identify the disputed claim terms within the '659 Patent that are material to the infringement and validity issues in this case. The parties have submitted written briefs explaining their positions on how the disputed claim terms should be construed. ECF Nos. 36, 37, 38. The Court previously held oral argument. ECF No. 40. In this opinion and order, the

Court construes the disputed claim terms identified by the parties, pursuant to the procedure set forth in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

I. PROCEDURAL HISTORY

The United States Patent and Trademark Office ("USPTO") issued the '659 Patent on March 13, 2007 to Plaintiff BOS GmbH & Co. KG. The '659 Patent is directed to a moveable window shade for motor vehicles. The window shade includes plastic injection-molded guide rails that have undercut guide grooves. The guide rails are easier and less costly to manufacture than previous guide rails because they can be formed with injection-molding tools that do not require movable cores to form the undercut guide grooves. Pl. Br. Ex. A, ECF No. 36-2.

On February 13, 2017, BOS filed this patent infringement case against Macauto, alleging that Macauto's retractable rear window shade products infringe the '659 Patent. ECF No. 1.

On January 12, 2018, Macauto filed a petition to institute an *inter partes* review ("IPR") before the USPTO's Patent Trial and Appeal Board ("PTAB") to challenge the patentability of the '659 Patent ("Macauto's

IPR Petition"). On February 13, 2018, the Court denied Defendants' motion to stay proceedings pending conclusion of the IPR. ECF No. 29. On June 27, 2018, the PTAB denied Macauto's IPR Petition, and no IPR was instituted. Pl. Br. Ex. B, ECF No. 36-3.

II. LAW OF CLAIM CONSTRUCTION

Patent claims are short and concise statements that define the "metes and bounds" of the patented invention. Each claim is written in the form of a single sentence. Claim construction describes the procedure by which courts determine the meaning of a disputed term contained in a claim. "The construction of claims is simply a way of elaborating the normally terse claim language: in order to understand and explain, but not to change, the scope of the claim." *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1580 (Fed. Cir. 1991), *overruled in part on other grounds*, *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1293 (Fed. Cir. 2009) (en banc). The construction of key terms in patent claims plays a critical role in nearly every patent infringement case. Claim construction is central to both a determination of infringement and validity of a patent. The judge, not a jury, is to determine the meaning of the disputed claim terms as a matter of law. *Markman*, 517 U.S. at 372, 391.

A court has two primary goals in construing the disputed claim terms. The first goal is to determine the scope of the patented invention by interpreting the disputed claim terms to the extent needed to resolve the dispute between the parties. The second goal is to provide a construction for the term that the jury will understand in the context of the patent specification and prosecution history of the patent. *See*, *e.g.*, *Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) ("The terms, as construed by the court, must ensure that the jury fully understands the court's claim construction rulings and what the patentee covered by the claims."); *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary, to explain what the patentee covered by the claims, for use in the determination of infringement."). The Court's claim construction ruling forms the basis for the ultimate jury instructions. *See IPPV Enters., LLC v. Echostar Commc'ns Corp.*, 106 F. Supp. 2d 595, 601 (D. Del. 2000).

The seminal case setting forth the principles for construing disputed claim terms is *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). According to *Phillips*, the words of the claim are

generally given their "ordinary and customary" meaning, *i.e.* "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Id.* at 1312–13. The person of ordinary skill in the art views the claim term in light of the entire intrinsic record: the claim, other parts of the patent, and, if in evidence, the prosecution history of the patent before the USPTO. *Id.* at 1313–14. The court normally should not read limitations or features of the exemplary embodiments discussed in the patent specification into the claims. *Id.* at 1323–24.

The prosecution history of the patent can often inform the meaning of the claim language by demonstrating how the inventor understood the invention. However, because the prosecution history is an ongoing negotiation between the patent office and the patent owner, rather than the final product of that negotiation, it often lacks the clarity of the patent itself and is therefore generally less useful for claim construction purposes. *Id.* at 1317.

In discerning the meaning of claim terms, resorting to dictionaries and treatises also may be helpful. *Id.* at 1320–23. However, a court should not rely on extrinsic evidence in a way that would diminish the

public notice function of patents. *Id.* In the end, the construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be the correct construction. *Id.* at 1316.

It is proper for the Court to construe the disputed claim terms in the context of the infringement or invalidity dispute by viewing the accused device or prior art. Viewing the accused device or prior art allows the Court to construe the claims in the context of the dispute between the parties, not in the abstract. "While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction." *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326–27 (Fed. Cir. 2006). Without "the vital contextual knowledge of the accused products," a court's claim construction decision "takes on the attributes of something akin to an advisory opinion." *Lava Trading, Inc. v. Sonic Trading Mgmt., LLC*, 445 F.3d 1348, 1350 (Fed. Cir. 2006).

III. THE '659 PATENT AND BOS'S INFRINGEMENT ALLEGATIONS

The '659 Patent describes a guide rail (16) that has an undercut guide groove (27). In a first embodiment, shown in Figure 3, reproduced below, the guide rail (16) has an outer part (41) that defines the undercut guide groove (27). In a second embodiment, shown in Figures 4 and 5, reproduced below, the guide rail (16) has first and second parts (63, 64) that are interconnectable to define the undercut guide groove (27).

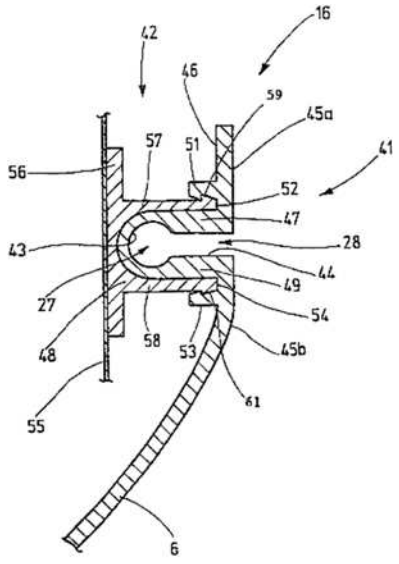


Fig.3

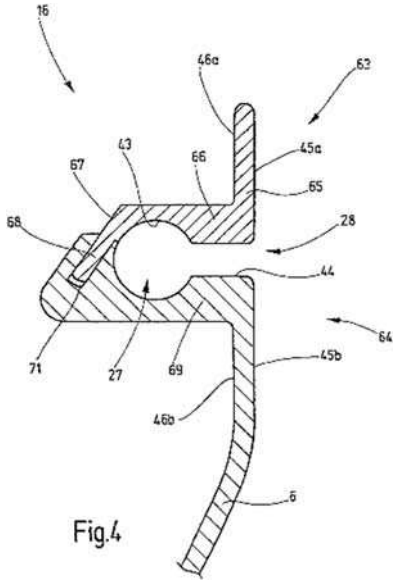


Fig.4

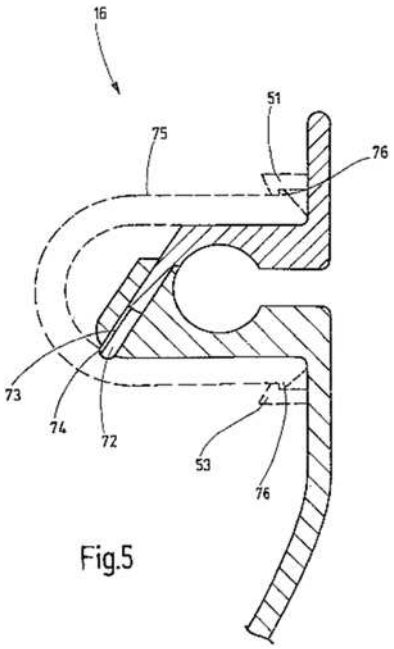


Fig.5

As shown in Figures 1 and 2, reproduced below, two of the guide rails (16) are used in a moveable window shade (14) for motor vehicles. In addition to the guide rails (16), the window shade (14) has a strip-shaped shade (15). The undercut guide grooves (27) are used to mount

the strip-shaped shade (15) for movement between the guide rails (16). The undercut guide grooves (27) have slots (28) through which the undercut guide grooves (27) open outwardly in the direction of the strip-shaped shade (15). The strip-shaped shade (15) is mounted using guides (23, 24) that have neck parts (25) through the slots (28), and guide members (26) received in the undercut guide grooves (27). Relatedly, the undercut guide grooves (27) have narrower rectangular sections (44) that correspond to the slots (28), and wider circular sections (43) whose diameters are adapted to the diameters of the guide members (26). In addition to guiding the guide members (26), the undercut guide grooves (27) prevent the release of the guide members (26) from the undercut guide grooves (27).

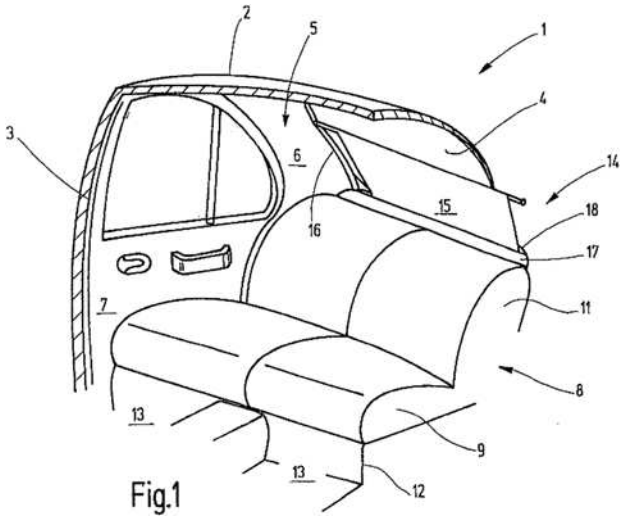


Fig.1

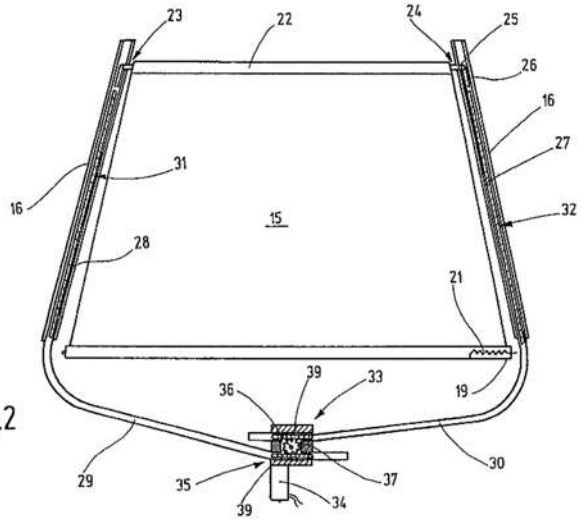


Fig.2

Each guide rail (16) is a plastic injection-molded part. Despite the undercut guide groove (27), each guide rail (16) can be formed with injection-molding tools that do not require movable cores to form the undercut guide groove (27). In the first embodiment, the outer part (41) of the guide rail (16) is elastically deformable. Accordingly, the outer part (41) can be removed from a mold core that produces the circular section (43) and the rectangular section (44). Specifically, the outer part (41) can be widened enough for the mold core to slide through the slot (28), and subsequently spring back into shape. In the second embodiment, the first and second parts (63, 64) of the guide rail (16) are essentially free of undercuts.

The '659 Patent has forty-three claims, including independent claims 1, 22, 33, 37 and 43. Independent claims 1, 33 and 43 and dependent claims 2-21 and 34-36 are drawn to the first embodiment of the guide rail (16). Claims 1-21 are drawn to one guide rail (16) by itself and claims 33-36 and 43 are drawn to the combination of at least one guide rail (16) with the strip-shaped shade (15) and other elements of the window shade (14). Independent claims 22 and 37 and dependent claims 23-32 and 38-42 are drawn to the second embodiment of the guide rail (16). Claims 22-

32 are drawn to one guide rail (16) by itself and claims 33-36 and 43 are drawn to the combination of at least one guide rail (16) with the strip-shaped shade (15) and other elements of the window shade (14). *See* '659 Patent at 8:5-12:16.

BOS alleges that Macauto infringes claims 22-26, 29, 32, 37-39 and 42 of the '659 Patent. The asserted claims are drawn to the second embodiment of the guide rail (16). With respect to the second embodiment, according to the claims, the first and second parts (63, 64) of the guide rail (16) have grooves that define the undercut guide groove (27). However, the specification of the '659 Patent does not use the term "grooves" to describe how the undercut guide groove (27) is defined. Instead, in the "Detailed Description of the Preferred Embodiments" section, the '659 Patent describes that the first and second parts (63, 64) of the guide rail (16) have limbs (66, 69), and that to form the undercut guide groove (27), the limbs (66, 69) have supplementary outside contours related to the circular section (43) and the rectangular section (44). *See* '659 Patent at 6:28-51. As shown in BOS's annotated Figure 4, reproduced below, both BOS and Macauto point to the supplementary outside contours of the

limbs (66, 69) as corresponding to the claimed "grooves" of the first and second parts (63, 64) that define the undercut guide groove (27).

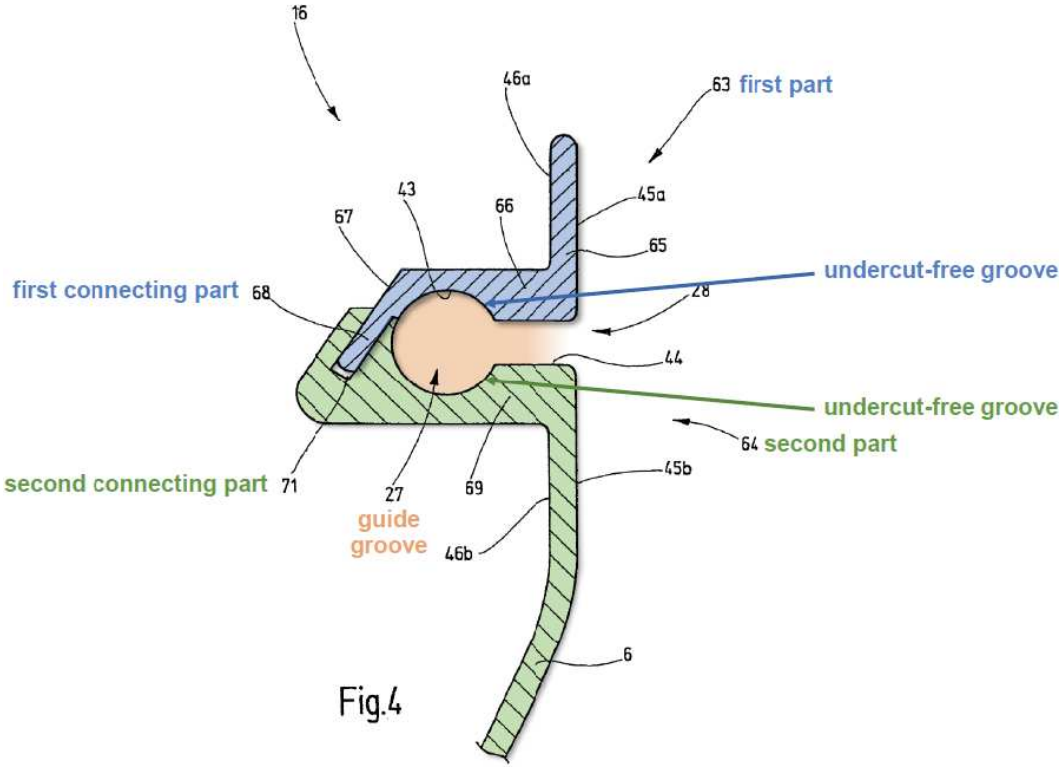
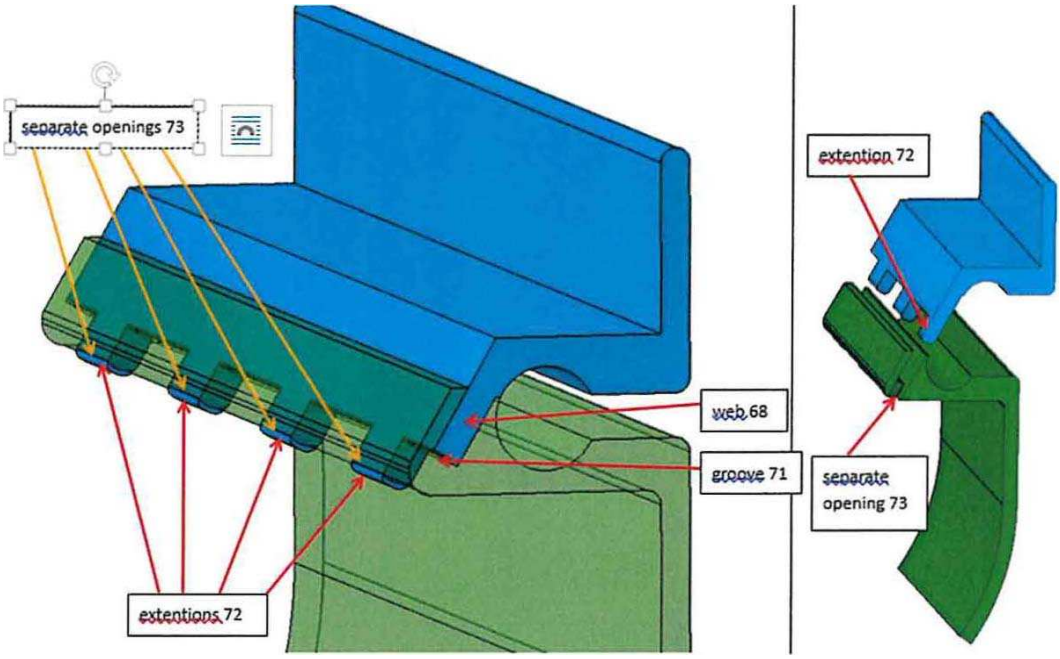


Fig.4

In the second embodiment of the guide rail (16), the limb (66) has a web (68), and the limb (69) has a groove (71) that accommodates the web (68). As shown in Macauto's 3D rendering of Figures 5 and 6, reproduced below, the web (68) has spaced-apart tabs (72), and the groove (71) has openings (73). The tabs (72) are inserted into the openings (73) to hold the first and second parts (63, 64) in the correct position in the longitudinal direction of the guide rail (16). Moreover, the tabs (72) have ribs (74), and the walls of the openings (73) are welded or bonded to the ribs (74).



IV. CLAIM CONSTRUCTION ANALYSIS FOR THE DISPUTED CLAIM TERMS

The parties request that the Court construe five terms in the asserted claims: (i) "groove," (ii) "said connecting parts/portions…being interconnectable," (iii) "undercut guide groove," (iv) "web," and (v) "integral component."

The asserted claims are reproduced below with reformatting to include each clause in its own paragraph, and with the disputed claim terms underlined and in bold:

> **22**. A guide rail arrangement (**16**) for window shades (**14**) in motor vehicles comprising an first part (**63**) in the form of an elongated molded part, said first part (**63**) including a first connecting portion (**68**) and

an elongated section formed with a **groove** that is essentially free of undercuts and extends continuously over at least a part of the length of the guide rail arrangement,

a second part (**64**) in the form of an elongated molded part, said second part (**64**) having a second connecting portion (**71**) and an elongated section formed with a **groove** that is essentially free of undercuts and extends continuously over at least a part of the length of said guide rail arrangement (**16**); and

said connecting parts (**68**, **71**) of said first and second parts (**63**, **64**) **being interconnectable** to position and retain the first and second parts (**63**, **64**) relative to one another with said **grooves** of said first and second parts (**63**, **64**) defining an **undercut guide groove** (**27**).

23. The guide rail arrangement of claim **22** in which one of said first and second connecting portions (**68**, **71**) is in the form of a **web**.

24. The guide rail arrangement of claim **23** in which one of said first and second connecting portions (**68**, **71**) includes a **groove**.

25. The guide rail arrangement of claim **24** in which said **web** (**68**) is formed with extensions (**72**).

26. The guide rail arrangement of claim **25** in which said **groove** (**71**) is formed with separate openings (**73**) for receiving said extensions (**72**).

29. The guide rail arrangement of claim **24** in which one of said first and second parts is made of a thermoplastic material.

32. The guide rail arrangement of claim **22** in which one of said first and second parts (**63**, **64**) forms an **integral component** of a section of an inside lining (**6**) of a motor vehicle.

37. A window shade (**14**) for motor vehicles comprising

a rotatably supported window shade shaft (**19**), a strip-shaped shade (**15**) having one edge fixed to said window shade shaft (**19**),

a guide (**23**, **24**) connected to an edge (**22**) of the window shade strip (**15**) distant from said window shade shaft (**19**),

at least one guide rail (**16**) for receiving and guiding one end of said window shade guide (**23**, **24**) for relative movement, said guide rail (**16**) including

a first part (**63**) in the form of an elongated molded part having a first connecting portion (**68**) and an elongated section formed with a **groove** that is essentially free of undercuts and extends continuously over at least a part of the length of said guide rail arrangement,

a second part (**64**) in the form of an elongated molded part that includes a second connecting portion (**71**) and a elongated section formed with a **groove** that is essentially free of undercuts and extends continuously over at least a part of the length of the guide rail arrangement, and

said connecting portions (**68**, **71**) of said first and second parts (**63**, **64**) **being interconnectable** to hold the longitudinal sections of the first and second parts (**63**, **64**) together such that the **grooves** therein forming a **guide groove** (**27**) for said window shade guide (**23**, **24**).

> **38**. The guide rail arrangement of claim **37** in which one of said first and second connecting portions (**68**, **71**) is in the form of a **web**, and in which one of said first and second connecting portions (**68**, **71**) includes a **groove**.
>
> **39**. The guide rail arrangement of claim **38** in which said **web** (**68**) is formed with extensions (**72**) and said **groove** (**71**) is formed with separate openings (**73**) for receiving said extensions (**72**).
>
> **42**. The guide rail arrangement of claim **37** in which one of said first and second parts (**63**, **64**) forms an **integral component** of a section of an inside lining (**6**) of a motor vehicle.

'659 Patent at 8:5-12:16.

The parties agree that the term "guide groove" in claims 22 and 37 of the '659 Patent should be construed to mean "a groove that directs or steadies the motion of something." Below the Court will address the proper construction of the disputed claim terms.

A. "groove"

Disputed Term	Claims	BOS's Proposed Construction	Macauto's Proposed Construction	Court's Construction
"groove"	22, 24, 26, 37, 38 and 39	a long cut or depression that, when viewed in crosssection, has two sidewalls	a long narrow channel or depression, which is defined by having a bottom	a long, narrow cut, channel or depression

The parties request that the Court construe the term "groove" in claims 22, 24, 26, 37, 38 and 39 of the '659 Patent. As reflected by the reference numbers in the claims, the term is directed to the undercut guide groove (27) in both the first and second embodiments of the guide rail (16). With respect to the second embodiment of the guide rail (16), the term is also directed to the supplementary outside contours of the limbs (66, 69), and the groove (71) of the limb (69) that accommodates the web (68) of the limb (66). For reference, the '659 Patent also describes unclaimed grooves. For instance, in the first embodiment, the outer part (41) of the guide rail (16) has wall sections (47, 49) and hook-shaped tabs (51, 53) that, together with the wall sections (47, 49), form grooves (52,

54). Moreover, in the second embodiment, as shown in Figure 6, the guide rail (16) is inserted into a groove (78).

BOS argues that "groove" should be construed to mean "a long cut or depression that, when viewed in cross-section, has two sidewalls." BOS argues that its proposed construction covers various grooves in the '659 Patent (specifically, the undercut guide groove (27), the supplementary outside contours of the limbs (66, 69) and the groove (71)). Relatedly, BOS argues that the '659 Patent is not restrictive toward bottomless grooves. For instance, BOS states that the groove (71) is bottomless because it has the openings (73). Moreover, BOS points out that the '659 Patent adds qualifying characteristics to various grooves in the '659 Patent (specifically, that the undercut guide groove (27) is undercut, that the supplementary outside contours of the limbs (66, 69) are essentially free of undercuts, and that the groove (71) has the openings (73)), but never restricts them to having bottoms. BOS also argues that its proposed construction is consistent with the Concise-Oxford Dictionary definition of "groove" as "a long, narrow cut or depression in a hard material." *See* Pl. Br. Ex. C, ECF No. 36-4.

Macauto argues that "groove" should be construed to mean "a long narrow channel or depression, which is defined by having a bottom." Macauto argues that its proposed construction covers various grooves in the '659 Patent (specifically, the undercut guide groove (27), the grooves (52, 54), the supplementary outside contours of the limbs (66, 69) and the groove (71)). Macauto argues that the '659 Patent does not allow for bottomless grooves. For instance, Macauto points out that the introductory description of a support part (42) in the "Objects and Summary of the Invention" section of the '659 Patent states that "[i]n the simplest design, the support part contains a groove that is U-shaped and has parallel flanks." Moreover, Macauto points out that the '659 Patent names the bottomless slot (28) a "slot" instead of a "groove." Macauto also argues that its proposed construction is consistent with the Merriam-Webster's Collegiate Dictionary definition of "groove" as "a long narrow channel or depression," as well as the follow-on definitions of "channel," "gutter," "furrow" and "trough." *See* Def. Br. Ex. 5, ECF No. 37-1. Macauto also argues that its proposed construction is consistent with expert testimony that "to exist in only one part," a groove's "two sidewalls would need to be connected . . . by way of a bottom." *See* Def. Br. Ex. 6, ECF No. 37-1.

BOS argues that Macauto's proposed construction excludes the groove (71) from the scope of the term because the groove (71) is bottomless. Relatedly, BOS disputes Macauto's argument that the '659 Patent does not allow for bottomless grooves. For instance, BOS states that the groove (71) does not cease being a "groove" because it has the openings (73). Moreover, BOS states that the '659 Patent does not restrict the grooves in the '659 Patent to having bottoms by naming the bottomless slot (28) a "slot" instead of a "groove." BOS also argues that Macauto's proposed construction is based on the dictionary definitions of "channel," "gutter," "furrow," and "trough," which do not appear in the '659 Patent, instead of the dictionary definition of "groove." BOS also argues that Macauto's proposed construction is based on conclusory observations from unsworn expert testimony.

In a separate line of arguments, BOS points out that its proposed construction is identical to the PTAB's construction of the term "groove." Macauto argues that the PTAB's construction should be disregarded because the PTAB applied the broadest reasonable construction standard used by the USPTO rather than the *Phillips* standard used by courts. Macauto contends that the PTAB did not need to construe the term

"groove" beyond having two sidewalls to reach its decision. BOS asserts that constructions are often the same under the broadest reasonable construction standard and the *Phillips* standard.

As explained below, the Court finds that the term "groove" should be construed to mean "a long, narrow cut, channel or depression" according to the dictionary definition portions of BOS's and Macauto's proposed constructions.

The Court finds that the intrinsic evidence of record does not define the term "groove" or otherwise reveal that the term has a special definition other than its ordinary meaning. *Phillips*, 415 F.3d at 1314. Instead, the '659 Patent uses "groove" in a general sense to name various features, and then adds characteristics to the grooves to help define the invention. For instance, in both the claims and the specification, the undercut guide groove (27) is undercut and has the circular section (43) and the rectangular section (44), the supplementary outside contours of the limbs (66, 69) are essentially free of undercuts, and the groove (71) has the openings (73). According to these characteristics, the undercut guide groove (27) prevents the release of the guide member (26), the guide rail (16) can be formed with injection-molding tools that do not require movable cores to

form the undercut guide groove (27), and the tabs (72) are inserted into the openings (73) to hold the first and second parts (63, 64) in the correct position in the longitudinal direction of the guide rail (16).

Both BOS's and Macauto's proposed constructions are consistent with the '659 Patent in the sense that the exemplary embodiments shown in the Figures have two sidewalls and bottoms. In the first and second embodiments of the guide rail (16), the undercut guide groove (27) is shown in the Figures as having two sidewalls and a bottom. In the second embodiment of the guide rail (16), the supplementary outside contours of the limbs (66, 69) and the groove (71) are shown in the Figures as having two sidewalls and bottoms as well. The same is true for the unclaimed grooves, including the grooves (52, 54) in the first embodiment of the guide rail (16) and the groove (78) in the second embodiment of the guide rail (16).

However, the intrinsic evidence does not express intent to limit the claimed grooves to the embodiments shown in the Figures. *Phillips*, 415 F.3d at 1323–24. Aside from describing that the groove (71) has a "base" in the lead-up to the description of the openings (73), *see* '659 Patent at 6:51-63, and describing that the unclaimed groove (78) has side walls (81,

79) and a base (82), *see* '659 Patent at 7:47-50, the '659 Patent does not demand that they are definitional limitations of the grooves.

Accordingly, the '659 Patent uses the term "groove" within its ordinary meaning. The Court finds that a jury would understand the meaning of "groove." The Court may need to construe "groove" more specifically in the future. The intrinsic evidence allows the Court to elaborate on the ordinary meaning of the term "groove" if the elaboration is helpful to the jury or if required at the summary judgment stage of the case. *See Lava Trading, Inc.*, 445 F.3d at 1350.

Finding nothing in the intrinsic evidence either demanding or prohibiting elaboration on the meaning of the term "groove" to include two sidewalls and/or bottoms, the Court turns to standard dictionaries for guidance on "the commonly understood meaning" of the term. *Phillips*, 415 F.3d at 1322. Neither BOS nor Macauto argues that the dictionary definition portion of the other party's proposed construction is inconsistent with the '659 Patent. Likewise, the Court finds that both BOS's and Macauto's dictionary definitions fairly cover the undercut guide groove (27), the supplementary outside contours of the limbs (66, 69) and the groove (71), as well as the unclaimed grooves described by the '659

Patent. The Court therefore preliminarily adopts BOS's and Macauto's dictionary definitions for its construction of the term, while preserving the right to modify its claim construction as the infringement and validity issues become known. *See also* Section V, *infra*.

B. "said connecting parts/portions . . . being interconnectable"

Disputed Term	Claims	BOS's Proposed Construction	Macauto's Proposed Construction	Court's Construction
"said connecting parts/portions…being interconnectable"	22 and 37	structures capable of connecting with one another in a mating fashion	each part/portion has a means of being joined with the other part/portion	said connecting parts/portions… having structures capable of connecting with one another in a mating fashion

The parties request that the Court construe the term "said connecting parts/portions . . . being interconnectable" in claims 22 and 37 of the '659 Patent. As reflected by the reference numbers in the claims, the term is directed to the web (68) and the groove (71) of the limbs (66, 69) of the first and second parts (63, 64) in the second embodiment of the

guide rail (16). For reference, with respect to claim 22, non-asserted dependent claims add that the first and second parts (63, 64) are "integrally connected together" (claim 30), and are both "integrally connected together" and "connected together by laser welding, ultrasonic welding, or bonding" (claim 31 and intervening claim 30). The non-asserted dependent claims are directed to welding or bonding the walls of the openings (73) of the groove (71) to the ribs (74) of the tabs (72) of the web (68).

BOS argues that "said connecting parts/portions…being interconnectable" should be construed to mean "structures capable of connecting with one another in a mating fashion." BOS argues that its proposed construction covers the web (68) and the groove (71) in the '659 Patent. BOS points out that its proposed construction is consistent with the context of the asserted claims, in which the purpose of "said connecting parts/portions . . . being interconnectable" is "to position and retain the first and second parts (63, 64) relative to one another" (claim 22) and "to hold the longitudinal sections of the first and second parts (63, 64) together" (claim 37). BOS also argues that its proposed construction is consistent with the Merriam-Webster Collegiate Dictionary definition of "interconnect" as "to connect with one another" or "to be or become mutually

connected." *See* Pl. Br. Ex. D, ECF No. 36-5. BOS also argues that its proposed construction is a clearer version of the PTAB's construction of "being connectable using the structures of the connecting parts/portions." *See* Pl. Br. Ex. B 9-11, ECF No. 36-3.

Macauto argues that "said connecting parts/portions . . . being interconnectable" should be construed to mean "each part/portion has a means of being joined with the other part/portion." Macauto argues that its proposed construction follows from the introductory description of the web (68) and the groove (71) in the "Objects and Summary of the Invention" section of the '659 Patent as "connecting means" that "cooperate" with one another. Macauto argues that the '659 Patent does not exclude non-mating techniques for connecting the first and second parts (63, 64). For instance, the introductory description of the first and second parts (63, 64) in the "Objects and Summary of the Invention" section of the '659 Patent states that they "may at least sectionally be integrally connected to one another. Such an integral connection can be produced by means of laser welding, ultrasonic welding, bonding or other connecting techniques." The '659 Patent describes that the walls of the openings (73) are welded or bonded to the ribs (74). Accordingly, Macauto states it could

agree with BOS's proposed construction without "in a mating fashion." Macauto also argues that its proposed construction is consistent with the Merriam-Webster's Collegiate Dictionary definitions of "interconnected" as "mutually joined or related" and "connectable" as "to become joined." *See* Def. Br. Ex. 5, ECF No. 37-1.

BOS argues that Macauto's proposed construction does not provide objective boundaries on the scope of the term. For instance, BOS states that Macauto's proposed construction covers connecting parts/portions that have magnets and adhesive strips. BOS also disputes Macauto's argument that the '659 Patent is not restrictive toward non-mating techniques for connecting the first and second parts (63, 64). For instance, BOS argues that the '659 Patent describes non-mating techniques for connecting the first and second parts (63, 64) to supplement, not substitute for, the web (68) and the groove (71).

As explained below, the Court finds that the term "said connecting parts/portions . . . being interconnectable" will be construed to mean "said connecting parts/portions . . . having structures capable of connecting with one another in a mating fashion."

The Court finds that the '659 Patent defines the term "said connecting parts/portions…being interconnectable" by consistently drawing a distinction between the way the first and second parts (63, 64) are "interconnected," on the one hand, and "integrally connected" (or simply "connected"), on the other hand. *Phillips*, 415 F.3d at 1314.

In the introductory description of the first and second parts (63, 64) in the "Objects and Summary of the Invention" section, the '659 Patent states:

> Connecting means are provided on both parts in order to position the two parts relative to one another. The connecting means also may extend over the entire length of both parts. For example, one of the connecting means may consist of a web that cooperates with another connecting means in the form of a groove. The web may contain pins that engage into additional openings in the groove in order to effect proper positioning in the longitudinal direction of the guide groove.

'659 Patent at 2:37-45. After referring to them as "the two interconnected parts," the '659 Patent goes on to describe that: "The two parts may at least sectionally be integrally connected to one another. Such an integral connection can be produced by means of laser welding, ultrasonic welding, bonding or other connecting techniques." '659 Patent at 2:61-64.

In the "Detailed Description of the Preferred Embodiments" section, the '659 Patent describes that:

> On the opposite side of the slot **68** [*sic*, **28**] [as the limb **67** and the web **68**], the limb **69** protrudes upwardly over the slot **28** by a certain distance and is provided with a groove **71** that accommodates the web **68** in the mounted condition as shown. The web **68** and the groove **71** extend over the entire length of the guide rail **16**.
>
> In order to hold the two parts **63** and **64** in the correct position in the longitudinal direction of the guide rail **16**, the web **68** carries tabs **72** that are spaced apart by distances of approximately 5 cm–10 centimeter, as shown in FIG. **5**. In the installed condition the tabs **72** are inserted into rectangular openings **73** provided in the base of the groove **71**, namely in an extension thereof.
>
> Ribs **74** may be provided on the tabs **72**, as shown in FIG. **5**. These ribs make it possible to locally weld the respective wall of the opening **73** to the rib **74**. This can be effected by means of ultrasonic welding, namely by pressing corresponding sonotrodes at these locations, or alternatively, the parts may be welded to one another by means of laser welding.

'659 Patent at 6:51-7:3.

In view of this description of the first and second parts (63, 64) in the '659 Patent, the context of the asserted claims is that the purpose of "said connecting parts/portions . . . being interconnectable" is "to position

and retain the first and second parts (63, 64) relative to one another" (claim 22) and "to hold the longitudinal sections of the first and second parts (63, 64) together" (claim 37). For added context, with respect to claim 22, non-asserted dependent claims add that the first and second parts (63, 64) are "integrally connected together" (claim 30), and are both "integrally connected together" and "connected together by laser welding, ultrasonic welding, or bonding" (claim 31 and intervening claim 30).

The '659 Patent consistently draws a distinction between the way the first and second parts (63, 64) are "interconnected" using the web (68) and the groove (71) and/or the tabs (72) and the openings (73), on the one hand, and "integrally connected" (or simply "connected") by welding or bonding the walls of the openings (73) to the ribs (74), on the other hand. And, as BOS suggests, the '659 Patent describes the "connecting" techniques for connecting the first and second parts (63, 64) to supplement, not replace, the "interconnecting" techniques. The Court finds that BOS's proposed construction fairly explains this distinction in a way that is helpful to the jury, and therefore adopts BOS's proposed construction for its construction of the term "said connecting parts/portions . . . being interconnectable." In addition to being consistent with the '659 Patent

as set forth above, this construction is consistent with both parties' dictionary definitions.

C. "undercut guide groove"

Disputed Term	Claim	BOS's Proposed Construction	Macauto's Proposed Construction	Court's Construction
"undercut guide groove"	22	a guide groove which includes an indentation or overhanging portion such that forming the structure using a simple two-part mold would be impractical	an undercut groove that directs or steadies the motion of something	a guide groove which includes an indentation or overhanging portion that, if the guide groove was formed in a single molded part using a simple two-part mold, would make ejecting the single molded part from the simple two-part mold almost impossible without the single molded part being able to widen and spring back into shape

The parties request that the Court construe the term "undercut guide groove" in claim 22 of the '659 Patent. As reflected by the reference numbers in the claims, the term is directed to the undercut guide groove (27) in both the first and second embodiments of the guide rail (16).

BOS argues that "undercut guide groove" should be construed to mean "a guide groove which includes an indentation or overhanging portion such that forming the structure using a simple two-part mold would be impractical." BOS argues that its proposed construction is consistent with the description of the undercut guide groove (27) in the '659 Patent. BOS also argues that its proposed construction, like the '659 Patent, comes from the context of injection molding automotive parts, and is consistent with the PLASTIC PRODUCT DESIGN textbook's introduction of an "undercut" as "an indentation or projection on a molded part which makes ejection from the simple two-part mold almost impossible." *See* Pl. Br. Ex. E, ECF No. 36-6.

Macauto argues that "undercut guide groove" should be construed to mean "an undercut groove that directs or steadies the motion of something." Macauto's proposed construction amounts to adding "undercut" to the parties' agreed construction of "guide groove." Pointing out that

the '659 Patent does not consistently use the word "undercut" in the name of the undercut guide groove (27), Macauto argues that its proposed construction is consistent with the "interchangeable" use of "undercut guide groove" and "guide groove" in the '659 Patent. Specifically, Macauto argues that although the addition of "undercut" is warranted because "undercut" is in the term itself, the term "undercut guide groove" should otherwise be construed to mean the same thing as the term "guide groove."

BOS argues that Macauto's proposed construction is really no construction at all, and therefore unhelpful to a jury.

As explained below, the Court finds that the term "undercut guide groove" should be construed to mean "a guide groove which includes an indentation or overhanging portion that, if the guide groove was formed in a single molded part using a simple two-part mold, would make ejecting the single molded part from the simple two-part mold almost impossible without the single molded part being able to widen and spring back into shape."

The intrinsic evidence of record does not define the term "undercut guide groove" or otherwise reveal that the term has a special definition other than its ordinary meaning. *See Phillips*, 415 F.3d at 1314.

Instead, the '659 Patent assumes that a person of ordinary skill in the art already understands the concept of an undercut. For instance, with respect to both the first and second embodiments of the guide rail (16), the '659 Patent simply uses "undercut" in the name of the undercut guide groove (27) and otherwise states as a fact that the undercut guide groove (27) is undercut. *See*, *e.g.*, '659 Patent at 4:40-41 (introducing that the undercut guide groove (27) has the circular section (43) and the rectangular section (44)). Similarly, with respect to the second embodiment of the guide rail (16), the '659 Patent states as a fact that the supplementary outside contours of the limbs (66, 69) are essentially free of undercuts. *See* '659 Patent at 7:20-21.

Finding nothing in the intrinsic evidence of record concerning the meaning of the term "undercut guide groove," the Court turns to extrinsic evidence for guidance on "the commonly understood meaning" of the term. *Phillips*, 415 F.3d at 1322. Macauto does not argue that BOS's textbook-based definition is inconsistent with the '659 Patent. Likewise, the Court finds that BOS's textbook-based definition fairly covers the undercut guide groove (27), excludes the supplementary outside contours of the limbs (66, 69)), and fairly explains the concept of an undercut in a way

that is helpful to a jury. The Court therefore adopts BOS's textbook-based definition for its construction of the term after replacing the formation portion with a more informative version consistent with the fact that the real issue is ejection, not formation. *See* Pl. Br. Ex. E, ECF No. 36-6. This formulation is also consistent with the '659 Patent—in the first embodiment, the outer part (41) of the guide rail (16) is elastically deformable and therefore can be removed from a mold core that produces the circular section (43) and the rectangular section (44), *see* '659 Patent at 5:13-18.

D. "web"

Disputed Term	Claims	BOS's Proposed Construction	Macauto's Proposed Construction	Court's Construction
"web"	23, 25, 38 and 39	a relatively thin and flat connecting structure	an elongation used to connect two or more parts	a thin sheet, plate or strip

The parties request that the Court construe the term "web" in claims 23, 25, 38 and 39 of the '659 Patent. As reflected by the reference numbers in the claims, the term is directed to the web (68) of the limb (66) of the first part (63) in the second embodiment of the guide rail (16), which is accommodated by the groove (71) of the limb (69) of the second

part (64). For reference, the term appears in the phrase "one of said first and second connecting portions (68, 71) is in the form of a web."

BOS argues that "web" is not a term of art with a standard meaning and should be construed to mean "a relatively thin and flat connecting structure." BOS argues that its proposed construction follows from the description of the web (68) in the '659 Patent.

Macauto argues that "web" should be construed to mean "an elongation used to connect two or more parts." Macauto argues that its proposed construction follows from the introductory description of the web (68) and the groove (71) in the "Objects and Summary of the Invention" section of the '659 Patent as "connecting means" that "cooperate" with one another. Macauto also argues that its proposed construction is consistent with the Merriam-Webster's Collegiate Dictionary definition of "web" as "a thin metal sheet, plate, or strip" or "the plate connecting the upper and lower flanges of a girder or rail." *See* Def. Br. Ex. 5, ECF No. 37-1.

Macauto argues that BOS's proposed construction is not consistent with the description of the web (68) and the groove (71) in the '659 Patent because the web (68) does not need to be a connecting structure by itself.

For instance, Macauto draws a distinction between the web (68) being a connecting structure by itself and being one of two "connecting means" that "cooperate" with one another. The introductory description of the first and second parts (63, 64) in the "Objects and Summary of the Invention" section of the '659 Patent states that they "may at least sectionally be integrally connected to one another. Such an integral connection can be produced by means of laser welding, ultrasonic welding, bonding or other connecting techniques."

BOS argues that Macauto's proposed construction does not provide objective boundaries on the scope of the term. For instance, Macauto's proposed construction covers shapes that could not be accommodated by a groove. BOS argues that its construction is consistent with the description of the web (68) and the groove (71) in the '659 Patent because the web (68) does not need to be a connecting structure by itself. The '659 Patent describes other techniques for connecting the first and second parts (63, 64) to supplement, not replace, the web (68) and the groove (71). BOS also argues that its proposed construction is consistent with Macauto's dictionary definition of "web."

As explained below, the Court finds that the term "web" should be construed to mean "a thin sheet, plate or strip."

The context in which the term "web" is used in the claims implies that the construction of the term should be directed to the form of the web (68), not the function of the web (68) with respect to connecting the first and second parts (63, 64). *Phillips*, 415 F.3d at 1314. Initially, the term first appears in dependent claims 23 and 38 in the phrase "one of said first and second connecting portions (68, 71) is in the form of a web." Independent claims 22 and 37 already include the term "said connecting parts/portions . . . being interconnectable," which, as set forth above, will be construed to mean "said connecting parts/portions . . . having structures capable of connecting with one another in a mating fashion." Accordingly, to avoid redundancy between the independent claims and the dependent claims, the Court rejects both BOS's and Macauto's proposed constructions to the extent they are incorrectly directed to the function of the web (68) with respect to connecting the first and second parts (63, 64).

The intrinsic evidence of record does not define the term "web" or otherwise reveal that the term has a special definition other than its ordinary meaning. *See Phillips*, 415 F.3d at 1314. Instead, the '659 Patent simply uses "web" to name the web (68).

Finding nothing in the intrinsic evidence of record concerning the meaning of the term "web," the Court turns to standard dictionaries for guidance on "the commonly understood meaning" of the term. *Phillips*, 415 F.3d at 1322. Setting aside the portions directed to function, the Court finds that BOS and Macauto's matching dictionary definition fairly covers the web (68). For instance, with respect to the web (68) and the groove (71), in the "Detailed Description of the Preferred Embodiments" section, the '659 Patent describes that:

> …The wall **67** ends approximately at the height of a plane that corresponds to the upper limiting wall of the slot **28**. Beginning at this location, the wall or the limb **66** transforms into a narrow web **68** that protrudes, as shown in FIG. **4**, over a plane defined by the center of the circular section **43** and the center of the slot **28**. Considering the circular section **43** as a clock, the point of transition between the wall **67** and the web **68** that has a smooth outer surface that lies between 10 o'clock and 11 o'clock.
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> ***
>
> On the opposite side of the slot **68** [*sic*, **28**] [as the limb **67** and the web **68**], the limb **69** protrudes

> upwardly over the slot **28** by a certain distance and is provided with a groove **71** that accommodates the web **68** in the mounted condition as shown. The web **68** and the groove **71** extend over the entire length of the guide rail **16**.

'659 Patent at 6:34-42 and 6:51-55. The Court therefore adopts BOS and Macauto's matching dictionary definition for its construction of the term with the exception of the metal portion, which is inconsistent with the '659 Patent because the first and second parts (63, 64) are made of thermoplastic material. *See*, *e.g.*, '659 Patent at 7:4-8.

E. "integral component"

Disputed Term	Claims	BOS's Proposed Construction	Macauto's Proposed Construction	Court's Construction
"integral component"	32 and 42	a part that is formed as a unit with a larger structure	a part composed of two or more pieces, which are connected as if they were one single piece	a component that is formed as a unit with a larger structure

The parties request that the Court construe the term "integral component" in claims 32 and 42 of the '659 Patent. As reflected by the reference numbers in the claims, the term is directed to one of the first and second parts (63, 64) in the second embodiment of the guide rail (16). The

term appears in the phrase "forms an integral component of," which is directed to the relationship of one of the first and second parts (63, 64) with a section of an inside lining (6).

BOS argues that "integral component" should be construed to mean "a part that is formed as a unit with a larger structure." BOS argues that its proposed construction covers the second part (64) in the '659 Patent in the context of its relationship with the inside lining (6). For instance, BOS points out that the introductory description of the first and second parts (63, 64) in the "Objects and Summary of the Invention" section of the '659 Patent states that it "is possible to make one of the two parts integrally with a section of the inside lining." BOS also argues that its proposed construction is consistent with the Merriam-Webster Collegiate Dictionary definition of "integral" as "formed as a unit with another part." *See* Pl. Br. Ex. D, ECF No. 36-5.

Macauto argues that "integral component" should be construed to mean "a part composed of two or more pieces, which are connected as if they were one single piece." Macauto argues that its proposed construction covers the second part (64) in the '659 Patent in the context of its relationship with the inside lining (6). For instance, Macauto points out

that the introductory description of the first and second parts (63, 64) in the "Objects and Summary of the Invention" section of the '659 Patent states that it "is possible to make one of the two parts integrally with a section of the inside lining." Macauto also argues that its proposed construction is consistent with the Merriam-Webster's Collegiate Dictionary definitions of "integral" as "essential to completeness" or "composed of constituent [*sic*, integral] parts" and "component" as "a constituent part." *See* Def. Br. Ex. 5, ECF No. 37-1.

Macauto argues that BOS's proposed construction is not supported by the evidence because it suggests that there must be a relative size difference between the two joined parts.

BOS argues that Macauto's proposed construction is ambiguous because it redefines one "component" as something "composed of two or more pieces." The claim term appears in the phrase "forms an integral component of," which addresses use, not composition. BOS also argues that both Macauto's proposed construction and Macauto's argument against BOS's proposed construction wrongly focus on the combination of one of the first and second parts (63, 64) and a section of the inside lining (6), as opposed to one of the first and second parts (63, 64) by itself.

As explained below, the Court finds that the term "integral component" should be construed to mean "a component that is formed as a unit with a larger structure."

At the outset, the Court finds that the context in which the term "integral component" is used in the claims implies that the construction of the term should be directed to one of the first and second parts (63, 64) by itself. Specifically, the term appears in the phrase "forms an integral component of," which is directed to the relationship of one of the first and second parts (63, 64) with a section of the inside lining (6). Accordingly, the Court rejects Macauto's proposed construction because it focuses on the combination of one of the first and second parts (63, 64) and a section of the inside lining (6).

The intrinsic evidence of record does not define the term "integral component" or otherwise reveal that the term has a special definition other than its ordinary meaning. *See Phillips*, 415 F.3d at 1314. Instead, the '659 Patent assumes that a person of ordinary skill in the art understands the concept of integral components. For instance, in the "Background of the Invention" section, the '659 Patent describes that "certain

difficulties can occur when integrating the guide rail into the inside lining." '659 Patent at 1:39-41. In the introductory description of the first and second parts (63, 64) in the "Objects and Summary of the Invention" section, the '659 Patent describes that: "Since neither part contains undercuts, it also is possible to make one of the two parts integrally with a section of the inside lining, for example, of the C-column. In other words, this part of the guide rail arrangement is injection-molded integrally with the plate-shaped part of the lateral lining." *Id.* at 2:32-36.

In the "Detailed Description of the Preferred Embodiments" section, the '659 Patent describes that:

> The other part **64** of the guide rail **16** forms an integral component of the inside lining **6**…
>
> ***
>
> The guide rails **16** according to FIGS. **3** and **4** are shown and described as forming, at least sectionally, part of the inside lining, for example, of the C-column. However, it will be understood that the guide rails **16** also could be made separately thereof and connected to snap-in elements of the lateral lining or the car body, such as by means complementary tabs or snap-in elements.
>
> The visual side section **45b** then would end approximately at the location at which the arc-shaped progression begins in the structure. The tabs for interlocking the guide rail **16** would be ar-

> ranged, for example, on the limb **69** in an extension of the slot **28** in the embodiment shown in FIGS. **4** and **5**.

Id. at 6:43-45 and 7:29-35.

Finding nothing in the intrinsic evidence of record concerning the meaning of the term "integral component," the Court turns to standard dictionaries for guidance on "the commonly understood meaning" of the term. *See Phillips*, 415 F.3d at 1322. The Court finds that BOS's dictionary definition fairly covers one of the first and second parts (63, 64) in the context of its relationship with a section of the inside lining (6), and fairly explains the concept of integral components in a way that would be helpful to a jury. The Court therefore adopts BOS's dictionary definition for its construction of the term after replacing "part" with "component" for consistency with the term itself.

V. CONCLUSION

The Court construes the disputed claim terms as set forth above. The Court reserves the right to modify its claim constructions as the infringement and validity issues of the asserted patent become known.

SO ORDERED.

DATED October 18, 2019.

BY THE COURT:

/s/Terrence G. Berg
TERRENCE G. BERG
United States District Judge