

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TERMAX COMPANY,
Petitioner,

v.

ILLINOIS TOOL WORKS INC.,
Patent Owner.

Case IPR: Unassigned
U.S. Patent No. 11,578,740

PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. §312 AND 37 C.F.R. §42.104

(Claims 1-20)

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PETITIONER’S EXHIBIT LIST

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Ex. 1002	U.S. Provisional Patent Appl. No. 61/739,604
Ex. 1003	Prosecution History of U.S. Patent No. 9,982,694
Ex. 1004	Prosecution History of U.S. Patent No. 10,683,882
Ex. 1005	Prosecution History of U.S. Patent No. 11,578,740
Ex. 1006	Declaration of Timothy C. Hicks
Ex. 1007	U.S. Patent No. 8,561,265 (“Benedetti”)
Ex. 1008	Final Written Decision in IPR2021-00724
Ex. 1009	Illinois Tool Works, Inc. v. Termax Co., Appeal Nos. 23-1252 and -1254, Order Granting Motion to Dismiss dated March 8, 2023
Ex. 1010	Illinois Tool Works, Inc. v. Termax Co., Appeal Nos. 23-1252 and -1254, Docketing Statement.
Ex. 1011	U.S. Patent Publication No. 2011/0119875 A1 (“Iwasaki”)
Ex. 1012	WO 2011/043352A1 (“Hirano”)
Ex. 1013	Certified Translation of WO 2011/043352A1 (“Hirano”)
Ex. 1014	U.S. Patent Application No. 2005/0189775 A1 (“Pue”)
Ex. 1015	U.S. Patent Application No. 2005/0079033 A1 (“‘033 Application”)
Ex. 1016	U.S. Patent No. 10,683,882 (the “’882 Patent”)

CLAIM LISTING

Ref. #	Listing of Challenged Claims
1[preamble]	1. A press-in retainer, comprising:
1[a]	a retainer head including a collar and a seal disposed at least partially about the collar; and
1[b]	a clip portion projecting from the collar,
1[c]	wherein the seal includes a main body engaging the collar and a sealing foot projecting at an obtuse angle from a distal surface of the main body to a free edge when in an unstressed condition such that the sealing foot is disposed entirely outboard from the collar, wherein the sealing foot is contiguous with the main body, the obtuse angle facing the clip portion,
1[d]	wherein the sealing foot is configured to flex from the unstressed condition toward a substantially flattened condition about a living hinge located at an intersection of the sealing foot and body portion while remaining entirely outboard from the main body, and
1[e]	wherein, in the substantially flattened condition, the obtuse angle between the sealing foot and the distal surface of the main body approaches a flat contiguous surface.
2	2. The press-in retainer of claim 1, wherein the press-in retainer is configured to join a surface element to a support structure, and wherein the clip portion is configured for insertion into an acceptance opening of the support structure
3	3. The press-in retainer of claim 2, wherein the retainer head and the clip portion are molded as a unitary structure.
4	4. The press-in retainer of claim 2, wherein the clip portion comprises a stem extending from the collar.
5	5. The press-in retainer of claim 4, wherein the clip portion comprises at least one flexible wing that extends in an angled relation away from an end of the stem, wherein the flexible wing comprises a dogleg configuration with a proximal face surface and a distal face surface, wherein the proximal face surface extends from the end of the stem radially outwardly, toward the collar, and to the distal face surface, and wherein the distal face surface extends from the proximal face surface radially inwardly, toward the collar, and to a free tip of the flexible wing.

CLAIM LISTING
(Continued)

Ref. #	Listing of Challenged Claims
6	6. The press-in retainer of claim 5, wherein the flexible wing is configured to flex toward the stem during insertion through the acceptance opening of the support structure, and wherein the distal face surface is configured to press against an interior surface of the acceptance opening to urge the retainer downwardly into the acceptance opening.
8	8. The press-in retainer of claim 2, wherein the collar includes an interior collar portion and a reduced thickness outer annular lip disposed circumferentially about the interior collar portion, and wherein the outer annular lip extends outwardly from a perimeter of the interior collar portion.
9	9. The press-in retainer of claim 8, wherein the main body of the seal is annular and further includes a circumferential acceptance slot that extends circumferentially along an inner diameter of the main body, and wherein the circumferential slot is configured to receive the outer annular lip of the collar.
11[preamble]	11. A retainer assembly configured to join a surface element to a support structure so that the surface element assumes a contacting abutting relation with the support structure, the support structure having an acceptance opening, the retainer assembly comprising:
11[a]	a retainer head including a collar, a platform, and a neck disposed between the collar and the platform, the retainer head being configured for placement into a channel defined by the surface element;

CLAIM LISTING
(Continued)

Ref. #	Listing of Challenged Claims
11[b]	a seal disposed about a perimeter of the collar and comprising an annular main body and a sealing foot, the sealing foot being connected to the main body by a living hinge extending along a perimeter of the main body and being disposed entirely outboard from the collar, and the sealing foot extending from the living hinge to a free edge, wherein an inner diameter of the main body at least partially contacts an outer diameter of the collar, wherein a contacting surface of the sealing foot is contiguous with a distal surface of the main body, the contacting surface and the distal surface both facing away from the retainer head, and wherein the contacting surface forms an obtuse angle with the distal surface when the seal is in an unstressed condition; and
11[c]	a clip portion extending from the collar of the retainer head, the clip portion being configured for insertion into the acceptance opening of the support structure, and the clip portion comprising at least one surface that is configured to press against an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening,
11[d]	wherein the seal is configured to flex from the unstressed condition toward a fully flexed condition to bring the surface element closer to the support structure, and wherein, in the fully flexed condition, the free edge of the sealing foot is disposed radially outwardly and closer to the retainer head such that the contacting surface of the sealing foot and the distal surface of the main body form an angle greater than the obtuse angle of the unstressed condition.
12	12. The retainer assembly of claim 11, wherein the retainer head and the clip portion are molded as a unitary structure.
13	13. The retainer assembly of claim 11, wherein the clip portion comprises a stem extending from the collar.

CLAIM LISTING

(Continued)

Ref. #	Listing of Challenged Claims
16	16. The retainer assembly of claim 13, wherein the clip portion comprises a pair of flexible wings that extend in angled relation away from an end of the stem in opposing directions, wherein each of the pair of flexible wings comprises a dogleg configuration with a proximal face surface and a distal face surface, wherein the proximal face surface extends from the end of the stem radially outwardly, toward the collar, and to the distal face surface, and wherein the distal face surface extends from the proximal face surface radially inwardly, toward the collar, and to a free tip of the flexible wing, and wherein the distal face surface is configured to press against the interior surface of the acceptance opening to urge the retainer assembly downwardly into the acceptance opening.
17[preamble]	17. A retainer assembly configured to join a surface element to a support structure, the support structure having an acceptance opening, the retainer assembly comprising:
17[a]	a retainer head including a collar, a platform, and a neck disposed between the collar and the platform, the retainer head being configured for placement into a channel defined by the surface element;
17[b]	a seal disposed about a perimeter of the collar and comprising an annular main body and a sealing foot, the sealing foot being connected to the main body by a living hinge extending along a perimeter of the main body and being disposed entirely outboard from the collar, and the sealing foot extending from the living hinge to a free edge that is disposed radially outwardly from the living hinge, wherein an inner diameter of the main body at least partially contacts an outer diameter of the collar, wherein a contacting surface of the sealing foot is contiguous with a distal surface of the main body, the contacting surface and the distal surface both facing away from the retainer head, and wherein the contacting surface forms an obtuse angle with the distal surface when the seal is in an unstressed condition; and
17[c]	a clip portion extending from the collar of the retainer head,

CLAIM LISTING

(Continued)

Ref. #	Listing of Challenged Claims
17[d]	wherein the collar includes an interior collar portion and a reduced thickness outer annular lip disposed circumferentially about the interior collar portion such that a step is disposed at an intersection of the interior collar portion and the outer annular lip, the outer annular lip extending radially outwardly from a perimeter of the interior collar portion, and
17[e]	wherein the main body of the seal further includes a circumferential acceptance slot that extends circumferentially along the inner diameter of the main body and is configured to receive the annular lip of the collar.
18	18. The retainer assembly of claim 17, wherein the clip portion is configured for insertion into the acceptance opening of the support structure and comprises at least one angled surface that is configured to press against an interior surface of the acceptance opening to urge the retainer further into the acceptance opening.
19	19. The retainer assembly of claim 18, wherein the seal is configured to flex from the unstressed condition toward a fully flexed condition to bring the surface element closer to the support structure in response to the at least one angled surface pressing against the interior surface of the acceptance opening to urge the retainer assembly downwardly into the acceptance opening, wherein, in the fully flexed condition, the free edge of the sealing foot is disposed farther radially outwardly and closer to the retainer head than in the unstressed condition, and wherein, in the fully flexed condition, the contacting surface of the sealing foot and the distal surface of the main body form an angle greater than the obtuse angle of the unstressed condition.

I. INTRODUCTION

Pursuant to 35 U.S.C. §§311, 314(a), and 37 C.F.R. §42.100, Termax Company (“Petitioner”) respectfully requests that the Board cancel Claims 1-20 of U.S. Patent No. 11,578,740 (“’740 Patent,” Ex. 1001).

II. MANDATORY NOTICES

A. Real Party in Interest

Pursuant to 37 C.F.R. §42.8(b)(1), Petitioner certifies that the real party-in-interest is Termax Company. Termax Company is a wholly owned subsidiary of LISI Holding North America.

B. Related Matters

Pursuant to 37 C.F.R. §42.8(b)(2), to the best knowledge of the Petitioner, the ’740 Patent is involved in the following case (the “Litigation”):

Case Heading	Number	Court	Filed
Illinois Tool Works Inc. v. Termax Company	1-20-cv-05416	ND IL	Originally filed asserting other patents, September 11, 2020; Second Amended Complaint first asserting the ’740 Patent filed February 28, 2023

Additionally, the Board’s decision in IPR2021-00724 affects the current petition. In that matter, the Board determine that the claims of the parent of the ’740 Patent, U.S. Patent No. 10,683,882 (the “’882 Patent”) were unpatentable in view of U.S. Patent No. 8,561,265 (“Benedetti”) which is relied upon herein as a ground for

invalidity. Ex. 1008, IPR2021-00724, Paper No. 40 (“FWD”). The Board determined that claims having the scope of the now-challenged ’740 Patent would be invalid in light of that prior art. In violation of its obligations under 37 C.F.R. §42.73 prohibiting Patent Owner (“PO”) from taking positions before the Patent Office inconsistent with those expressed in the Board’s FWD, PO deceptively secured issuance of the challenged claims—which the examiner found to be “patentable indistinct”—by withholding the FWD at the time it filed a terminal disclaimer disclaiming the term of the already-cancelled ’882 Patent.¹

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¹ Although PO ultimately submitted the FWD a week later without comment as part of a larger Information Disclosure Statement, PO never indicated that the FWD negated its previously-filed terminal disclaimer—even before it was signed and submitted by PO’s attorney.

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Please address all correspondence to lead and back-up counsel. Petitioner consents to service by email at the addresses above.

III. GROUNDS FOR STANDING

The '740 Patent is eligible for IPR, and Petitioner is not barred or estopped from requesting this IPR. 37 C.F.R. §42.104(a).

IV. THE '740 PATENT

The '740 Patent issued from U.S. Patent Application Serial No. 16/897,947, and claims priority to, inter alia, International Application No. PCT/US2013/073861, filed Dec. 9, 2013, and U.S. Provisional Appl. No. 61/739,604 filed Dec. 19, 2012. Based on claimed priority, the '740 Patent would be evaluated under the rules preceding the America Invents Acts.

A. SPECIFICATION

The '740 Patent acknowledges use of push-in type retainers was well-known, observing that in automobiles “retainers are used to secure molding or other surface structures to underlying support elements such as body panels, support beams or the like.” Typically, retainers are “configured for attachment to a doghouse” element on the underside of a surface structure, such as trim molding. *Id.*, 1:39-42. Figure

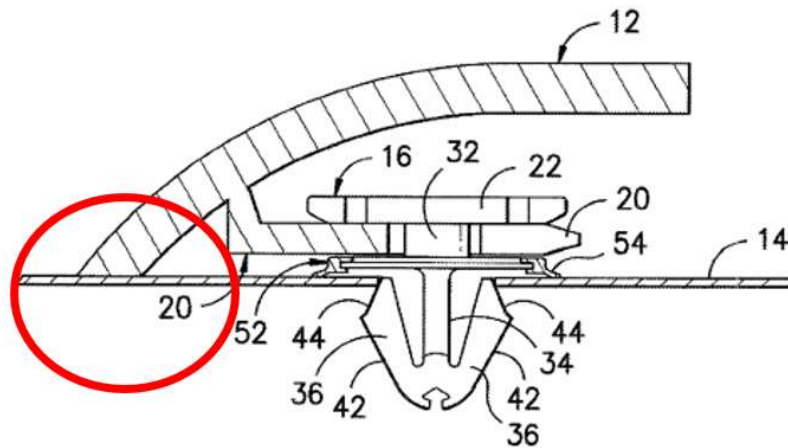


FIG. -5-

Ex.1001, Fig.5, 1:52-58.

Prior art W-clips employed seals to prevent, inter alia, moisture penetration from the interior to the underlying supporting sheet metal. Ex.1001, 2:10-23. The '740 Patent warns detachable foam seals may dislodge. Ex.1001, 2:38-41. Additionally, because foam seals must be compressed to actually seal, the foam's natural resistance to compression partially offset pull-down forces produced by the deflectable wings. *Id.*, 2:51-66.

The '740 Patent describes a fastener having a lower collar including a reduced thickness outer lip with a "relatively soft, deformable covering [*i.e.*, seal] at the perimeter edge of the lower collar[.]" *Id.*, 5:1-7, 47-65, 6:1-5.

A flared sealing foot extends radially at a downward angle. *Id.*, 6:13-14. Upon the fastener's insertion, this sealing foot flexes, flattening while maintaining contact

with the upper surface of the sheet metal. *Id.*, 6:22-26. As depicted in Figure 3, this seal (50) flexes about a living hinge (56) while maintaining contact with upper surface of sheet metal panel (14):

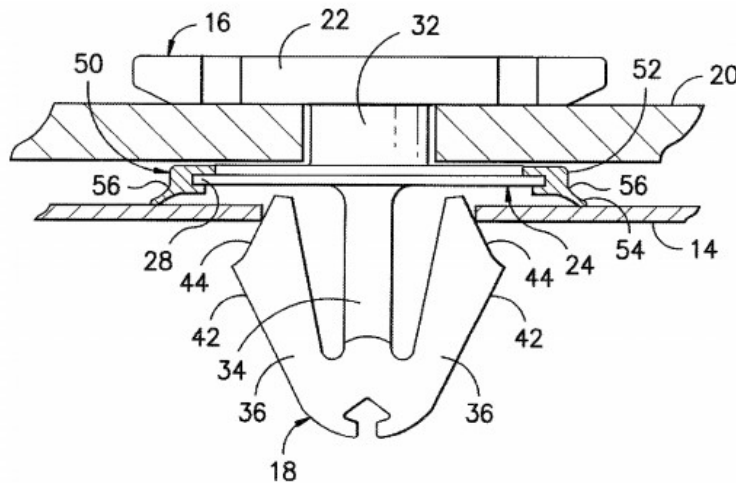


FIG. -3-

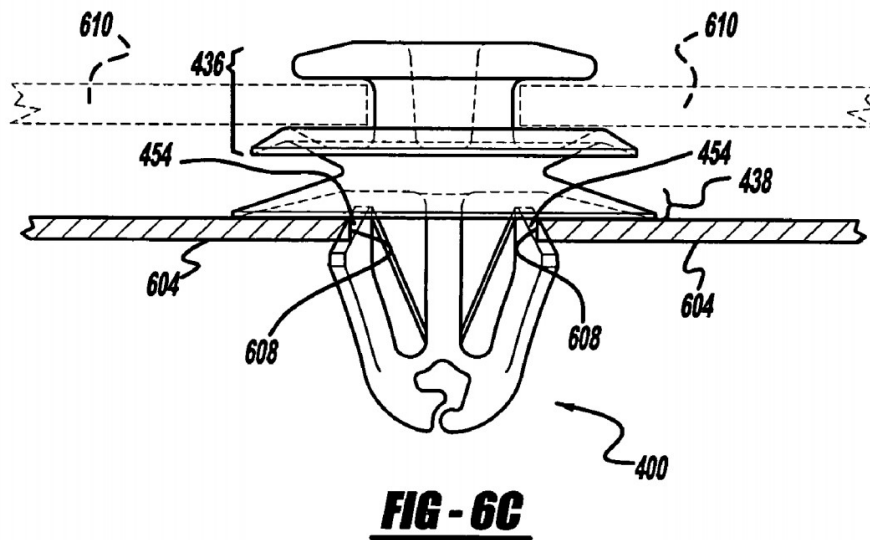
Id., Fig.3.

B. PROSECUTION HISTORY

1. Parent Application No. 14/652,819 (U.S. Patent No. 9,982,694) (the “’694 Patent”)

On December 9, 2013, applicant filed a PCT application (“’819 Application”), claiming priority to a provisional application filed on December 12, 2012. Ex.1003, 5; Ex.1002, 1-8.

Its claims were rejected as obvious in light of U.S. Patent Appl. No. 2005/0079033 (“’033 Application”), shown below.



Ex.1003, 225-226. Ex.1015, Fig.6C.

Applicant emphasized the claimed seal and clip were formed of different materials, not integrally formed. Ex.1003, 252-53. Based upon this distinction, the claims were allowed and issued in the '694 Patent. Ex.1003, 264

2. Continuation Application No. 15/987,986 (U.S. Patent No. 10,683,882 Patent (the "'882 Patent"))

The '882 Patent issued from a continuation of the '694 Patent. Ex. 1016, p. 1 (21), 1:7-14. In response to a rejection, Applicant narrowed its claims to require the sealing foot be "configured to flex from the unstressed condition toward the fully flexed condition" to distinguish from known inflexible seals. Ex.1004, 144, 151. The examiner allowed the amended claims. Ex.1004, 162.

3. IPR Invalidates Claims of the '882 Patent

On March 25, 2021, Petitioner filed a petition challenging the patentability of the '882 Patent. IPR2021-00724 (the "'724 IPR"), Paper No. 1. In a Final Written Decision ("FWD"), the Board found all claims of the '882 Patent to be unpatentable based upon, *inter alia*, U.S. Patent No. 8,561,265 ("Benedetti"). Ex. 1008. Benedetti's figure 10 is depicted below:

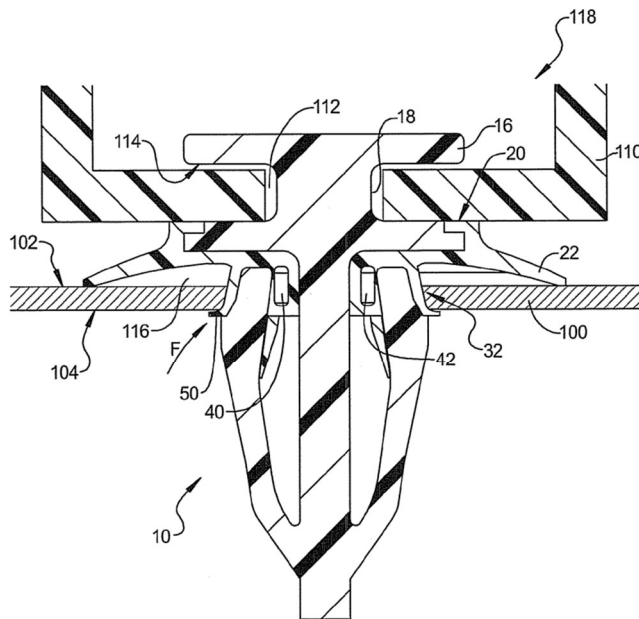


FIG 10

Ex.1007, Fig.10.

The '882 Patent claimed a sealing foot "disposed outboard" the clip's collar. PO argued this limitation required it be disposed *entirely* outboard and that Benedetti lacked such a sealing foot.

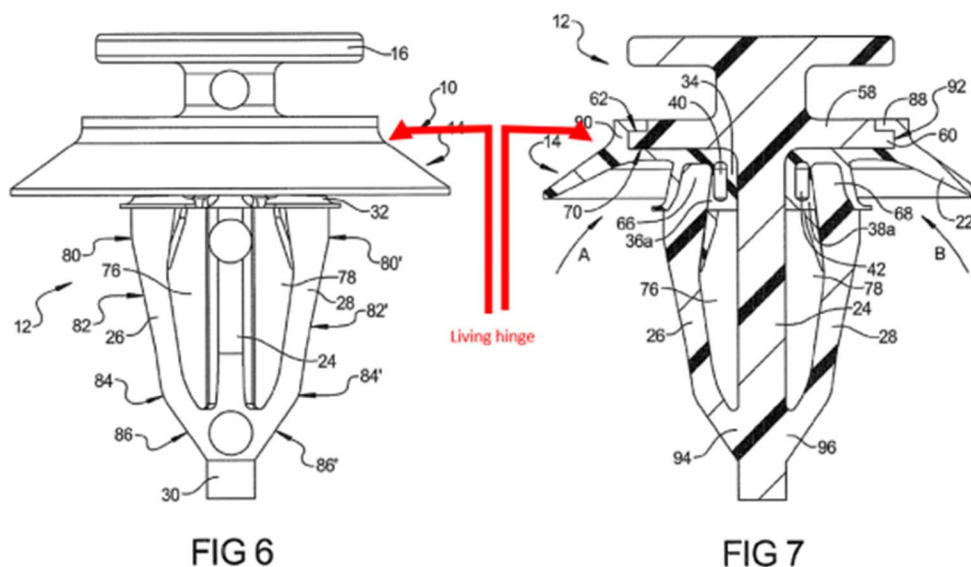
The Board both rejected PO's proposed construction of "outboard" to mean "*entirely* outboard" and separately addressed patentability under PO's construction. The Board concluded that Benedetti (relied upon herein) disclosed a sealing foot "entirely outboard" the lower collar:

Because **the skirt portion of Benedetti's resilient seal member 22 lies entirely outboard of the second platform**, Benedetti discloses the "disposed outboard" limitation even if we adopted Patent Owner's proposed construction of "disposed outboard" [i.e., to mean *entirely* outboard].

Ex.1008 at 59 n.21. (Emphasis added.)²

Additionally, PO asserted Benedetti lacked a sealing foot configured to flex about "a living hinge provided between the body portion and the sealing foot," arguing "there is no point where the seal foot in Benedetti joins the seal body." *Id.* at 59-61. The Board rejected PO's arguments because Petitioner had identified a point where the slope of the skirt portion of the seal changed "where the sealing foot meets the seal body." *Id.* at 61-62 (citing annotated Figs. 6-7, below):

² Thus, despite differences in language, the challenged claims of the '740 Patent are not "patentably distinct" from those cancelled in IPR2021-00724. *Cf.* 37 C.F.R. §42.73(d)(3) (precluding patent owner from "taking action inconsistent with" adverse Board decision).



Although PO initially appealed this decision to the Federal Circuit (Ex.1010, Fed. Cir. Appeal. Nos. 23-1252,-1254, Docket), PO immediately abandoned its appeal, voluntarily dismissing it on March 8, 2023. Ex.1009.

4. Continuation Application No. 16/897,947 ('740 Patent)

During pendency of the IPR, PO filed a further continuation on June 10, 2020. Ex.1001, 1:7-15. On November 9, 2022. five weeks after the Board's decision invalidating the claims of the '882 Patent, PO presented the current claims of the '740 Patent to the examiner. In those claims, ITW amended the previously pending claims to explicitly recite that the sealing foot be disposed "entirely outboard from the collar," and that the living hinge be "located at an intersection of the sealing foot and body portion[.]" Contemporaneous with its amendment, PO filed a terminal disclaimer with respect to the already-dead '882 Patent to overcome the examiner's non-statutory, obviousness-type double-patenting rejection. *See* Ex.1005, at 308.

Despite its obligation under 37 C.F.R. §42.73 not to take positions inconsistent with those expressed in the Board's FWD, PO did not alert the examiner at the time it submitted its amendment and terminal disclaimer of the Board's conflicting determination that Benedetti taught the claims as amended. Instead, PO mischaracterized its amendments as having been solely for "purposes of clarity." Ex.1005, at 306. Moreover, PO discouraged the examiner from undertaking further review. *Id.* ("Applicant respectfully submits that . . . the amendments may be entered without further searching.").

On or before November 14, 2022, the examiner determined to allow the challenged claims of the '740 Patent. [Ex.1005, at 377]. PO thereafter submitted the Board's FWD. [Ex.1005, at 315-319].

V. DISCRETIONARY DENIAL INAPPROPRIATE

Discretionary denial is inappropriate under 35 U.S.C. §325(d). Under this Section, both the art and arguments relied upon must have been previously presented to the Office. *See Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, at 8 (PTAB Feb. 13, 2020) (precedential).

The grounds asserted herein rely upon Benedetti and WO 2011/043352A1 ("Hirano"). While these references were before the Examiner, they were not evaluated by the Examiner, either alone or in combination with other references. *See Advanced Bionics, LLC, id.* at 9 n.10 (discretionary denial dependent upon "the

extent to which the asserted art was evaluated during examination”). The Board has consistently declined to exercise discretion under Section 325(d) when the only fact Patent Owner points to is that reference was disclosed during prosecution. *See, e.g., HTC Corporation et al v. Motiva Patents, LLC*, IPR2019-01664, Paper 9 at 10-11 (PTAB April 3, 2020) (instituting despite citation of reference during prosecution where material error shown); *Amneal Pharms. LLC v. Alkermes Pharma Ireland Ltd.*, IPR2018-00943, Paper 8 at 40 (PTAB Nov. 7, 2018) (Patent Owner provided no evidence “about the extent to which the Examiner evaluated” reference).

Moreover, additional factors strongly support instituting the present petition. During prosecution, PO pressed for issuance of the challenged claims in violation of its obligations under 37 C.F.R. § 42.73(d) not to advance claims inconsistent with the Board’s earlier FWD. In that FWD, the Board determined that claims having the scope sought in this continuation (*i.e.*, ‘740 Patent) were unpatentable in view of Benedetti, as more fully described herein. PO deliberately avoided the Board’s scrutiny by seeking these claims in a continuing application, rather presenting its amendments in the IPR. Denying the Board an opportunity to address the implications of its earlier decision would merely encourage such gamesmanship.³

³ Additionally, as noted above, PO did not provide the Board’s FWD until two days *after* the Examiner had deemed the claims allowable (*i.e.*, November 14, 2022). Ex.1005, p. 380, Index of Claims dated November 14, 2022. PO did not submit the

(Footnote Continued . . .)

Further, following issuance of the '740 Patent, PO dismissed its Federal Circuit appeal of the FWD. As a consequence, that decision is now a **final judgment**, collaterally estopping PO from asserting the validity of claims patentably indistinct from those of the '882 Patent. The examiner had no occasion to consider these post-issuance developments.

This Petition thus presents new arguments with respect to the cited prior art not previously addressed by the examiner, and presents for the first-time arguments concerning estoppels arising from the Board's prior decision and subsequent appeal before the Federal Circuit. Denial of institution in these circumstances would effectively permit the PO to collaterally nullify the Board's FWD. Denial is inappropriate under 35 U.S.C. §325(d).

Discretionary denial also is inappropriate under 35 U.S.C. §314. The factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) strongly favor institution. The parallel district court case is in the early stage. No trial date is set. Final contentions concerning the '740 Patent have not been completed. Petitioner has diligently prepared this Petition since the '740 Patent was first asserted in that action on February 28, 2023. A motion to stay is being filed contemporaneously in District Court. Moreover, the PTAB is a more

Board's FWD until November 16, 2022. Ex.1005, p.369, Information Disclosure Statement dated November 16, 2022.

appropriate—if not the only—forum for application of Section 42.73(d)(3). *See Stragent, LLC v. BMW Of North America, LLC*, Nos. 20-510-LPS, 20-511-LPS, 20-512-LPS, 2021 WL 1147468, *7 (D. Del. March 25, 2021) (assuming, but not deciding, that 37 C.F.R. § 42.73(d)(3) applied in District Court proceedings). In the present proceeding, Section 42.73(d)(3) precludes PO from advancing arguments in support of the challenged claims inconsistent with the Board’s earlier FWD. *See* 37 C.F.R. § 42.73(d)(3) (precluding an application from taking inconsistent actions, “including,” but not limited to, “obtaining in any patent ... [a] claim that is not patentably distinct from a finally refused or cancelled claim.”)

Thus, an IPR is the most appropriate venue for resolving this issue.

VI. LEVEL OF SKILL

A person of ordinary skill in this art (POSA) would have at least a bachelor’s degree in Mechanical Engineering and 2 years’ experience in push-in fastener engineering—specifically sealing fasteners and related injection molding manufacturing processes and materials. Ex.1005, ¶21.

VII. CLAIM CONSTRUCTION

Words in a claim are given their plain meaning, as understood by a POSA in view of the patent and file history. 37 C.F.R. §42.100(b); 83 Fed. Reg. 197, 51340 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005)

(*en banc*). Other than the following terms, Petitioner proposes no claim language requires express construction to resolve this Petition.

A. “living hinge located at an intersection of the sealing foot and body portion”

Challenged claims 1-10 recite a seal having a “living hinge located at an intersection of the sealing foot and body portion.” The Board previously construed the term “living hinge” to mean “**an area** integral to the hinged part at which the part will readily bend or flex.” Ex.1008, 61 (emphasis added). The Board noted that Benedetti’s living hinge was located “where the sealing foot **meets** the seal body.” Ex.1008, 59-62 (emphasis added).

Living Hinge

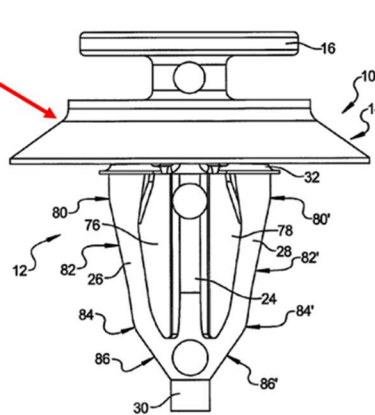


FIG 6

The “living hinge” is recited as located at “an intersection of the sealing foot and body portion.” An *intersection* is “a place or area where two or more things ... intersect.” “Intersection.” *Merriam-Webster.com Dictionary*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/intersection>. Accessed 19 Sep. 2023;

see also, “Intersect.” *Merriam-Webster.com Dictionary*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/intersect>. Accessed 19 Sep. 2023. (*intersect* means “**to meet** and cross at a point . . . to share a common area : OVERLAP”) (emphasis added); Ex.1006, ¶38.

This meaning of intersection is consistent with the patent’s disclosures. *Id.*, ¶39. Figure 3 depicts an integrally formed sealing foot (54) that flexes “about a living hinge 56 substantially at the *intersection* with body portion (52):”

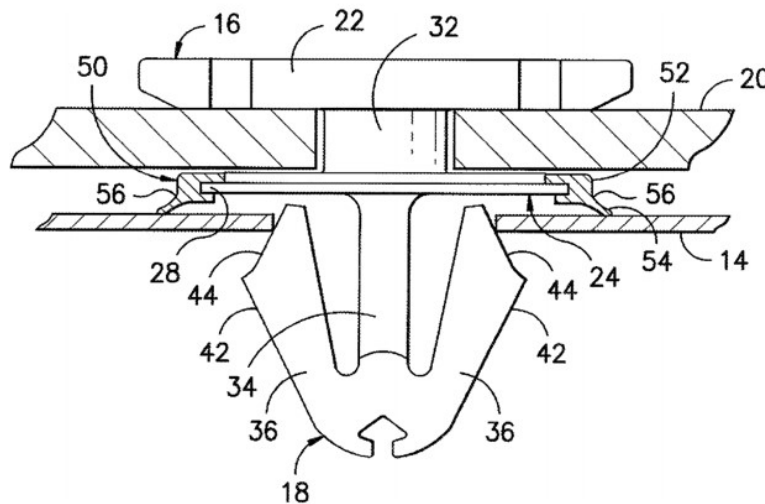


FIG. -3-

Id. (citing Ex.1001, Fig.3). The claims of the '740 Patent note that the sealing foot and the main body of the seal are “contiguous,” rather than separate. Ex.1001, Claim 1.

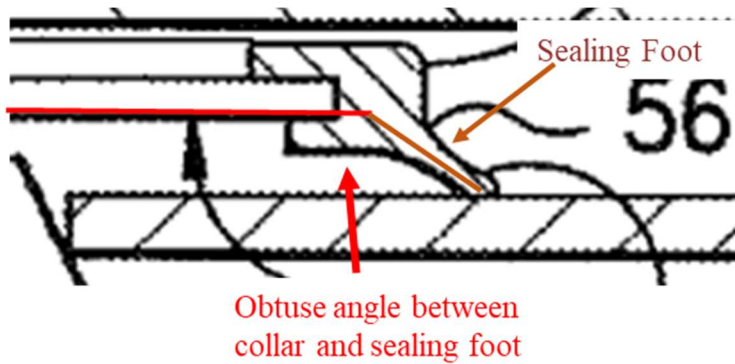
The '882 Patent synonymously recites, in claims not deemed to be patentably distinct from those of the '740 Patent, a living hinge located *between* the seal body and the sealing foot (*i.e.*, where they meet).

A POSA would understand “living hinge located at an intersection of the sealing foot and body portion” to be “an area integral to the hinged part [*i.e.*, sealing foot], at which the part will readily bend or flex, located in the area where the hinged part and seal body meet.” Ex.1006, ¶41.

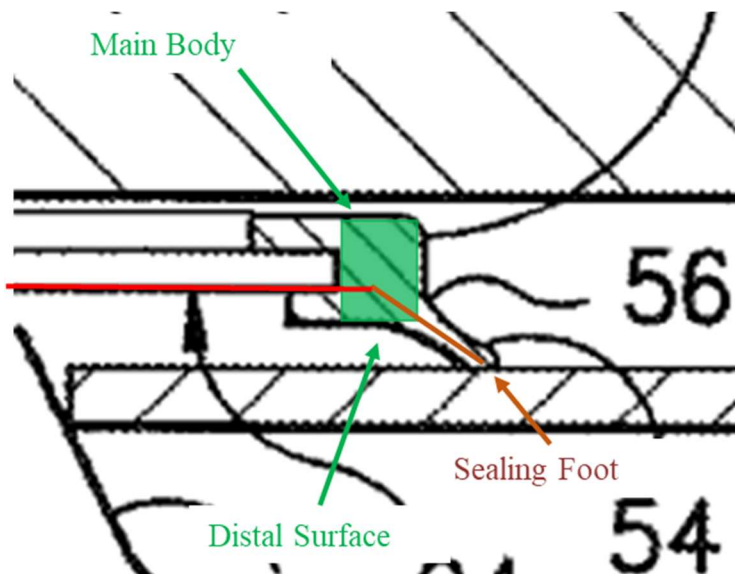
B. “projecting at an obtuse angle from a distal surface of the main body... the obtuse angle facing the clip portion”

Challenged claims 1-10 recite a sealing foot “projecting at an obtuse angle from a distal surface of the main body ... the obtuse angle facing the clip portion.” The ordinary meaning of *distal* is “situated away from the point of attachment or origin or a central point especially of the body.” “Distal.” *Merriam-Webster.com Dictionary*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/distal>. Accessed 19 Sep. 2023; Ex.1006, ¶43.

The claim recites a sealing foot projecting at an obtuse angle from this “distal surface.” The recited obtuse angle is one that “faces the clip portion” (*i.e.*, oriented downward). Ex.1006, ¶45 (citing Ex.1001, 3:42-44 (“The underside of the sealing foot forms an obtuse angle relative to the underside of the lower collar.”); 6:6-19 (same)).



While the specification makes no reference to a “seal body” “distal surface,” given the surrounding claim language, a POSA would understand the “distal surface” of the seal’s main body forms a clip-facing obtuse angle with the projecting sealing foot. That is, the seal main body distal surface is the seal’s lower, horizontal surface.



Ex.1006, ¶46 (citing Ex.1001, Fig.3 (annotated)).

C. “circumferential acceptance slot”

Challenged claims 9 and 17-20 recite a seal having “a circumferential acceptance slot that extends circumferentially along an inner diameter of the main body [of the seal]” and “is configured to receive the annular lip of the collar.” The plain and ordinary meaning of “slot” encompasses not only a “slit,” but also a “notch” or “groove.” *See, e.g.,* “Slot.” Merriam-Webster.com Dictionary, Merriam-Webster, <https://www.merriam-webster.com/dictionary/slot>. Accessed 18 Sep. 2023. (“slot *noun* 1a: narrow opening or groove : SLIT, NOTCH.”); Ex.1006, ¶48.

A POSA would understand that both a circumferential slit and notch are “configured to receive the annular lip of the collar.” *Id.*, ¶49. A POSA would be familiar with a number of techniques for forming seal body to engage the annular lip, including pre-creating either a groove or a depression in the seal, among others. *Id.*, ¶49. This construction is consistent with specification, which explains that:

It is also contemplated that the perimeter seal 50 may be formed separately with a circumferential acceptance slot around the interior for receipt and retention of the annular lip 28 in a stretch-fit relation if desired.

Ex.1001, 5:66-6:2.

A POSA would understand ““a circumferential acceptance slot” is a “slit, notch, groove” formed in a seal configured to receive the annular lip of the collar. Ex.1006, ¶51.

D. “Pressing Against”

Claims 6-7, 11-16 and 18-20 each recite a clip having a “at least one surface that is configured to press against an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening,” or slight variations thereof (*e.g.*, “*distal face* surface,” “*angled* surface”) (emphasis added).

In earlier finding that Claims 1-7, 9-15 and 17-20 of the parent ‘882 Patent were invalid over Benedetti, the Board correctly interpreted the term “press against” to require no more than that clip portion apply pressure, directly or indirectly, to the interior of the acceptance opening, to thereby produce at least some downward force.

Relying on Figure 10 of Benedetti, the Board concluded:

Based on our review of the arguments and evidence, we find that Petitioner establishes sufficiently that the proposed combination discloses a sealing foot “configured to flex . . . in order to create the substantially zero gap between the surface element and the support structure in response to **the clip portion pressing against the interior surface of the acceptance opening** to urge the retainer downwardly into the acceptance opening” as required by claim 1. . . . Benedetti’s figures also show deflecting wings with ends that have inwardly angled surfaces that contact the interior surface of the opening upon insertion. *Id.* at Figs. 4, 8, 10. **All of these express teachings of Benedetti directly support Petitioner’s argument that Benedetti’s deflecting wings with inwardly angled surfaces are configured to press against the interior**

of the opening and urge Benedetti's fastener downwardly and maintain a zero-gap condition.

Ex.1008 at 54-55.

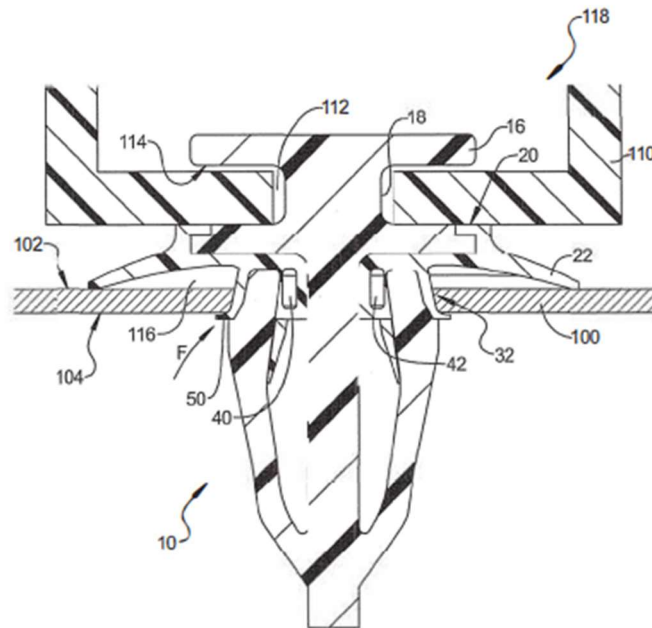


FIG 10

It was conceded that the angled surface of Benedetti's deflecting wing was not in direct contact with the interior surface of the acceptance opening due to an interposed, elastic seal (second resilient seal member 32). Nevertheless, the Board concluded that Benedetti's clip portion—and specifically its angled wing surface—“pressed against” the interior surface of the acceptance opening. Ex.1008, 54-58 (“[T]hese express teachings of Benedetti directly support Petitioner's argument that Benedetti's deflecting wings with inwardly angled surfaces are configured to press against the interior of the opening and urge Benedetti's fastener downwardly and

maintain a zero-gap condition.”) Under 37 C.F.R. 42.73 (d) (3), PO may not take positions inconsistent with this adverse judgment of the PTAB.

Inexplicably, however, the Board declined to invalidate two dependent claims which recited angled surfaces of the clip portion “pressing against” the interior surface of the acceptance opening. The Board inconsistently construed the same limitation, “pressing against,” to require “direct contact.” Ex.1008 at 63. In this respect, the Board erred in contradicting its conclusions concerning the teachings of Benedetti quoted above.

In reaching this conclusion, the Board relied upon PO’s arguments that a different construction was mandated by principles of claim differentiation. Ex.1008 at 63 (citing PO’ Response at 49). In this, the Board was misled.

Rather than claim differentiation, which involves a presumption that different terms have different meanings, the more applicable claim construction principle is the maxim that *the same claim term* is presumed to have *the same meaning* despite use in differing claims. *Fin Control Systems Pty, Ltd. v. Oam, Inc.*, 265 F.3d 1311, 1318-19 (Fed. Cir. 2001). While dependent claims may be presumed to have a different scope than the claim from which they depend, the Board unnecessarily restricted the meaning of “press against” in these dependent claims in order to differentiate them from the independent claim. They were sufficiently differentiated by the fact that they more specifically identified a *particular part* of the “clip

portion” that was “pressing against” the interior of the acceptance opening (*i.e.*, the distal end of the wing at its angled surface).

Contrary to PO’s arguments, the claims do not recite contact with the acceptance opening, merely that the ends of the wings press against (*i.e.*, apply force to) the acceptance opening at these surfaces. The claim language stands in contrast to that used in the specification to communicate parts that touch. See 6:56-59 (“Referring now to FIGS. 2 and 3, it will be seen that in normal operation (FIG.3), a portion of the sloped distal face surface 44 **may be in contacting relationship** with the inner perimeter surface of the acceptance opening 38.”) (Emphasis added); *see also* 3:44-48 and 6:47-50. That the patent may illustrate these surfaces in contact does not limit the claims’ broader language. *See Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362, 1367-68 (Fed. Cir. 2012) (“attached” not limited to external attachment despite depiction of where all embodiments as external attachment).

A POSA would not understand the term “press against” to be so limited. Ex.1006, ¶60. Instead, a POSA would understand “press against” to refer to the force exchanged between the distal surface of the wing, on the one hand, and the interior surface of acceptance hole on the other. This force exchange occurs when the geometry of the other components (such as the acceptance opening) keep the wings in a state of compression, *i.e.* that the inwardly angled biasing surfaces of the wings’

distal ends continuously press outward because the geometry of the opening's interior edge prevents the wings from fully extending. Ex.1006, ¶61; IPR2021-000724, Ex.2011, 154:20-156:8 (noting press against is synonymous with force, seal 32 generates no force itself, and size of acceptance hole and corresponding displacement of wings determines force generated by wing 26).

Use of the term “surface” does not compel *contact*. The term “surface” merely identifies the portion of each structure (*i.e.*, inwardly angled segment and acceptance opening) that interact to exchange forces with one another. IPR2021-00724, Ex.1007, 57:14-58:4 (agreeing surfaces of inwardly angled portions of 66 and 68 correspond to claimed angled biasing surfaces, distinct from other “surfaces”), 46:6-11 (agreeing that Fig.8 depicts contact between wings and hole surface); 50:13-51:11 (upper portion of Benedetti wing applies force). The claims do not exclude additional structures, such as Benedetti's intervening seal. *See Crystal Semiconductor v. Tritech Microelectronics*, 246 F.3d 1336, 1348 (Fed. Cir. 2001) (“comprising” creates presumption that body of claim is open and does not exclude additional, unrecited elements).

A POSA would understand “at least one surface that is configured to press against an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening” to be “at least one surface configured to applies

force against an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening.” Ex.1006, ¶64.

VIII. PRIOR ART

A. U.S. Patent No. 8,561,265 (“Benedetti”) (Ex.1007)

Entitled “Interior Trim Fastener,” Benedetti was cited but neither discussed nor applied by the Examiner during prosecution in a manner consistent with the PTAB’s Findings. Benedetti was filed April 12, 2011, published October 18, 2012, and issued October 22, 2013. Ex.1007, p. 1 at (22), (45), (65). Benedetti qualifies as prior art to the ’740 patent under 35 U.S.C. §102 (a) and (e) (pre-AIA).

Benedetti is concerned with same field as the ’740 Patent. Benedetti relates to automobile vehicle trim fasteners. Ex.1006, ¶67 (citing Ex.1007, 1:5-6). Benedetti is relevant to problems which inventors of the ’740 Patent sought to solve. *Id.*, ¶65. Benedetti discloses seals designed to prevent intrusion of foreign materials, such as dirt or moisture, and proposes a solutions addressing concerns (like those expressed in the ’740 Patent) with the potential separation of the seal from the retainer. *Id.*, ¶66.

Benedetti discloses a fastener having an annular head and annular stepped flange joined by a lesser diameter shaft. Ex.1006, ¶67 (citing Ex.1007, 6:57-65). In cross section, it resembles a spool:

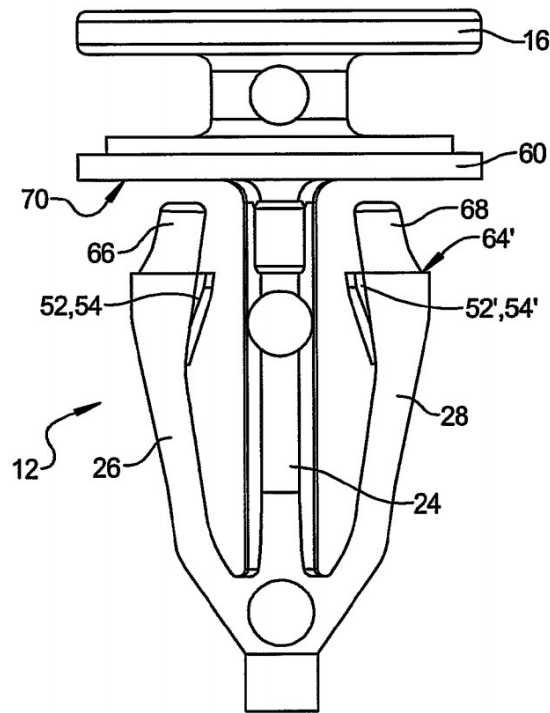


FIG 4

Id. (citing Ex.1007, Fig.4).

The fastener connects to a trim component 110 having an aperture 112. Ex.1006, ¶69 (citing Ex.1007, 6:57-65). This aperture is “smaller than a diameter of [the] component engagement head” but “larger than a diameter of [a] neck.” *Id.* The neck is slid into this aperture 112, securing the trim to the panel:

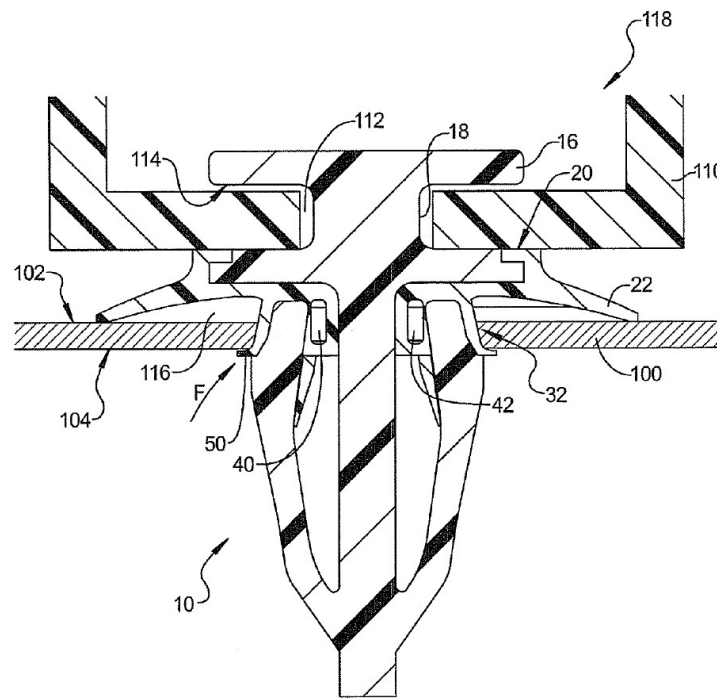


FIG 10

Id. (citing Ex.1007, Fig.10).

Deflecting wings (26, 28) attached to central post 24. Ex.1006, ¶70 (citing Ex.1007, 3:40-43, Figs. 1, 4):

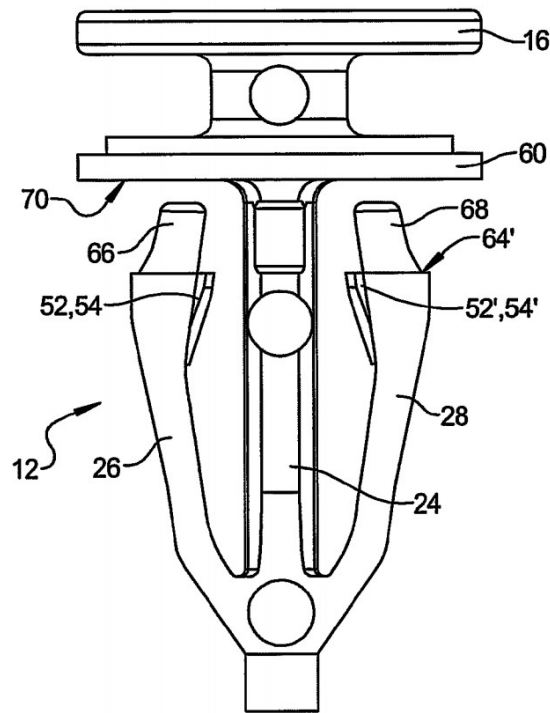
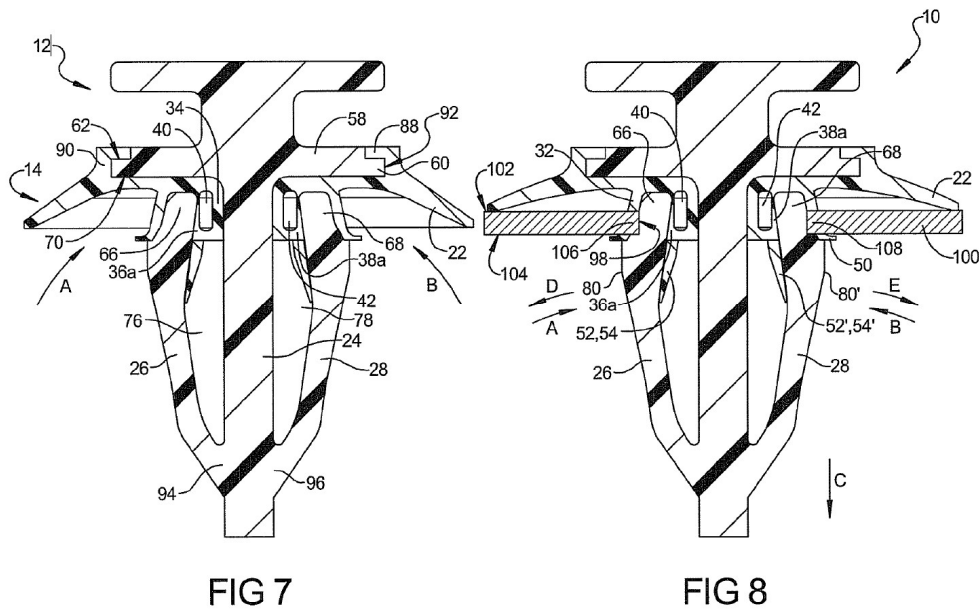


FIG 4

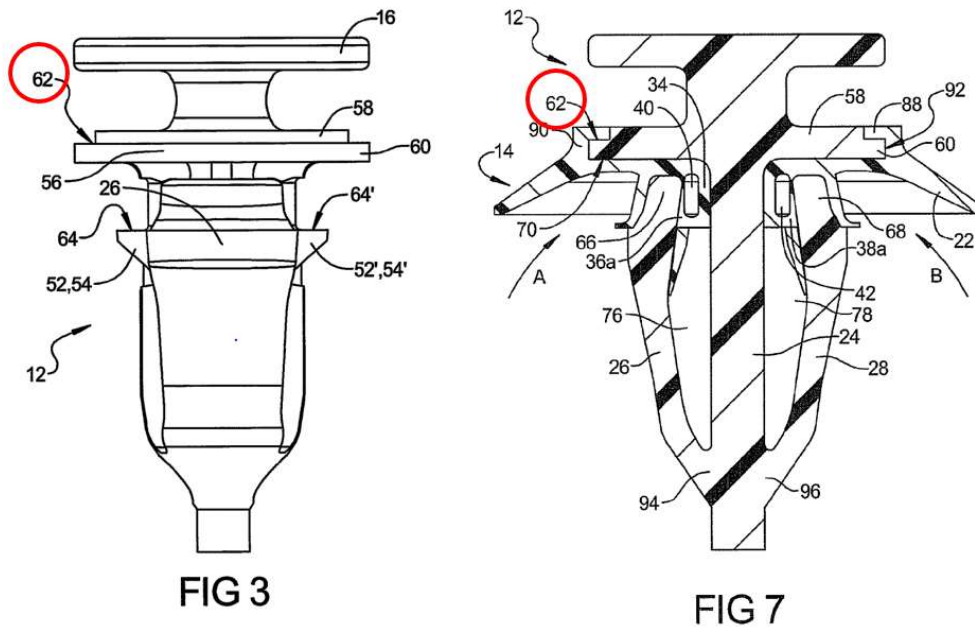
These wings deform inwardly when inserted through the panel's opening. *Id.* (citing Ex.1007, 7:22-38). Once inserted, these elastic wings press against the support surface to secure the clip and the trim to the panel. *Id.* (citing Ex.1007, 7:39-52, 8:18-20, 6:57-65, Fig.10).

An elastic seal is formed about seal member connection disk 56. *Id.*, ¶71 (citing Ex.1007, 1:12-17, 4:42-51, Fig.3 and 5). A skirt-like “first resilient member 22” “elastically deflects” when fastener is installed. *Id.* (citing Ex.1007, 6:16-22). This skirt hinges to maintain contact with the panel's panel face 102, creating a fluid-tight boundary. *Id.* (citing Ex.1007, 6:16-22):



Id. (citing Ex.1007, Figs.7,8).

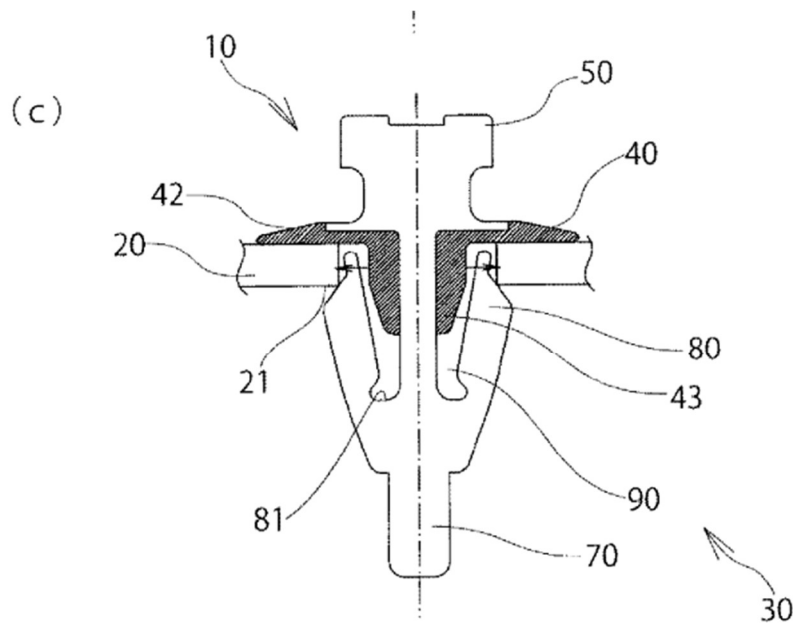
Seal member connection disk 56 has a step 62. Ex.1006, ¶72 (citing Ex.1007, 4:42-51, Fig.4). Figure 3 depicts step 62. Figure 7 shows the seal abutting this step:



Id. (citing Ex.1007, Figs. 3, 7).

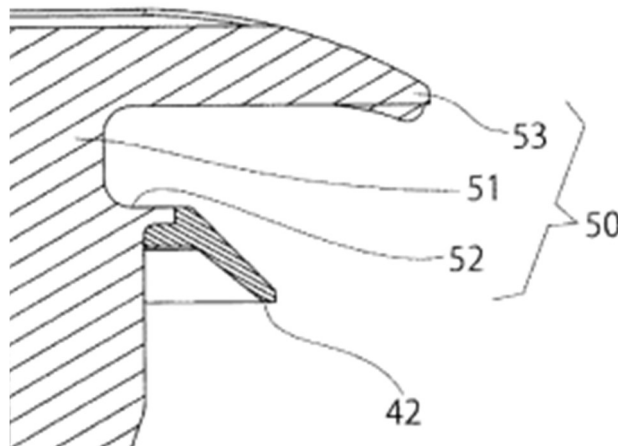
Entitled “Retainer,” Hirano was cited but not discussed by the Examiner during prosecution. With an earliest priority date of October 5, 2010, Hirano published on April 14, 2011, and qualifies as prior art under 35 U.S.C. §102 (b) and (e) (pre-AIA). Ex.1013, p.1 at (22), (43).

Hirano discloses a press-in retainer configured to join a surface element (*e.g.*, attachment member 30) to an underlying support structure (*e.g.*, panel 20). Ex.1013, ¶¶1,16 (“In the figures, 10 represents a retainer 10, which is used to attach other parts, such as weather stripping and the like to panels 20 such as around the door of an automobile or the opening edge of a trunk compartment.”)



force of the resin, and the tip end sloped portion 83 elastically contacts the inner edge portion of the mounting hole 21[.]”)

Hirano’s retainer also includes a deflectable seal (portion of flange portion 42) configured such that “an outer circumferential edge portion of the flange portion 42 [that] extends diagonally downward in an umbrella shape, and the wall thickness is made to be relatively thin to facilitate deflection.” Ex.1013, ¶22.



Ex. 1013, Fig.3.

IX. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenged Claims & Statutory Grounds

The Petition presents four grounds for unpatentability:

Ground	Claims	Basis
1	1-6, 8-9, 11-13, and 16-19	Pre-AIA 35 U.S.C. §102 Benedetti alone.

Ground	Claims	Basis
2	1-6, 8-9, 11-13, and 16-19	Pre-AIA 35 U.S.C. §103 Benedetti alone and/or in light of Hirano and/or Pue and/or Iwasaki.
3	1-6, 8-9, 11-13, and 16-19	Pre-AIA 35 U.S.C. § 102 Hirano alone.
4	1-6, 8-9, 11-13, and 16-19	Pre-AIA 35 U.S.C. §103 Hirano alone and/or in light of Benedetti, and/or Pue and/or Iwasaki.

B. Ground 1: Claims 1-6, 8-9, 11-13, and 16-19 are Anticipated by Benedetti

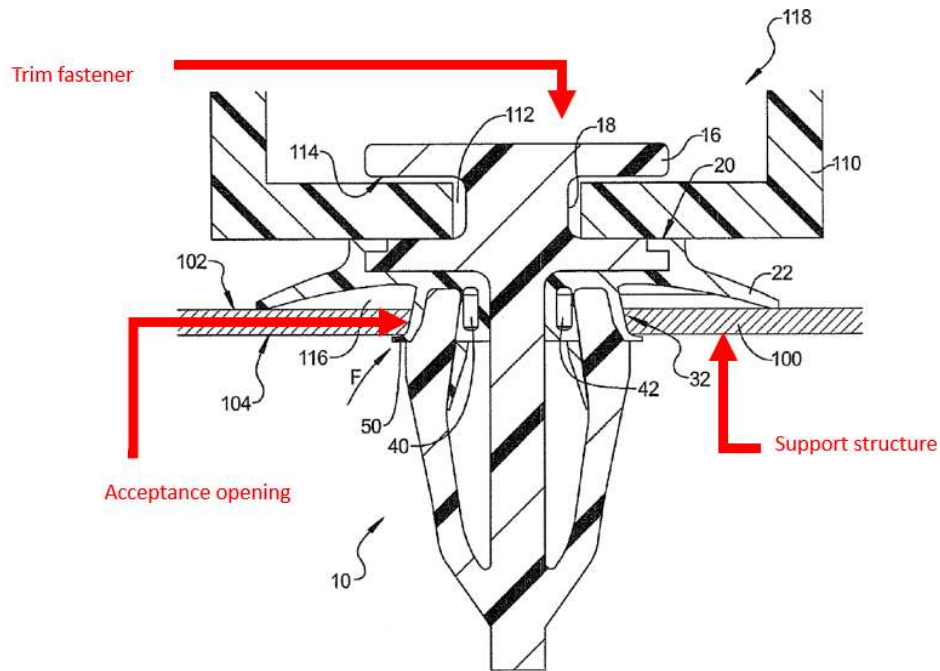
1. Independent Claim 1

Benedetti explicitly discloses all elements of independent Claim 1. Ex.1006,

¶83.

i. 1[Preamble]: Press-In Retainer

If the preamble of claim 1 is deemed a limitation, Benedetti discloses a press-in retainer (trim fastener 10) configured for insertion into an acceptance opening in the support structure (panel 100). Ex.1008, 51-58; Ex. 1006, ¶84 (citing Ex.1007, 6:16-20, Fig.8, 10 (annotated below)).



ii. Element 1[a]: Head/Collar/Seal

Benedetti discloses a retainer head having a collar (seal member connection disk 56). Ex.1008, 59; Ex.1006, ¶85 (citing Ex.1007, Fig.3 and 4).

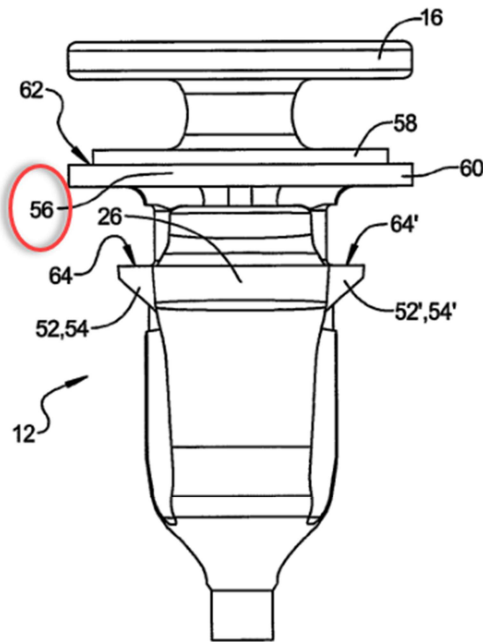
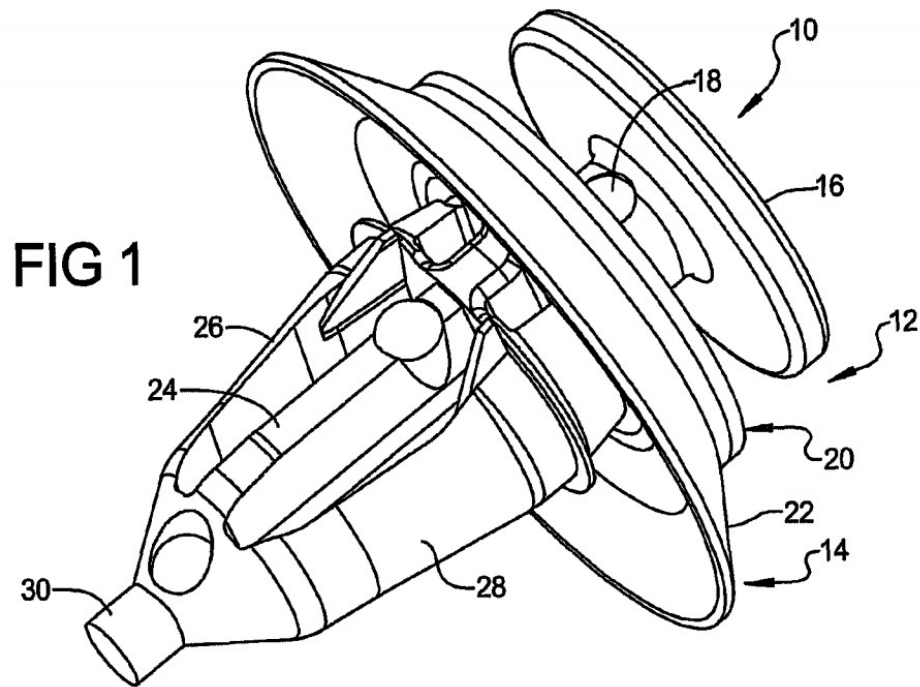


FIG 3

Benedetti discloses a retainer head having a seal (resilient seal member 22) disposed at least partially about the collar. *Id.*, ¶86 (citing Ex.1007, 3:34-37, Fig.6, 8). Resilient seal member 22 can take the form of an umbrella, and is elastically, resiliently flexible, forming a seal when fastener 10 is used. *Id.* (citing Ex.1007, 3:34-37).



Ex.1007, Fig.1.

iii. Element 1[b]: Clip Portion

Benedetti teaches the retainer's clip portion (central post 24, deflecting wings 26, 28) projecting from the collar. Ex.1008, 54-55; Ex.1006, ¶87 (citing Ex.1007, 3:28-43).

iv. Element 1[c]: Seal/Body/Foot

Benedetti discloses this element. Ex.1008, 58-59; Ex.1006, ¶88. Resilient seal member 22 is received in spaced step 62 and includes a main body (retention portion 88 of resilient seal member 22, perimeter wall 90, and a corresponding part of the portion of the seal bonded to disk face 70).

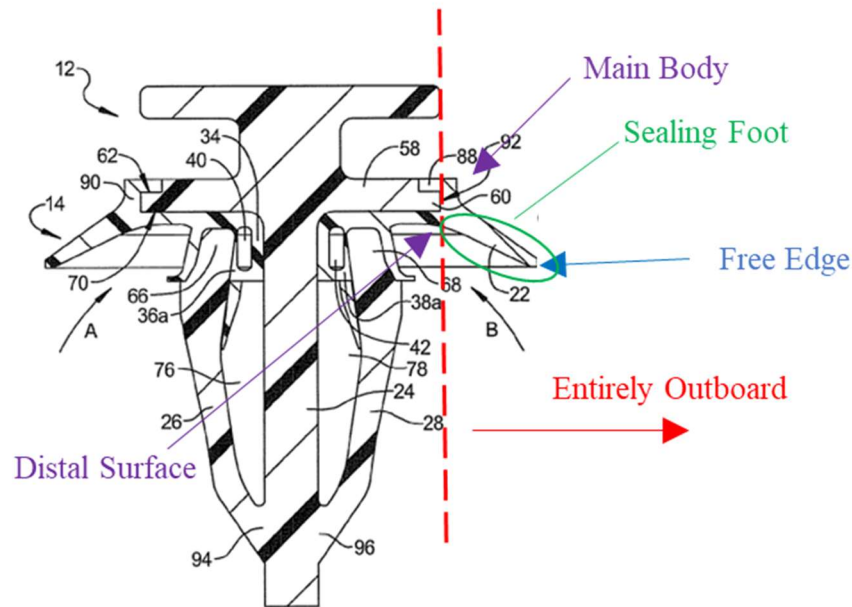


FIG 7

Id. (citing Ex.1007, Fig.7 (annotated)). The seal's main body is bonded to, and thereby engages, inter alia, disk face 70 of collar 56, as well as engaging spaced step 62 into which it is received. Ex.1006, ¶89 (citing Ex.1007, 5:45-49, Figs. 7).

When in an unstressed condition, a sealing foot (skirt portion of resilient seal member 22) projects at an obtuse angle facing the clip portion from a distal surface of the seals' main body to a free edge, such that it is disposed entirely outboard from the collar. *Id.*, ¶90 (citing Ex.1007, Fig.7).

Benedetti teaches that the main body and sealing foot are formed contiguously formed in the second step of a two-shot injection molding process. *Id.*, ¶91 (citing Ex.1007, 3:16-21).

v. **Element 1[d]: Flex/Living Hinge**

Benedetti discloses a living hinge about which the sealing foot flexes that is located at an intersection of the sealing foot and the main body portions:

Living Hinge

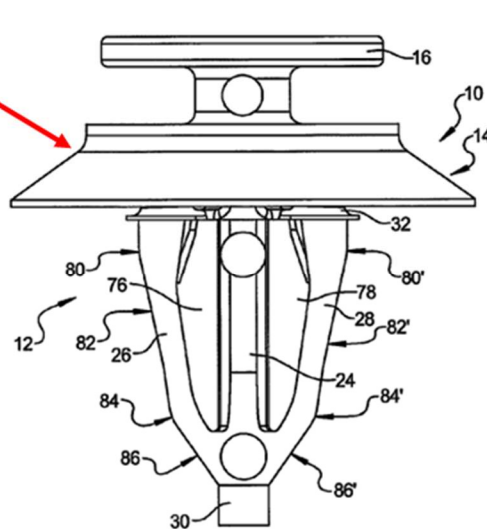


FIG 6

Ex.1008, 59-62 (“where the sealing foot meets the seal body”); Ex.1006, ¶93.

In Benedetti, the sealing foot (skirt portion of resilient seal 22) is configured such that it flexes about this living hinge from an unstressed condition (Fig.7) toward a substantially flattened condition while remaining entirely outboard of the second platform (Fig.8). *Id.*, ¶94 (citing Ex.1007, 6:16-22 (“elastically deflects”), Figs.7,8).

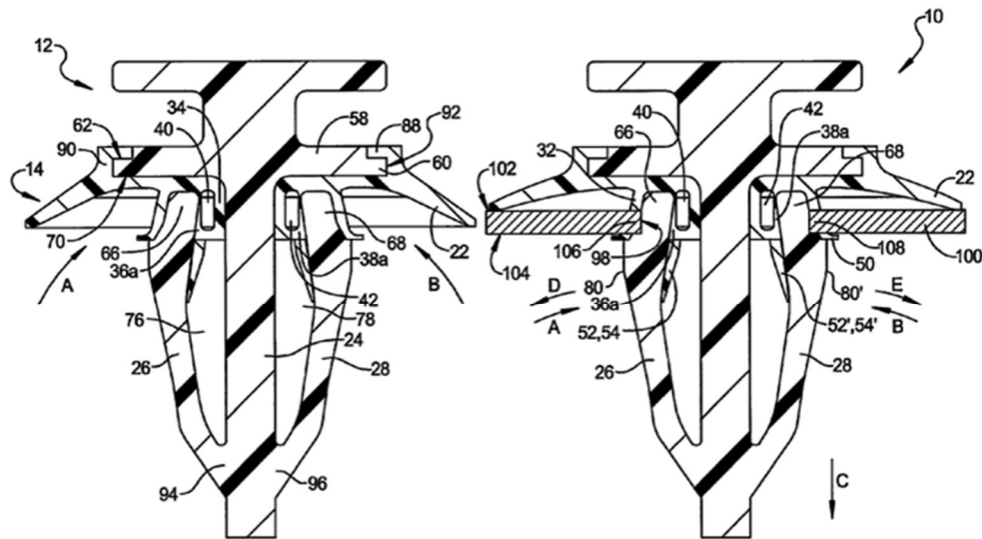


FIG 7

FIG 8

vi. Element 1[e]: Flattening

Benedetti discloses a sealing foot wherein when in a substantially flattened condition, the obtuse angle between the sealing foot and the distal surface of the main body will approach a flat contiguous surface. Ex.1008, 51-58; Ex.1006, ¶95.

2. Claim 2

Benedetti discloses a fastener joining trim members to panels of automotive vehicles. Ex.1008, 51-58; Ex.1006, ¶96 (citing Ex.1007, 6:57-65). Benedetti teaches a retainer head configured to slide into a channel (aperture 112) in the surface element. Benedetti discloses trim member or similar component 110 engages component engagement head 16 of fastener 10 by means of an aperture 112 which is smaller in diameter than component engagement head 16 yet larger in diameter than neck 18, such that component 110 is trapped or engaged between planar face

20 and head contact surface 114 of component engagement head 16. *Id.* (citing Ex.1007, 6:57-65, Fig.10). Benedetti's clip portion is pushed into the acceptance opening in the support structure. *Id.* Fastener 10 can be inserted through an aperture defined by a panel aperture wall 98 created through a panel 100. *Id.* (citing Ex.1007, 6:16-18, Fig.8, 10).

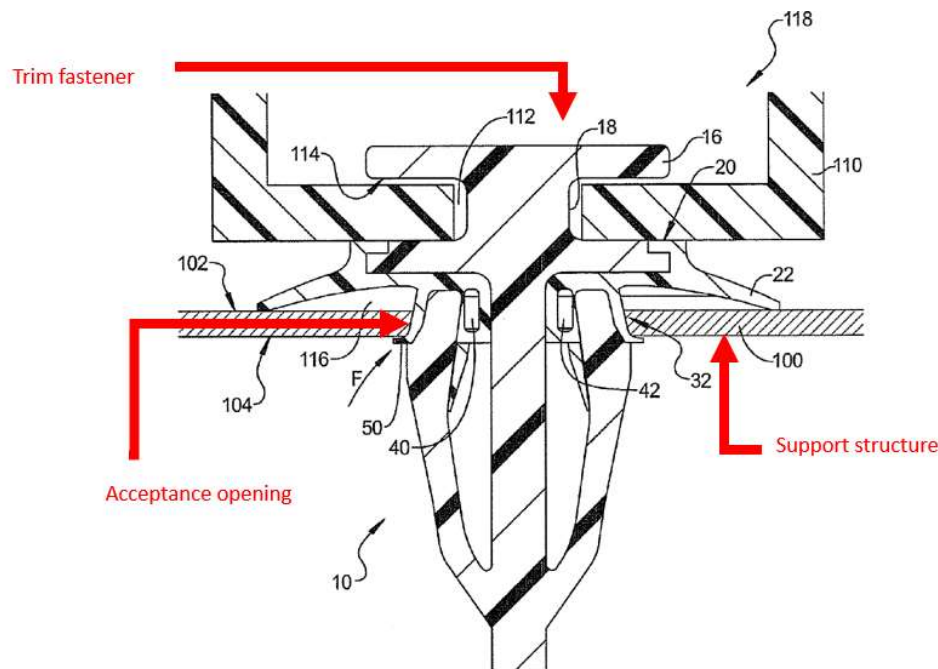


FIG 10

Id. (citing Ex.1007, Fig.10 (annotated)).

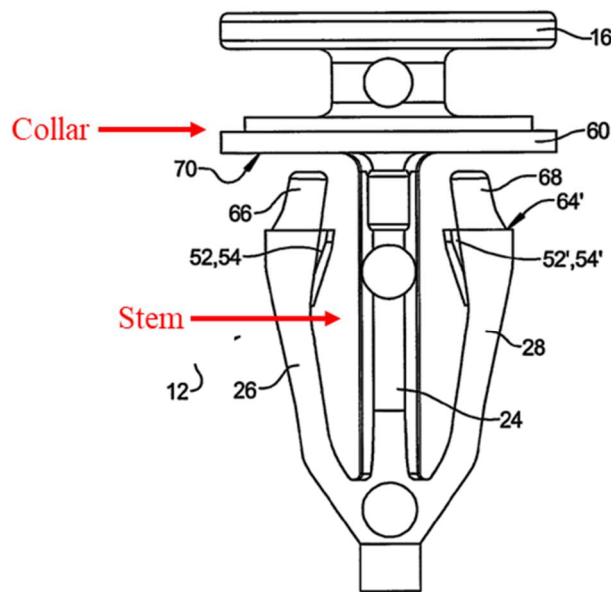
3. Claim 3

Benedetti discloses the head and clip portions of its retainer are molded as a unitary structure. Ex.1008, 64-65 (finding Benedetti taught unchallenged limitations in various claims); Ex.1006, ¶97 (citing Ex.1007, 3:13-16 (first fastener portion 12

is made, for example, using an injection molding process from a first polymeric material[.]”)).

4. Claim 4

Benedetti discloses a clip portion having a stem (central post 24) extending from the collar (seal member connection disk 56). Ex.1008, 47-49; Ex.1006, ¶98 (citing Ex.1007, 3:40-43, 4:42-51, Fig.3):



Id. (citing Ex.1007, Fig.4 (annotated)).

5. Claim 5

Benedetti discloses the claimed clip portion, which has a pair of flexible wings (first and second deflecting wings 26 and 28) extending at an angle away from a central support (*i.e.*, post 24). Ex.1008, 51-58; Ex.1006, ¶99.

Benedetti depicts wings 26 and 28 having a dog-leg configuration. *Id.*, ¶100 (citing Ex.1007, 5:29-37, Fig.4 and 8):

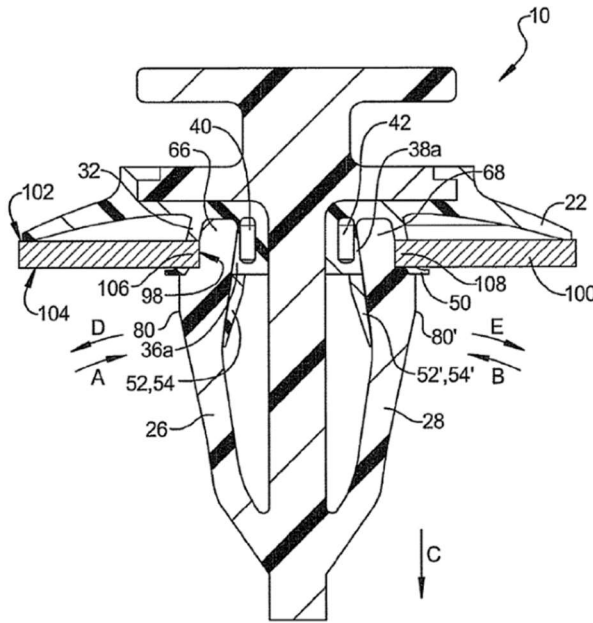


FIG 8

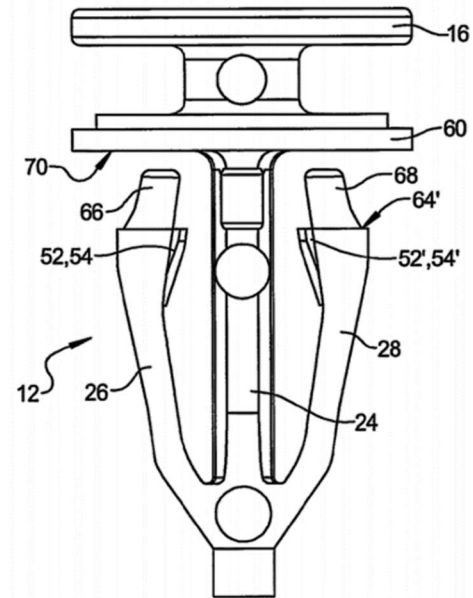
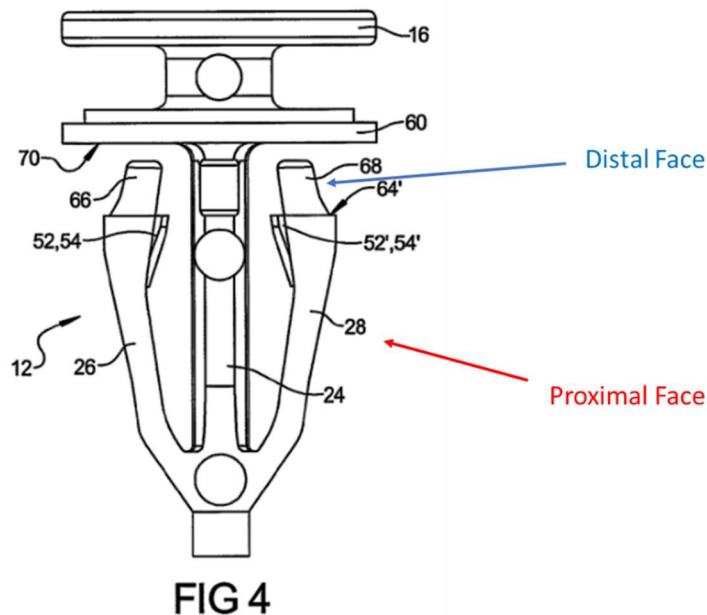


FIG 4

Deflecting wings 26 and 28 have proximal face and distal face surfaces. The proximal face surface extends from the end of the stem (24) radially outwardly, toward the collar (56), and to the distal face surface (66, 68) (see below). The distal face surface (66, 68) extends from the proximal face surface radially inwardly, toward the collar (56), and to a free tip of the flexible wing (see below). *Id.*, ¶101 (citing Ex.1007, 4:56-63, Figs. 4 and 6).

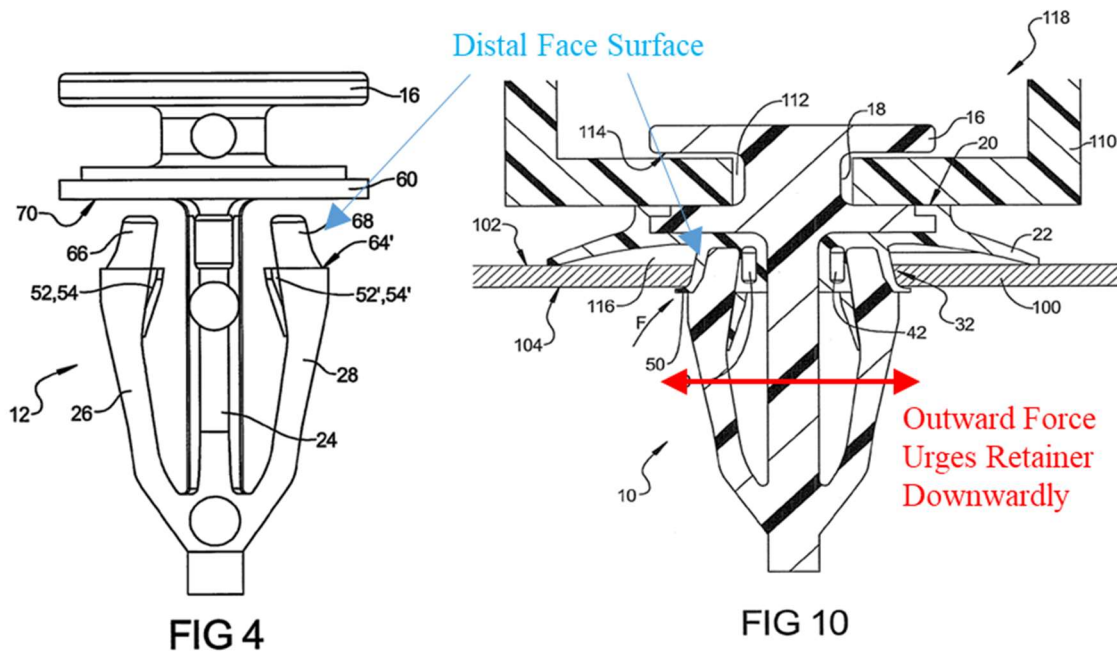


Id. (citing Ex.1007, Fig.4 (annotated)).

6. Claim 6

Benedetti teaches clip portion is configured to “press against” an interior surface of the acceptance opening to urge the retainer downwardly into the acceptance opening. Ex.1008, 51-58; Ex. 1006, ¶102; *see also* Discussion at Section VI (D) concerning Board’s previous determination of proper construction of “pressing against” and finding regarding Benedetti’s disclosures. In Benedetti, distal face surfaces of the clip press against (*i.e.*, apply force to) the interior surface of the acceptable opening to urge the retainer downwardly into the acceptance opening. Ex. 1006, ¶103. Benedetti discloses deflecting wings 26 and 28 of the fastener 10 spring outward elastically once inserted into panel opening 100, causing outer surfaces of wing extending members 66 and 68 to press against interior surface of

opening 100 thereby urging fastener downward due to their inwardly angled distal face surfaces. *Id.*, ¶102 (citing Ex.1007, 8:18-20 (wings 26, 28 remain “inwardly deflected” after insertion, thereby applying outward and downward pressure), 7:39-52, 2:37-39, 6:53-56, Fig 4, 10). This causes the sealing foot to flex about a living hinge towards a substantially flattened condition, as shown in FIG.10, below.



Id. (citing Ex.1007, Fig.4, 10 (annotated)).

7. Claim 8

Benedetti teaches that the collar (seal member connection disk 56) is annular. Ex.1008, 64-65; Ex. 1006, ¶104. Benedetti explains that “[a]ccording to several embodiments, seal member connection disk 56 can have a circular, oval, or other geometric shape.” *Id.* (citing Ex.1007, 4:42-51, Fig.4).

The collar has a stepped construction including an interior collar portion (first disk portion 58) and a reduced thickness outer annular lip (second disk portion 60) disposed circumferentially about the interior collar portion and extending outwardly from its perimeter. *Id.*, ¶105 (citing Ex.1007, 4:42-51, 5:45-53, Fig.3). Benedetti explains that “first disk portion 58 is smaller in diameter or area than a diameter or area of second disk portion 60 such that a spaced step 62 is provided at a perimeter of first disk portion 58.” *Id.* (citing Ex.1007, 4:42-51). Step 62 is illustrated in Figure 3 below:

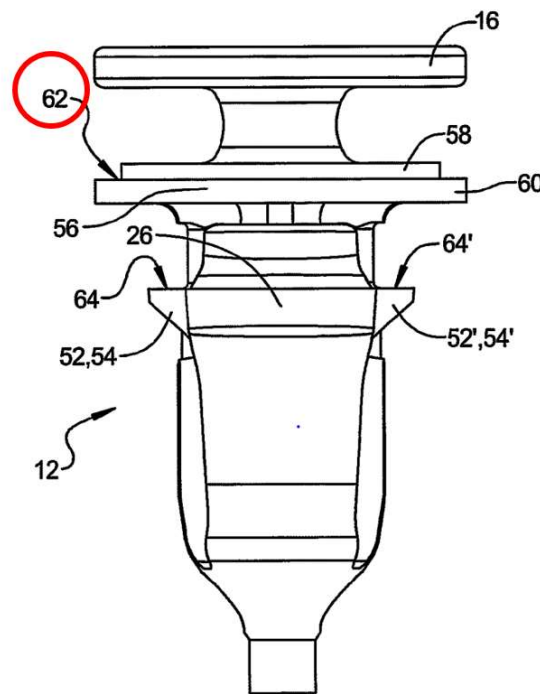
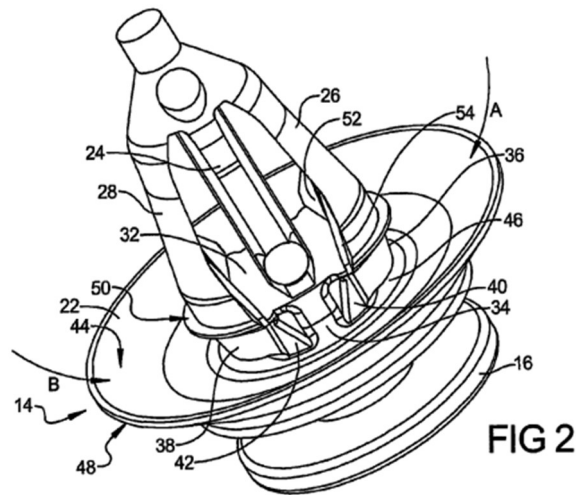


FIG 3

Id. (citing Ex.1007, Fig.3 (annotated)).

8. Claim 9

Benedetti teaches that the seal's main body is annular. Ex.1008, 64-65; Ex. 1006, ¶106 (citing 3:34-37 (“[R]esilient seal member 22, which can take the form of an umbrella[.]”) and 4: 22-25 (“Perimeter edge 48 is shown for exemplary reasons having a circular shape[.]”))).



Benedetti also explains that the seal has a structure adapted to receive the outer annular lip of the collar. Ex. 1006, ¶107 (citing Ex. 1007, 5:42-53 and Fig.7 (“During the second molding shot, a retention portion 88 of first resilient seal member 22 is received in the spaced step 62, which opposes portions of second fastener portion 14 contacting and therefore bonded to disk face 70 of second disk portion 60. A perimeter wall 90 surrounds a disk perimeter wall 92 of second disk portion 60 and thereby integrally connects material of second fastener portion 14 between retention portion 88 and first resilient seal member 22.”))

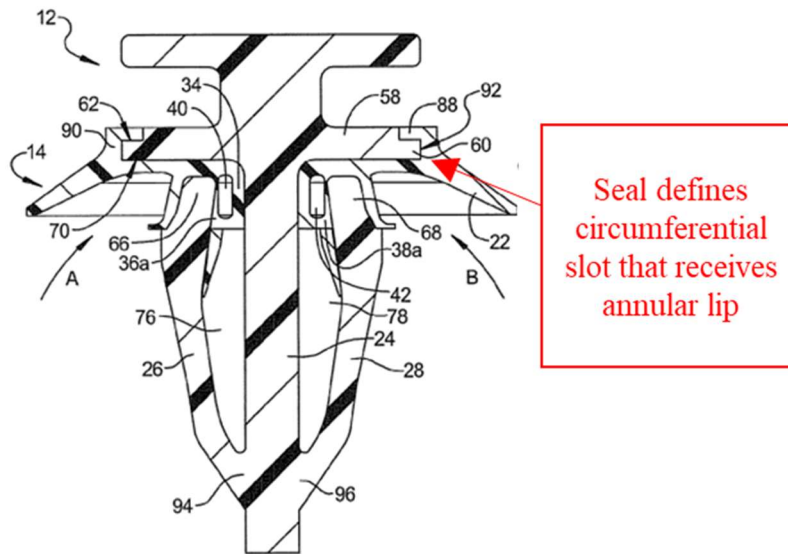


FIG 7

Id. (citing Ex.1007, Fig.7 (annotated)).

9. Independent Claim 11

Benedetti discloses every limitation recited by independent Claim 11.
Ex.1006, ¶108.

i. Preamble: Retainer

The preamble is not a limitation. Ex.1006, ¶109.

ii. Element 11[a]: Head/Collar/Neck

Benedetti discloses a retainer assembly having a head including a collar, a platform, and a neck disposed between the collar and the platform, the retainer head being configured for placement into a channel defined by the surface element. *Id.*, ¶110; *see also* Element 1[a], above.

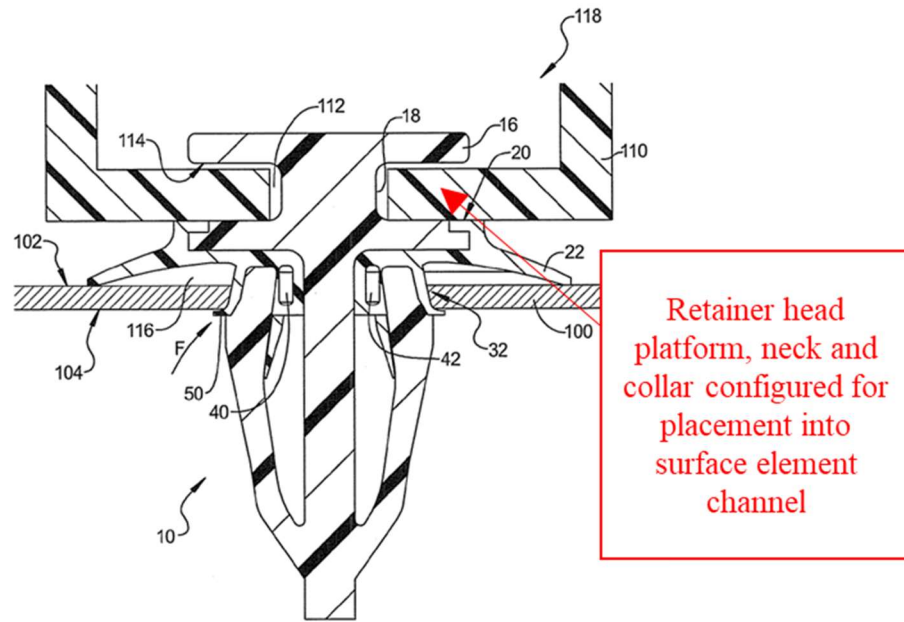


FIG 10

Ex.1006, ¶168 (citing Ex.1007, Fig.10 (annotated)).

iii. Element 11[b]: Seal/Body/Foot

Benedetti discloses a seal disposed about a perimeter of the collar, comprising an annular main body and a sealing foot connected to the main body by a living hinge. The sealing foot extends from the living hinge along a perimeter of the main body and is disposed entirely outboard from the collar, extending from the living hinge to a free edge. *See* Claim 1, above. An inner diameter of the main body at least partially contacts an outer diameter of the collar.

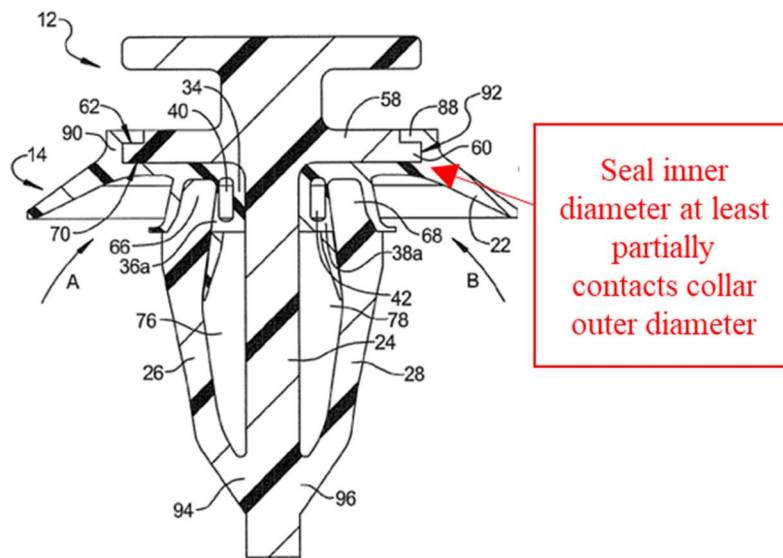
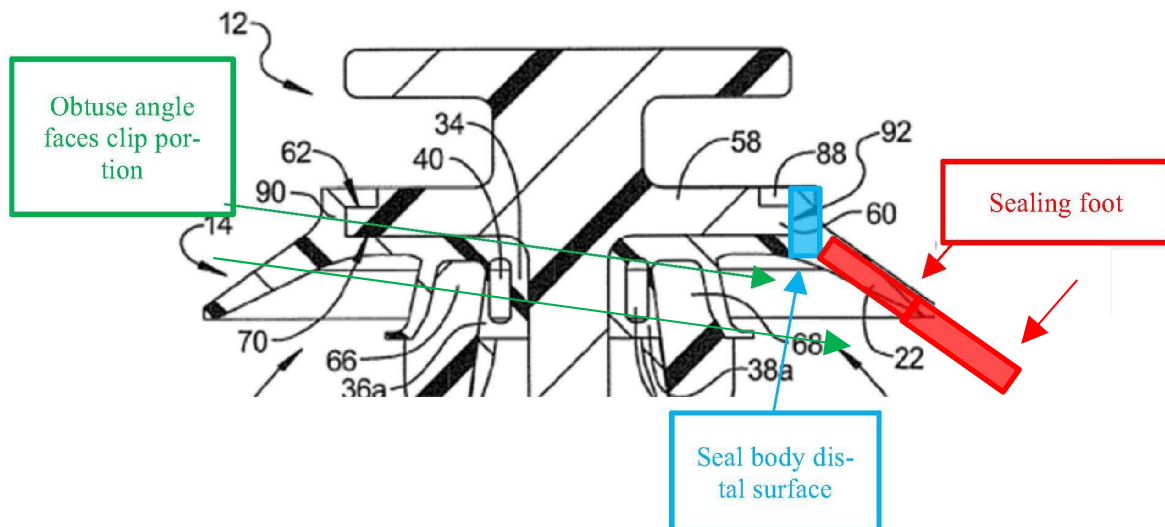


FIG 7

Benedetti's sealing foot contacting surface is contiguous with a main body distal surface, both of which face away from the retainer head and form an obtuse angle when the seal is in an unstressed condition. Ex.1006, ¶112.



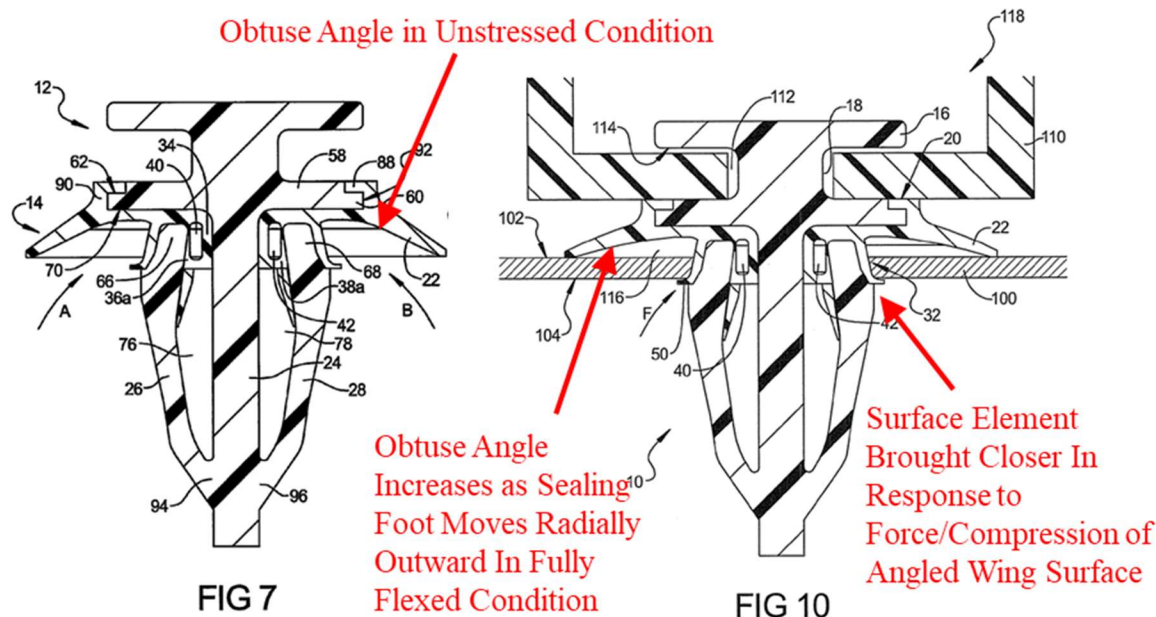
Id. (citing Ex.1007, Fig.7 (annotated)).

iv. Element 11[c]: Clip Portion

Benedetti discloses a faster having a clip portion extending from the collar of the retainer head, the clip portion configured for insertion into the acceptance opening of the support structure and comprising at least one surface configured to press against an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening. Ex.1006, ¶113; *see* Elements 1[preamble], [b] and [d]-[e] and Claims 6 and 18, above.

v. Element 11[d]: Flex/Flatten

Benedetti discloses a seal configured to flex from the unstressed condition toward a fully flexed condition to bring the surface element closer to the support structure. [See Elements 1[d]-[e], above.] Benedetti discloses a seal with a sealing foot having a free edge which, in its fully flexed condition, is disposed radially outwardly and closer to the retainer head and the contacting surface of the sealing foot and the distal surface of the main body form an angle greater than the obtuse angle of the unstressed condition. Ex.1006, ¶114.



Id. (citing Ex.1007, Fig.7, 10 (annotated)).

10. Claim 12

See Claim 3, above. *Id.*, ¶115; section IX(B)(3).

11. Claim 13

See Claim 1[b], above. Benedetti's clip portion includes a central support extending from a collar. Ex.1006, ¶116; section IX(B)(1)(iii).

12. Claim 16

See Claims 5, 6 and 11[Preamble] and 11[c], above. Benedetti discloses the clip portion as claimed. Ex.1008, 51-58; Ex. 1006, ¶117; sections IX(B)(5)-(6), (9)(i) and (iv).

13. Independent Claim 17

Benedetti discloses every limitation of independent Claim 17. Ex.1006, ¶118.

vi. Preamble: Retainer

If the preamble of Claim 17 is deemed a limitation, as discussed in connection with the preamble of Claim 1, above, Benedetti discloses the claimed retainer assembly. Ex.1006, ¶119.

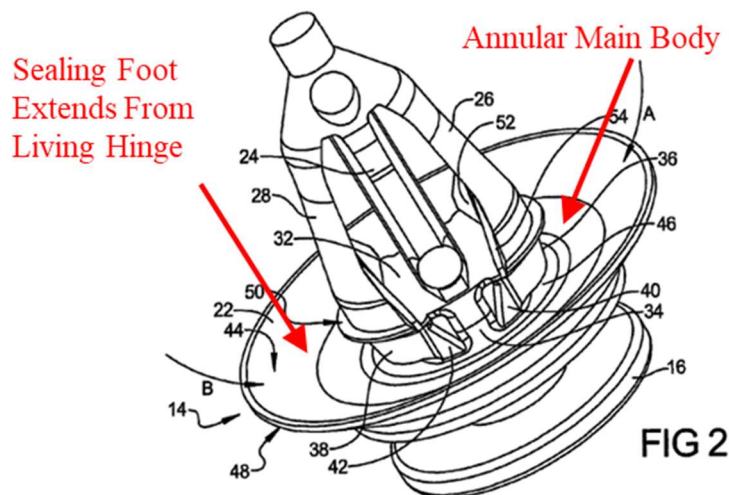
vii. Element 17[a]: Head/Collar/Neck

Benedetti discloses this element. Ex.1006, ¶120; section (IX)(B)(9)(ii), above.

viii. Element 17[b]: Seal/Body/Foot

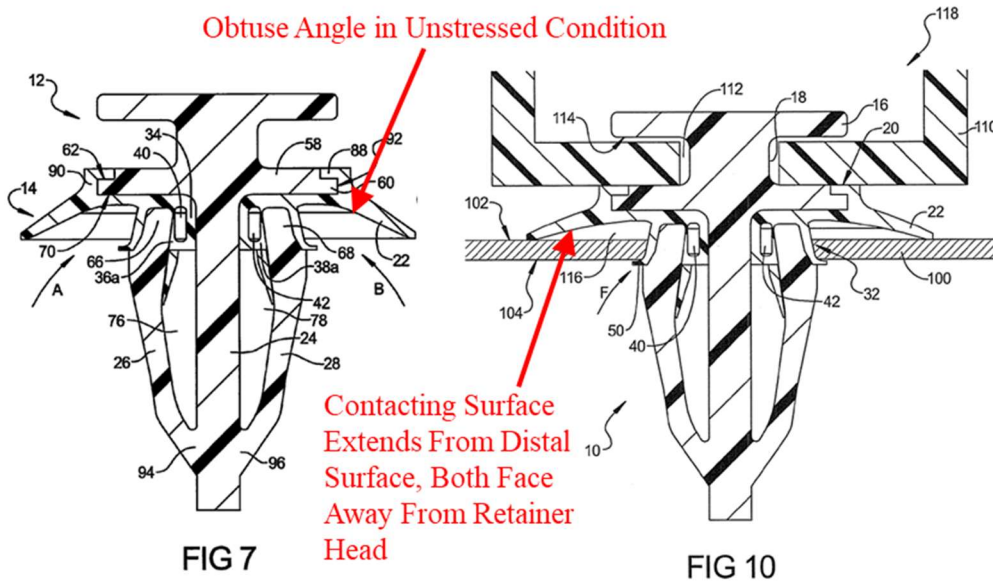
Benedetti discloses this element. *See* Element 11[b], above. Benedetti's main body further has an annular shape, is disposed about a perimeter of the collar, and includes a living hinge extending along a perimeter of the main body. Ex. 1006, ¶121.

Benedetti's sealing foot extends from this living hinge:



Id. (citing Ex.1007, Fig.2 (annotated)).

Benedetti's sealing foot includes a contacting surface facing away from the retainer head that is contiguous with a main body distal surface from which it extends to form an obtuse angle when the seal is in an unstressed condition:



Ex.1006, ¶122 (citing Figs. 7 and 10 (annotated)).

ix. Element 17[c]: Clip Portion

Benedetti discloses this element. Ex.1006, ¶123; section IX(B)(9)(iv).

x. Element 17[d]: Stepped Collar

Benedetti discloses this element. *See.* Benedetti discloses the claimed stepped, annular-lipped collar. Ex.1006, ¶124; section IX(B)(7), above.

xi. Element 17[e]: Slotted Seal

Benedetti discloses this element. Ex.1006, ¶125; section IX(B)(8), above.

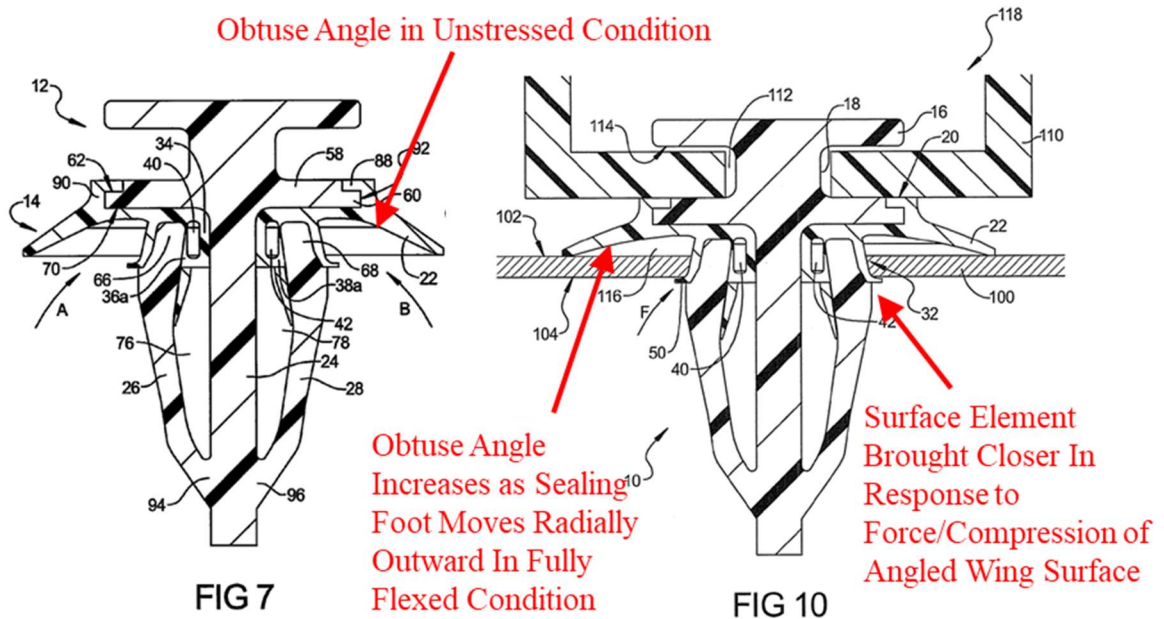
14. Claim 18

Benedetti discloses that its clip portion is configured for insertion into the acceptance opening of the support structure and comprises at least one angled surface that is configured to press against an interior surface of the acceptance opening to urge the retainer further into the acceptance opening. Ex.1008, 51-58; sections IX(B)(1)(i), (1)(v), (6) and (13), above. For the reasons stated above Benedetti discloses the claimed flexible wing having a distal surface configured to press against the interior surface of the acceptance opening to urge the retainer assembly downwardly into the acceptance opening. Ex. 1006, ¶126.

15. Claim 19

Benedetti discloses the elements recited in this claim. *See* sections IX(B)(iv-v) and (14). For at least the reasons stated there, Benedetti discloses that its seal is configured to flex from the unstressed condition toward a fully flexed condition to bring the surface element closer to the support structure in response to the at least one angled surface pressing against the interior surface of the acceptance opening to urge the retainer assembly downwardly into the acceptance opening. In the fully flexed condition, the free edge of Benedetti's sealing foot is disposed farther radially outwardly and closer to the retainer head than in the unstressed condition, and, in the fully flexed condition, the contacting surface of the sealing foot and the distal surface

of the main body form an angle greater than the obtuse angle of the unstressed condition:



Ex. 1006, ¶127 (citing Ex.1007, Figs. 7, 10 annotated).

C. Ground 2: Claims 1-6, 8-9, 11-13 and 16-19 are Obvious in light of Benedetti alone and/or in view of Hirano, or in further view of Pue and/or Iwasaki

1. Independent Claim 1

Benedetti discloses every limitation of independent Claim 1. Ex.1006, ¶128; section IX(B)(1) above.

2. Claim 2

Benedetti discloses every limitation of Claim 2. Ex.1006, ¶129; section IX(B)(2) above.

3. Claim 3

Benedetti discloses every limitation of Claim 3. Ex.1006, ¶130; section IX(B)(3) above.

4. Claim 4

Benedetti discloses every limitation of Claim 4. Ex.1006, ¶131; section IX(B)(4) above.

5. Claim 5

Benedetti discloses every limitation of Claim 5. Ex.1006, ¶132; section IX(B)(5) above.

6. Claim 6

Benedetti discloses every limitation of Claim 6. Ex.1006, ¶133; section IX(B)(6) above.

Benedetti discloses its clip portion comprises at least one surface configured to press against an interior surface of the acceptance opening to urge retainer assembly further into the acceptance opening. Ex.1006, ¶134. If this claim requires direct contact between these surfaces, modifications to Benedetti to provide for such contact would have been obvious.

i. Motivation to Combine

Benedetti acknowledges that “[u]mbrella seals provide adequate sealing capability for preventing fluid leakage from the side of the panel the seal contacts, but may not provide adequate sealing for fluid leakage coming from the opposite

panel side.” *Id.*, ¶136 (citing Ex.1007, 1:17-21). To address a concern with fluid leakage in two directions, Benedetti proposes use of a “second resilient seal member 32.” *Id.*, citing Ex.1007, 1:56-65.

From Benedetti’s disclosures, a POSA would understand that in applications in which there is little or no concern with fluid leakage “from the opposite panel side,” a “second resilient seal member 32” would be unnecessary, and the seal provided by a single umbrella seal “provide[s] adequate sealing capability for preventing fluid leakage from the side of the panel the seal contacts.” *Id.*, ¶¶28, 137. In vehicle fasteners, such applications would include, but not be limited to door pads, lift gates, trunk trim, center console, storage compartment and other interior and exterior trim. *Id.*

In circumstances in which an “umbrella seal[] provide[s] adequate sealing capability for preventing fluid leakage from the side of the panel the seal contacts,” a POSA would be motivated to omit Benedetti’s “second resilient seal member 32” so as to simplify manufacturing, reduce material costs, and facilitate installation of fasteners into acceptance openings formed in support panels by removing additional points of potential failure. *Id.*, ¶138.

A POSA would have been motivated to incorporate aspects of Hirano into Benedetti. Hirano is from the same filed of endeavor as Benedetti. *See In re Bigio*, 381 F.3d 1320, 1325-26 (Fed. Cir. 2004). Like Benedetti, Hirano discloses a press-

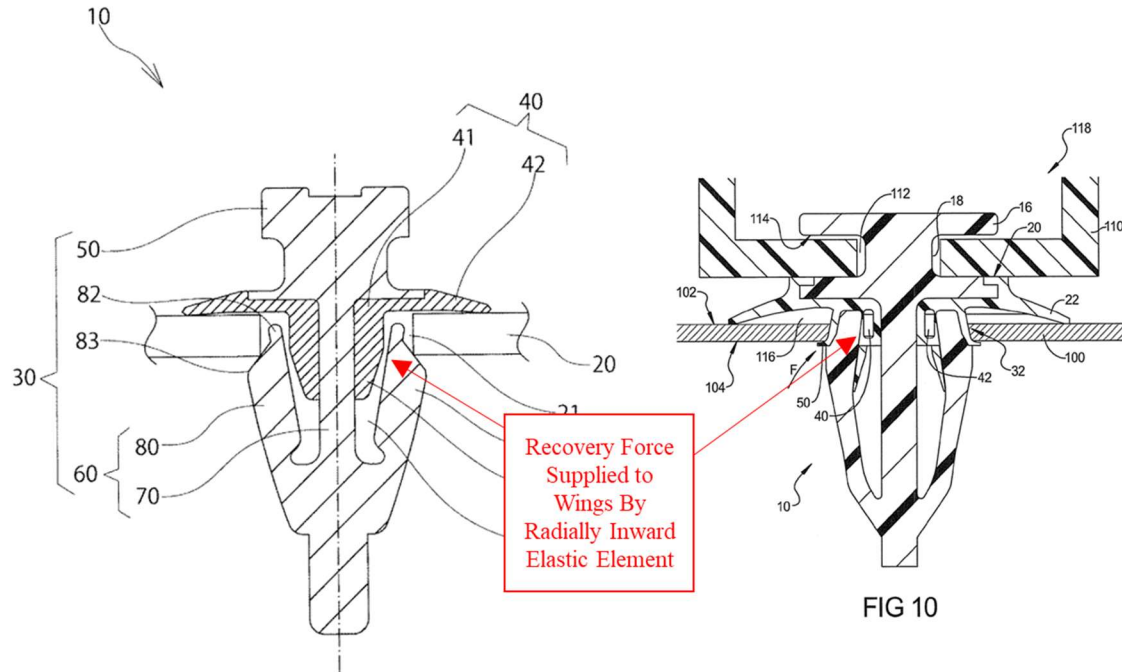
in retainer configured to join a surface element (*e.g.*, attachment member 30) to an underlying support structure (*e.g.*, panel 20). Ex.1006, ¶139 (citing Ex.1013, ¶¶1,16 (“In the figures, 10 represents a retainer 10, which is used to attach other parts, such as weather stripping and the like to panels 20 such as around the door of an automobile or the opening edge of a trunk compartment.”))

Hirano too includes a clip portion having deflectable wings (elastic locking portions 80) having angled surfaces that contact the inner surface of the acceptance opening in the support structure. *Id.*, ¶140 (citing Ex.1013, ¶¶28-30 (“When the elastic locking portion 80 passes through the mounting hole 21, as illustrated in FIG.8C, recovery occurs on the back side of the panel 20 due to the elastic recovery force of the resin, and the tip end sloped portion 83 elastically contacts the inner edge portion of the mounting hole 21[.]”))

Hirano’s fastener also is concerned with fluid leakage occurring from the side of the panel contacted by a seal, disclosing a deflectable umbrella seal like that used by Benedetti for this purpose (portion of flange portion 42), configured such that “an outer circumferential edge portion of the flange portion 42 [that] extends diagonally downward in an umbrella shape, and the wall thickness is made to be relatively thin to facilitate deflection.” *Id.*, ¶141 (citing Ex.1013, ¶22).

Hirano and Benedetti also both disclose fasteners which each supplying additional “recovery forces” applied to the deflectable wings by means of elastic

elements positioned inward of those wings. These common elastic elements are shown below:



Id., ¶142 (citing Ex.1012, Fig.1 and Ex.1007, Fig.10 (annotated)).

In Hirano, cylindrical portion 41 mates to the support rod 70. A plurality of legs extends from the lower end portion of cylindrical portion 41, and are located between the outer circumferential portion of the support rod 70 and the elastic locking portion 80 *i.e.*, the wings. As the elastic locking portion is compressed during its insertion into the acceptance opening, the inner surface of elastic locking portion 80 contacts a leg formed in cylindrical portion 41 which is deformed and which thereby “accumulate[s] recovery force.” Ex.1013, [0034]. The elastic

cylindrical portion 41 provides an additional recovery force once the largest diameter portion to the elastic locking portion 80 has passed through the acceptance opening.

Benedetti describes a fastener having similar operation. Benedetti discloses first and second wing enclosure elements 36, 38, having first and second through bores 40, 42 which accommodated inward deflection of first and second wings 26, 28. First and second wing enclosure elements provide “an elastic rebound force” that supplements the recovery force of the deflected wings. Ex.1006, ¶144.

Based upon the similarities between Benedetti and Hirano, a POSA would have viewed the disclosures in Hirano relating to the creation of a pull-down force in a fastener having an umbrella seal designed “to provide adequate sealing capability for preventing fluid leakage from the side of the panel the seal contacts” as particularly pertinent to one of the problems Benedetti sought to solve (*i.e.* providing a fastener that prevented fluid leakage from the side in contact with the umbrella seal). Ex.1006, ¶145.

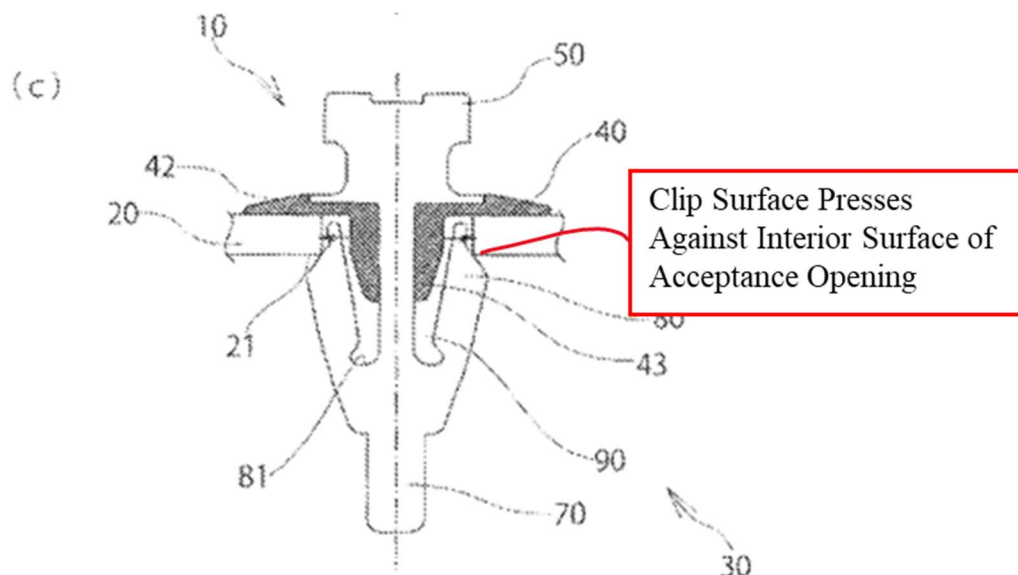
The fact that Benedetti suggests an additional improvement to umbrella fasteners of the Hirano variety designed to address a problem different from that addressed by Hirano, does not “teach away” from the proposed modification. A reference does not teach away if a skilled artisan, upon reading the reference, would *not* be “discouraged from following the path set out in the reference,” and would *not* be “led in a direction divergent from the path that was taken by the

applicant.” *See Adapt Pharma Operations Limited v. Teva Pharmaceuticals USA, Inc.*, 25 F.4th 1354, 1370–72 (Fed. Cir. 2022).⁴ Benedetti’s intended purpose for its fastener does not control. *See Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800–01 (Fed. Cir. 2021) (“Common sense teaches ... that familiar items may have obvious uses beyond their primary purposes.” (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007))). Here, Benedetti specifically contemplated fasteners used in circumstances where fluid leakage from the reverse side of the panel may not be a concern. *See Intel Corp.*, 21 F.4th at 801 (reversing Board’s decision rejecting obviousness where it did not “explain how disabling Der’s variable-gain mixer would hinder its purpose in use cases where ‘achieving the ‘desired output’ requires that the output of the variable-gain mixer be ‘null[ed]’—a possibility that Der itself contemplates.”) Benedetti does not teach that incorporation of Hirano’s configuration is “unlikely to be productive of the result sought by the applicant” (*i.e.*, the creation of a pull-down force in a fastener having an umbrella seal designed “to provide adequate sealing capability for preventing fluid leakage from the side of the panel the seal contacts.”) *See Bayer Pharma AG v. Watson Laboratories, Inc.*, 874

⁴ There is further no rule that even a finding that a single reference teaches away will mandate a finding of nonobviousness. *Adapt Pharma*, 25 F.4th at 1371 (quoting *Medichem S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006). Rather, the prior art must be considered as a whole for what it teaches. *See Medichem*, 437 F.3d at 1166.

F.3d 1316, 1327-28 (Fed. Cir. 2017). The addition of Benedetti's secondary seal is directed to an unrelated problem: reverse fluid leakage. The presence or absence of that secondary seal does not relate to the creation of pull-down forces caused by the inwardly angled surfaced of the compressed wings pressing against the interior surface of the acceptance opening. Such pull down forces are created whether or not that secondary seal is present.

Hirano explicitly acknowledged how angled surfaces under compression due to the dimensionality of the clip and the acceptance opening could be utilized to maintain a tight fit between fastener and vehicle body at least as early as April 14, 2011. Ex.1006, ¶150 (citing Ex.1013, [0026] ("The maximum outer diameter of the pair of elastic locking portions 80 is set to be larger than the inner diameter of the mounting holes 21 of the panel 20.")) Hirano depicts a fastener 10 secured to inner panel 20 (such as an automobile door):



Id. (citing Ex.1012, Fig.1 (annotated)).

Hirano acknowledged the knowledge of a POSA that angled surface under compression assist in securing the fastener in place:

(3) Tip end sloping portion 83

The tip end sloping portion 83 is formed on the outer surface of the tip end portion of the elastic locking portion 80, as illustrated in FIGS. 2 and 4, and slopes diagonally such that the wall thickness of the elastic locking portion 80 gradually decreases toward the tip end protruding portion 82.

...

When the elastic locking portion 80 passes through the mounting hole 21, as illustrated in FIG. 8C, recovery occurs on the back side of the panel 20 due to the elastic recovery force of the resin, and the tip end sloped portion 83 elastically contacts the inner edge portion of the mounting hole 21 and clasps the panel 20”

Ex.1006, ¶151 (citing Ex.1013, ¶¶30, 35).

For all of these reasons, a POSA would have been motivated to dimension Benedetti’s clip support structure to maintain an abutting relation by omitting the secondary seal described in Benedetti so as to configuring the distal face surface to directly contact an interior surface of the acceptance opening to urge the retainer downwardly into the acceptance opening. *Id.*, ¶152.

ii. Reasonable Expectation of Success

As of April 12, 2011, a POSA would have expected success employing Benedetti’s fastener to include at least one surface that is configured to press against

an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening. Ex.1006, ¶153. It would have been a routine matter to a POSA to adjust the width of deflecting wings 26 and 28, in conjunction with the design and dimensions of the support structure, so as to result in an arrangement whereby a wing surface and the support structure are in physical contact. *Id*; see *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (reasonable expectation shown where POSA could have combined elements as claimed by known methods with no change in respective functions, and combination yielded nothing more than predictable results).

7. Claim 8

Benedetti discloses every limitation recited by Claim 8. Ex.1006, ¶154; section IX(B)(7) above.

8. Claim 9

Benedetti discloses every limitation recited by Claim 9. Ex. 1006, ¶155; section IX(B)(8) above.

9. Independent Claim 11

Benedetti discloses every limitation recited by independent Claim 11, or alternatively, the invention recited in Claim 11 would have been obvious to a POSA at least as of April 12, 2011, based upon the disclosures in Benedetti in light of the

knowledge of POSAs at the time and/or the teachings of Hirano, Iwasaki, and/or Pue. Ex.1006, ¶156.

i. Preamble: Retainer

If the preamble of Claim 11 is deemed a limitation, Benedetti discloses a retainer assembly configured to join a surface element to a support structure so that the surface element assumes a contacting abutting relation with the support structure, the support structure having an acceptance opening. Ex.1006, ¶157. If this disclosure is not explicit, it would have been obvious to a POSA to have employed Benedetti's fastener to join surface elements to support structures. *Id.*, ¶158.

1. Motivation to Combine

As early as Benedetti's filing (April 12, 2011), a POSA would have been motivated to maintain a contacting abutting relation between surface elements joined to support structures using push-in type fasteners, in light of his/her knowledge and/or the disclosures in Pue and/or Iwasaki. Ex.1006, ¶159.

In addition, a POSA would have known to avoid unwanted rattling noises by maintaining a tight fit between trim and vehicle body. *Id.*, ¶160. A POSA would also know gaps negatively impacts the vehicle's aesthetic appearance and perceptions of quality. *Id.*

Pue explicitly acknowledged these concerns at least as early as September 1, 2005. Ex.1014. Pue depicts a trim panel 10 fastened to inner steel sheet metal panel 16:

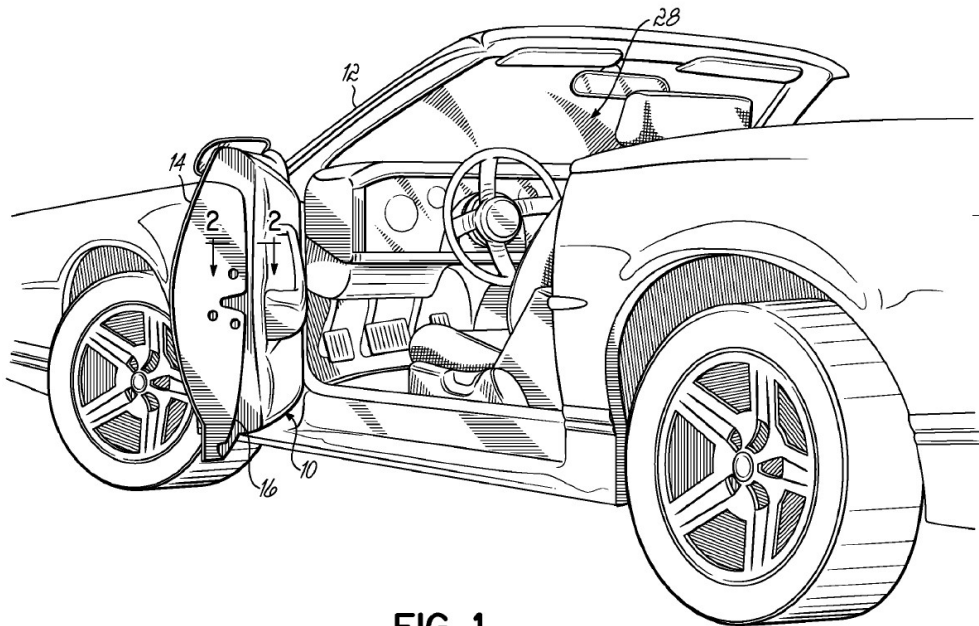


FIG. 1

Ex.1006, ¶161 (citing Ex.1014, [0015], Fig.1).

Pue acknowledged the knowledge of a POSA that

Gaps between trim panels and the vehicle body are undesirable for numerous reasons. First, gaps detract from the visual appearance of the passenger compartment of the vehicle, reducing the perceived quality or the fit and finish of the vehicle. Second, gaps allow the ingress of air, water or moisture, and road noise into the passenger compartment of the vehicle. Third, due to vibrations when the vehicle is being operated, trim panels tend to move with respect to the vehicle body generating noise, or what is commonly referred to as buzz, squeak, and rattle (BSR) noises.

Id., ¶162 (citing Ex.1014, [0003]).

or problem known in the field of endeavor at the time of invention and addressed by the patent’; and the background knowledge, creativity, and common sense of the person of ordinary skill.” *Zup v. Nash Mfg.*, 896 F.3d 1365, 1371 (Fed. Cir. 2018) (quoting *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed. Cir. 2013)). The knowledge/disclosures outlined above would have motivated a POSA to dimension Benedetti’s clip with surface element and support structure to maintain a contacting abutting relation. Ex.1006, ¶165.

2. Reasonable Expectation of Success

As of April 12, 2011, a POSA would have expected success employing Benedetti’s fastener to maintain a substantially zero gap. *Id.*, ¶166. It would have been a routine matter to a POSA to adjust the height of the engagement head 16 and planar face 20 of second fastener portion 14 connected by neck 18, above the panel (100), in conjunction with the design and dimensions of the surface element, including component (110) into which the clip is secured, so as to result in an arrangement whereby the surface element and the support structure are in contact. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (reasonable expectation shown where POSA could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results).

It would have been obvious as of April 12, 2011, to employ Benedetti's fastener to attach surface elements, such as trim or molding, to support structures, such as automotive body panels, in a manner that would maintain an abutting relationship between the trim and the body panel, as disclosed by Iwasaki. A POSA would have been motivated to employ Benedetti's fastener in this manner to avoid the disadvantages of gaps. A POSA would have had a reasonable expectation of success in doing so. Ex.1006, ¶167.

ii. Element 11[a]: Head/Collar/Neck

Benedetti discloses this element. *Id.*, ¶168; section IX(B)(9)(ii), above.

iii. Element 11[b]: Seal/Body/Foot

Benedetti discloses this element. *Id.*, ¶¶169-170; section IX(B)(9)(iii), above.

iv. Element 11[c]: Clip Portion

Benedetti discloses this element. *Id.*, ¶171; section IX(B)(9)(iv), above.

v. Element 11[d]: Flex/Flatten

Benedetti discloses this element. *Id.*, ¶172; section IX(B)(9)(v), above.

10. Claim 12

Benedetti discloses a retainer having a molded unitary head and clip portion. The invention recited in Claim 12 would have been obvious to a POSA at least as of April 12, 2011, based upon the disclosures in Benedetti in light of the knowledge of POSAs at the time and/or the teaching of Iwasaki, Pue and/or Hirano. *Id.*, ¶173; section IX(C)(3), above.

11. Claim 13

Benedetti's clip portion includes a central support extending from a collar. Section IX(C)(9)(iv), above. The invention recited in Claim 13 would have been obvious to a POSA at least as of April 12, 2011, based upon the disclosures in Benedetti in light of the knowledge of POSAs at the time and/or the teaching of Iwasaki, Pue and/or Hirano. Ex.1006, ¶174.

12. Claim 16

Benedetti the clip portion as claimed, and/or renders this element obvious to a POSA in combination with the knowledge of POSAs and/or in light of the teaching of Iwasaki, Pue and/or Hirano. Ex.1008, 51-58; Ex.1006, ¶175; sections IX(C)(5)-(6), (9)(i) and (9)(iv), above.

13. Independent Claim 17

Benedetti discloses every limitation recited by independent Claim 17. *Id.*, ¶176.

i. Preamble: Retainer

If the preamble of Claim 17 is deemed a limitation, however, as discussed in connection with the preamble of Claims 11 and 1, above, Benedetti discloses the claimed retainer assembly and/or renders this element obvious to a POSA in combination with the knowledge of POSAs and/or in light of the teaching of Iwasaki, Pue and/or Hirano. Ex.1006, ¶177; sections IX(C)(1) and (9).

ii. Element 17[a]: Head/Collar/Neck

Benedetti discloses a press-in retainer having a head including a collar, platform and neck as recited. Ex.1006, ¶178; section IX(C)(ii), above.

iii. Element 17[b]: Seal/Body/Foot

Benedetti discloses a seal as recited. *Id.*, ¶179; section IX(C)(iii), above.

iv. Element 17[c]: Clip Portion

Benedetti discloses the claimed clip portion extending from the collar in the manner claimed. Ex.1006, ¶180; section IX(C)(iv), above.

v. Element 17[d]: Stepped Collar

Benedetti discloses the claimed stepped, annular-lipped collar. Ex.1006, ¶181; section IX(C)(7), above.

vi. Element 17[e]: Slotted Seal

Benedetti's seal is molded about the collar in the manner recited. Ex.1006, ¶182; section IX(C)(8), above.

14. Claim 18

Benedetti discloses the recited elements. Ex.1008, 51-58; sections IX(C)(12)-(13). The invention recited in Claim 18 would have been obvious to a POSA at least as of April 12, 2011, based upon the disclosures in Benedetti in light of the knowledge of POSAs at the time and/or the teaching of Iwasaki, Pue and/or Hirano. Ex.1006, ¶183.

15. Claim 19

Benedetti discloses the claimed retainer assembly. Ex.1006, ¶184; sections IX(C)(9) and (14), above.

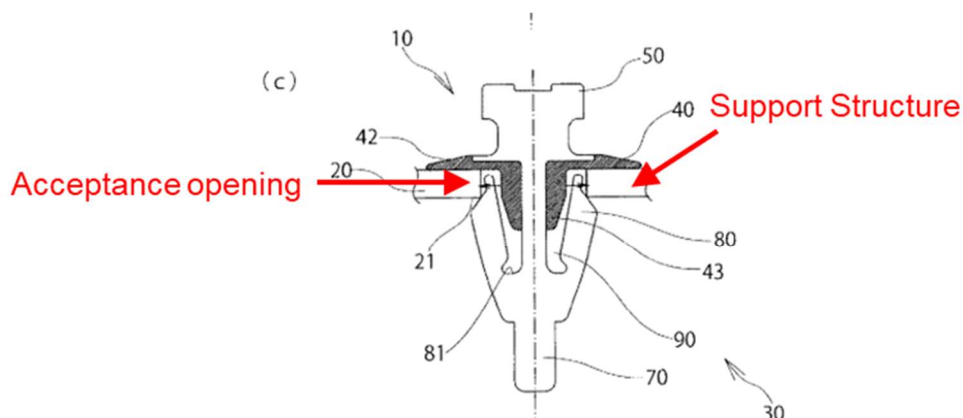
D. Ground 3: Claims 1-6, 8-9, 11-13 and 16-19 are Anticipated by Hirano

1. Independent Claim 1

Hirano explicitly discloses all elements of independent Claim 1. Ex.1006, ¶185.

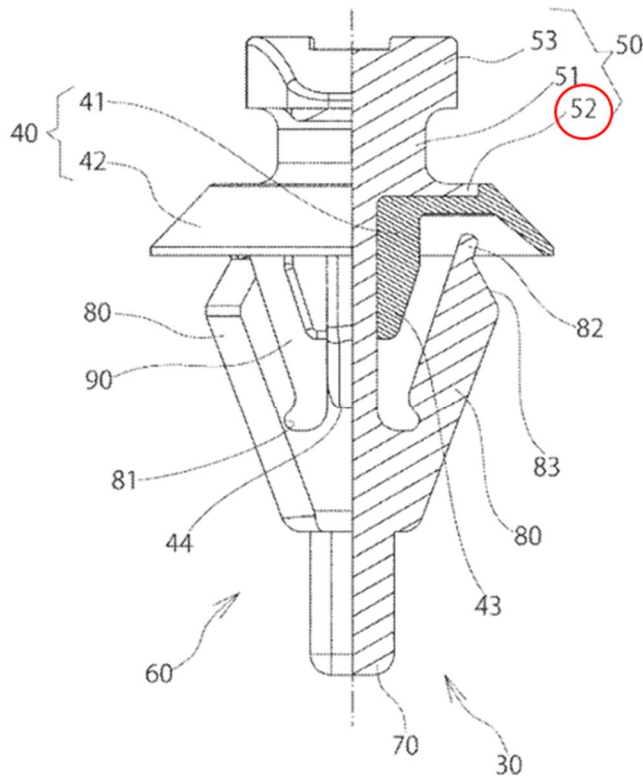
i. Preamble: Press-In Retainer

Hirano discloses a press-in retainer (retainer 10 or 30) configured for insertion into an acceptance opening in the support structure (panel 20). Ex.1006, ¶186 (citing Ex.1013, ¶16, Fig.8c (annotated below)).

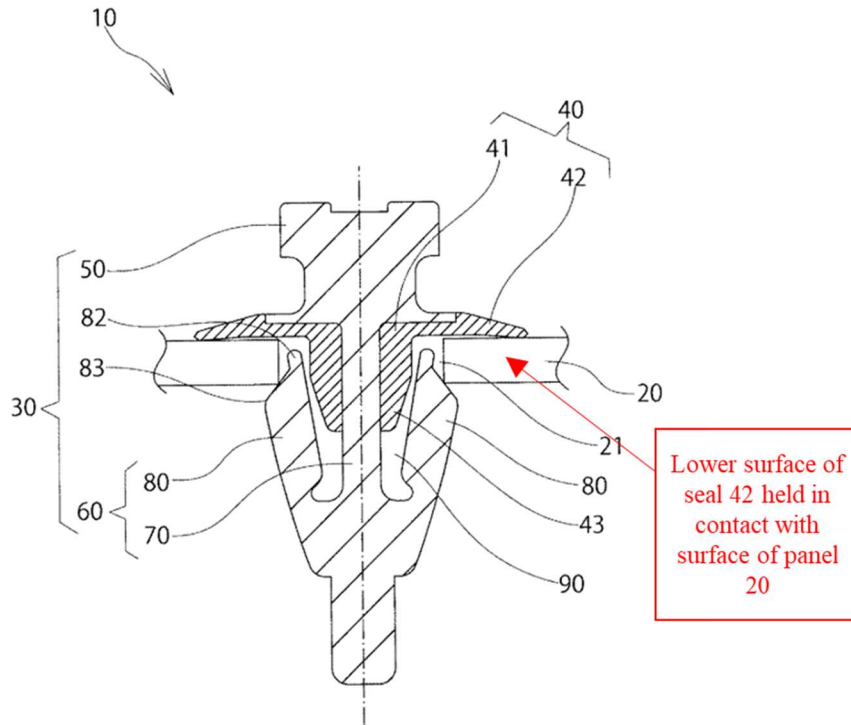


ii. Element 1[a]: Head/Collar/Seal

Hirano discloses a retainer head having a collar (including extending portion 52). Ex.1006, ¶186 (citing Ex.1013, Fig.4).



Hirano discloses a seal (flange portion 42 of bushing 40) disposed at least partially about the collar. Ex.1006, ¶188 (citing Ex.1013, ¶¶19-22, Fig.4). Hirano discloses that bushing 40 is made of an “elastic material” having a “flange portion 42.” *Id.* (citing Ex.1013, [0019]). When the retainer is inserted, the “lower surface of flange portion 42” is held in contact with surface of panel 20, *i.e.*, sealing the acceptance opening. *Id.* (citing Ex.1013, [0029-30]).



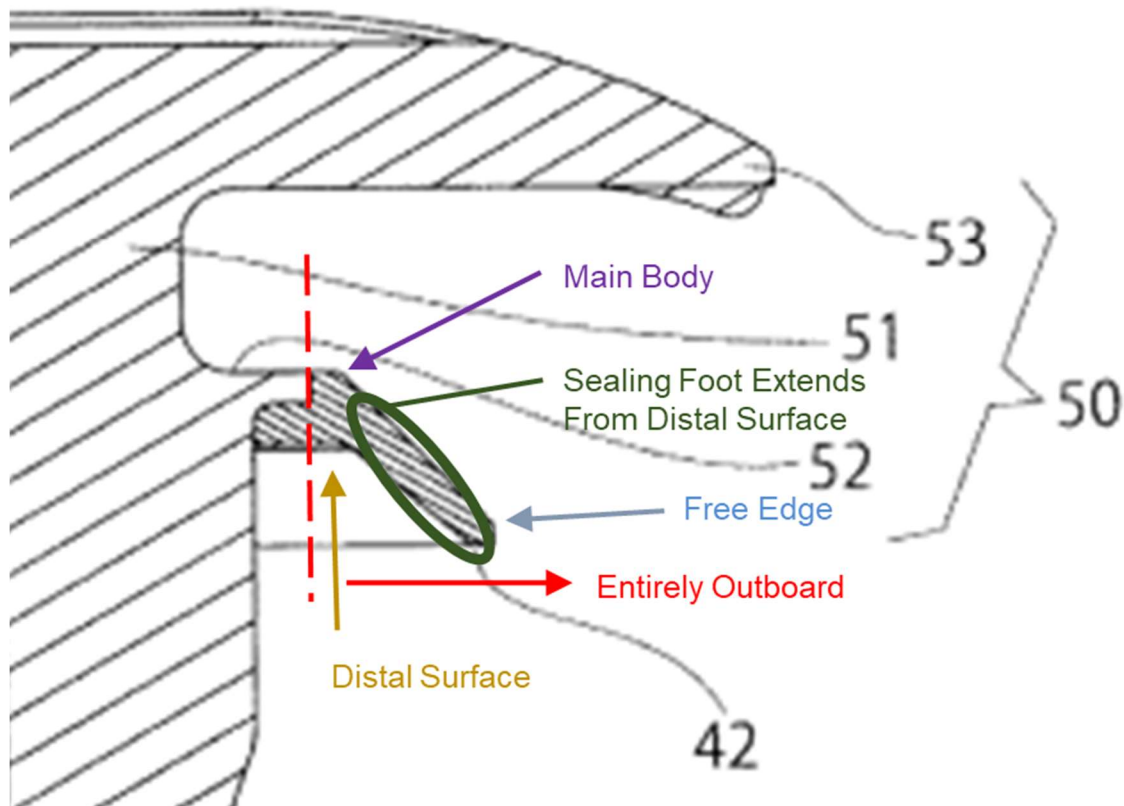
Id. citing Ex.1012, Fig.1 (annotated).

iii. Element 1[b]: Clip Portion

Hirano teaches the retainer's clip portion (leg portion 60, column 70, elastic locking portion 80 identified in Fig.1) projects from the collar. Ex.1006, ¶189 (citing Ex.1013, ¶¶28-30).

iv. Element 1[c]: Seal/Body/Foot

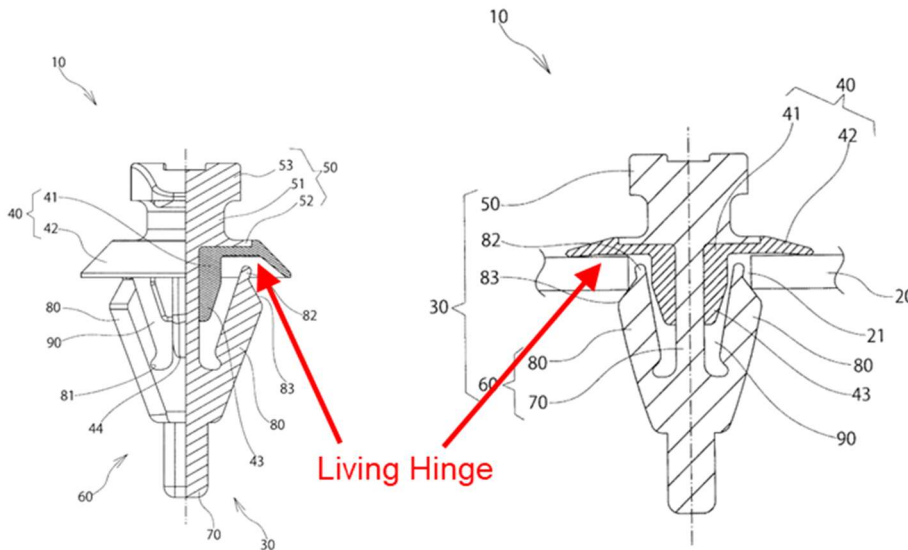
Hirano discloses a bushing 40 (seal) having a main body (portions of bushing 40/flange portion 42 adjacent to extending portion 52) that engages the collar (52) and a sealing foot (portions of flange portion 42). Ex.1006, ¶190 (citing Ex.1012, ¶¶19-20, Figs. 1-5, Fig.3 (annotated)).



Hirano teaches that the main body and sealing foot are contiguous, formed together via injection molding. *Id.*, (citing Ex.1013, [0029-31]). When in an unstressed condition, the sealing foot (portion of flange portion 42) projects at an obtuse angle (facing the clip portion) from a distal surface of the seal's main body to a free edge, such that it is disposed entirely outboard from the collar. *Id.* (citing Ex.1012, ¶22, Fig.3).

v. Element 1[d]: Flex/Living Hinge.

Hirano discloses a living hinge (*i.e.*, “an area integral to the hinged part at which the part will readily bend or flex”) about which the sealing foot flexes that is located at an intersection of the sealing foot and the main body portions:

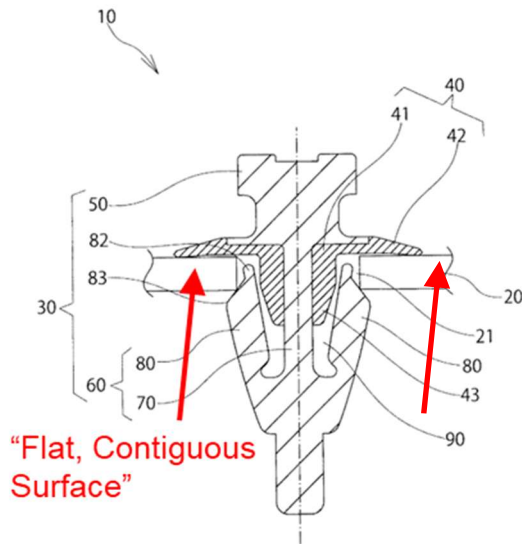


Ex.1006, ¶192, (citing Ex. 1012, Figs. 1 and 4 (annotated)).

As shown above, Hirano’s sealing foot (portion of flange 42) is configured such that it flexes about this living hinge from an unstressed condition (Figs. 4 and 8a) toward a substantially flattened condition while remaining entirely outboard of the second platform (Figs. 1 and 8c). Ex.1006, ¶193 (citing Ex.1013, [0022] (“elastically deflects”), Figs. 1, 4, 8a-c).

vi. Element 1[e]: Flattening

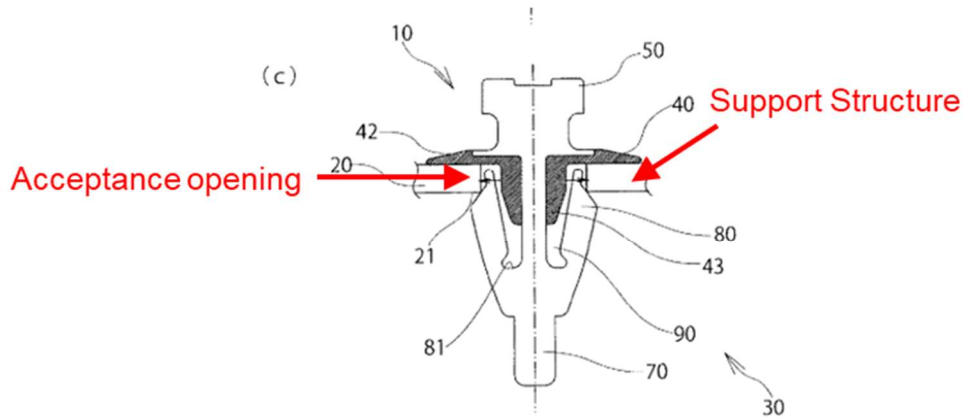
Hirano discloses a sealing foot wherein when in a substantially flattened condition, the obtuse angle between the sealing foot and the distal surface of the main body will approach a flat contiguous surface.



Ex.1006, ¶194 (citing Ex.1012, Fig.1 (annotated)).

2. Claim 2

- Hirano discloses a fastener joining weather stripping (surface element) to panels of automotive vehicles (support structures). Ex.1006, ¶195 (citing Ex. 1013, ¶[0016] (Noting retainer “is used to attach other parts, such as weather stripping and the like to panels 20[.]”)) Hirano teaches a clip portion configured for insertion into the acceptance opening (mounting hole 21) in the support structure (panel 20). *Id.* (citing Ex.1013, [0018], Fig.1 (annotated)).

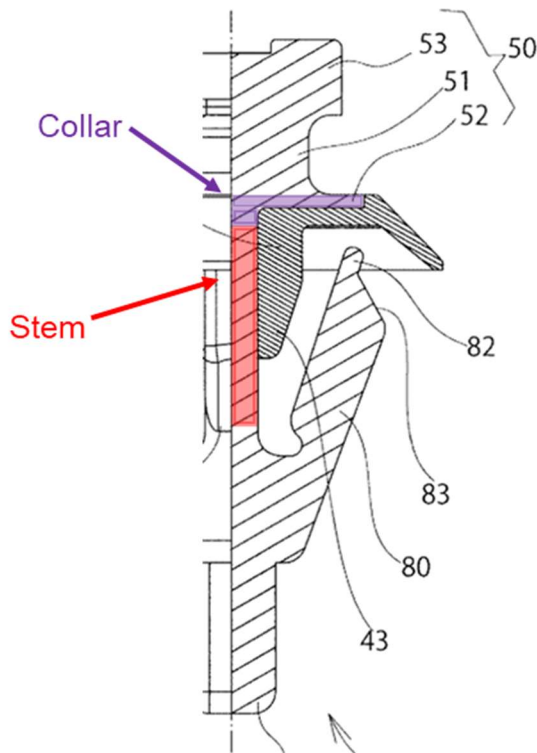


3. Claim 3

Hirano discloses the head and clip portions of its retainer are molded as a unitary structure. Ex.1006, ¶196 (citing Ex.1013, [0018] (“Furthermore, the insertion pin 30 is integrally molded from a relatively hard thermoplastic resin having the appropriate elasticity and rigidity, such as POM (polyoxymethylene), for example.”))

4. Claim 4

Hirano discloses a clip portion having a stem (portion of column 70) extending from the collar (lower portion of head 50 including extending portion 52). Ex.1006, ¶197 (citing Ex.1013, [0026], Fig.4). The column 70 may be cylindrical. *Id.*



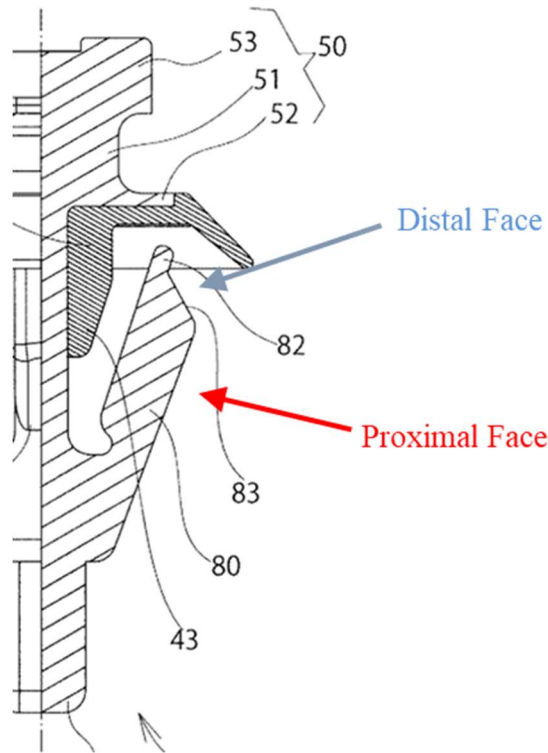
Id. (citing Ex.1012, Fig.4 (annotated)).

5. Claim 5

Hirano discloses the claimed clip portion comprises a pair of flexible wings (elastic locking portions 80) extending at an angle away from the end of the stem (*i.e.*, portion of column 70 identified in annotated figure, above). Ex.1006, ¶198.

Hirano depicts wings 80 having a dog-leg configuration. *Id.*, (citing Ex.1012, [0025]-[0030]). Elastic locking portions 80 have proximal face and distal face surfaces. The proximal face surface extends from the end of the stem (identified portion of column 70) radially outwardly, toward the collar (52), and to the distal face surface (83) (see below). The distal face surface (83) extends from the proximal

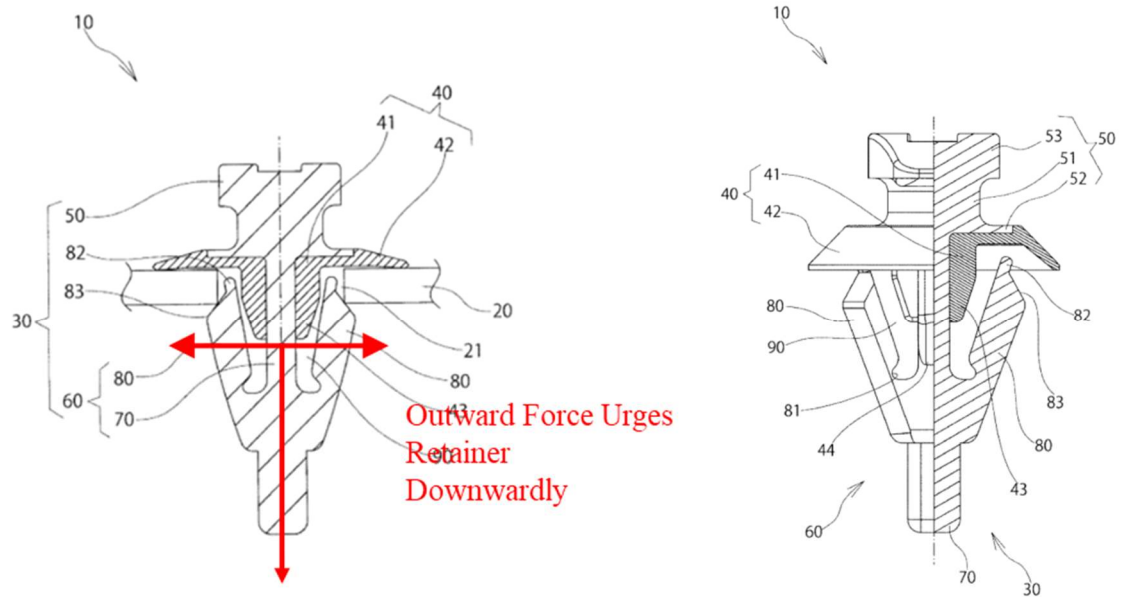
face surface radially inwardly, toward the collar (52), and to a free tip of the flexible wing (see below). *Id.*, ¶199 (citing Ex.1012, [0022-25], Fig.4 (annotated)):



6. Claim 6

Hirano teaches clip portion is configured to press against an interior surface of the acceptance opening to urge the retainer downwardly into the acceptance opening. Elastic locking portions 80 of the fastener 10 are inserted into hole 21 (acceptance opening). The distal faces (83) of locking portions 80 press elastically outward against interior surface of the panel opening 21. Ex.1006, ¶200 (citing Ex.1013, [0025-30] and [0032-37] (“the tip end sloped portion 83 elastically contacts the inner edge portion of the mounting hole 21”). Because of their inward angle, these distal surfaces (83) serve to urge the fastener downward. Ex.1013,

[0030] (noting this elastic contact “clasps the panel” against “the lower surface of flange portion 42” with sufficient downward force to flatten flange portion against upper surface of panel 20)



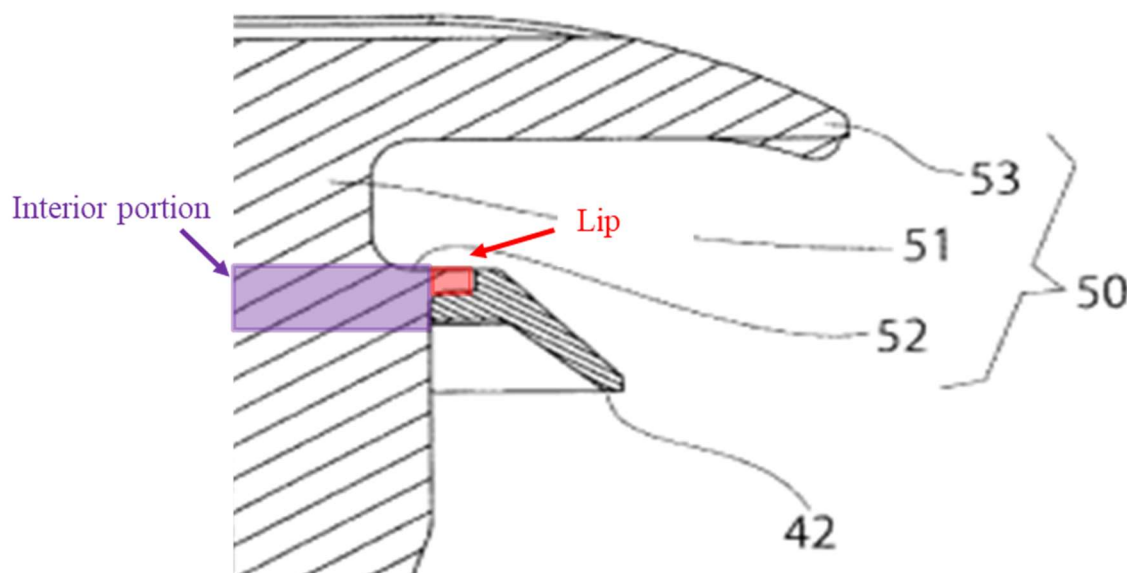
Id. (citing Ex.1012, Figs. 1, 4 (annotated)).

7. Claim 8

Hirano teaches that the collar (including extending portion 52) is annular. Hirano explains that “The extending portion 52 extends in the form of a ring from the lower end portion of the center shaft portion 51.” Ex.1006, ¶203 (citing Ex.1013, [0024], Fig.3).

The collar has a construction that includes interior collar portions (highlighted in purple) that reduced in thickness to an outer annular lip (extending portion 52, highlighted in red) disposed circumferentially about the interior collar portion and

extending outwardly from its perimeter. *Id.* This configuration is illustrated in Figure 3:



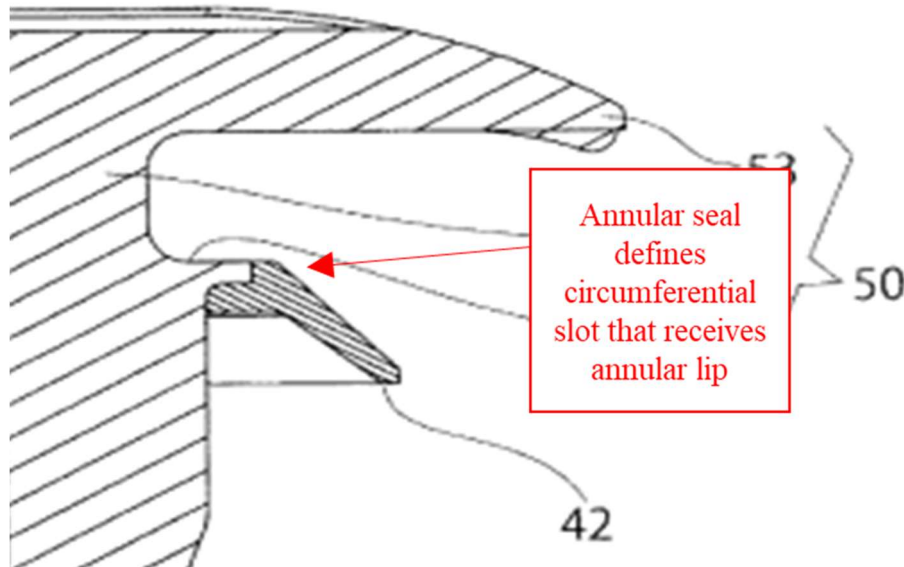
Id. (citing Ex.1012, Fig.3 (annotated)).

8. Claim 9

Hirano teaches that the seal's main body is annular. Ex.1006, ¶205 (citing Ex.1013, [0022] ("the flange portion 42 extends outward radially from the upper end portion of the cylindrical portion 41") and Fig.3).

Hirano also explains that the seal has a structure including an inner diameter of the main body adapted to receive the outer annular lip of the collar, as shown below. Ex.1013, [0024, 31-32] ("using a relatively soft thermoplastic resin such as a class 1 elastomer, the bushing 40 is molded in a second stage to the retainer 10." and Fig.3). A POSA would understand use of the indefinite article "an" to mean that

any “inner diameter” of the seal may at least partially contact any “outer diameter” of the collar. Ex.1006, ¶206.



Id. (citing Ex.1012, Fig.3 (annotated)).

9. Independent Claim 11

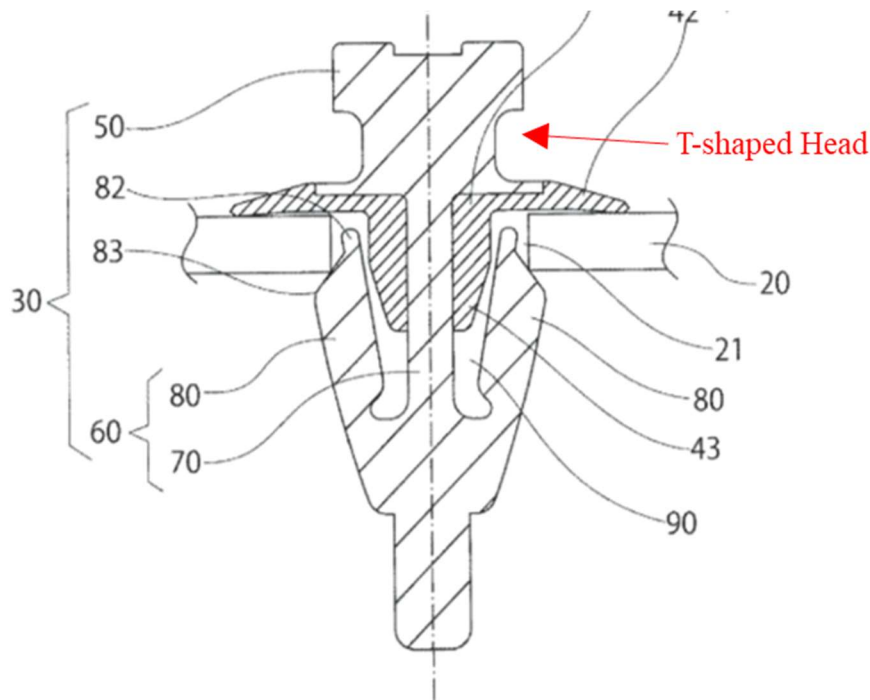
Hirano discloses every limitation recited by independent Claim 11. Ex.1006, ¶207.

i. Preamble: Retainer

If the preamble of Claim 11 is deemed a limitation, Hirano discloses a retainer assembly configured to join a surface element to a support structure so that the surface element assumes a contacting abutting relation with the support structure, the support structure having an acceptance opening. *Id.*, ¶208.

ii. Element 11[a]: Head/Collar/Neck

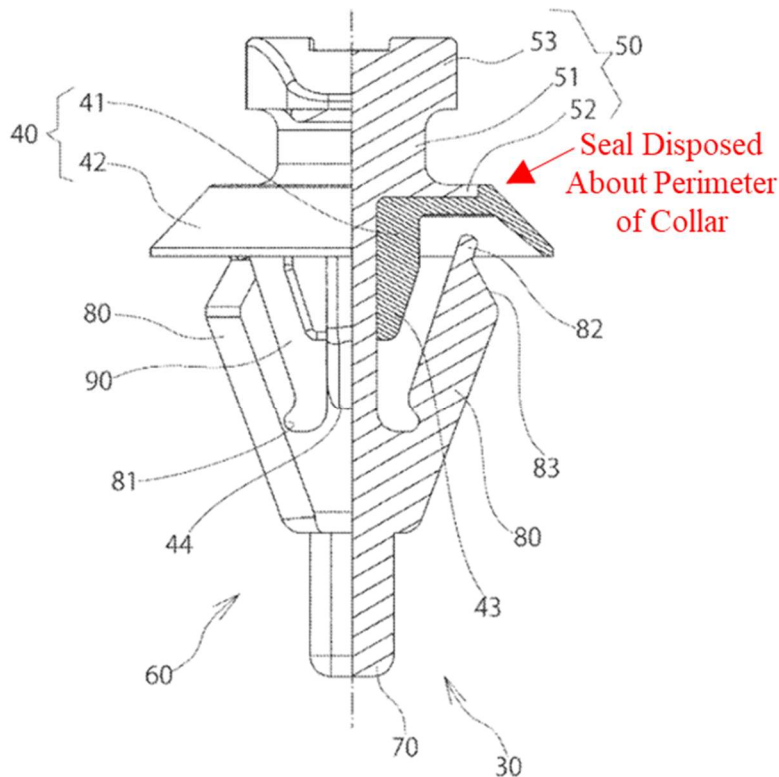
See Element 1[b], above. Hirano discloses a retainer assembly having a head including a collar, a platform, and a neck disposed between the collar and the platform, the retainer head being configured for placement into a channel defined by the surface element. *Id.*, ¶209, (citing Ex.1013, [0025] (“the piercing portion 53 extends from the lower end portion of the center shaft portion 51 in a T-shape, and . . . [although] not illustrated . . . is pierced into the weather stripping and secured in an embedded form.”)).



Id. (citing Ex.1012, Fig.1 (annotated)).

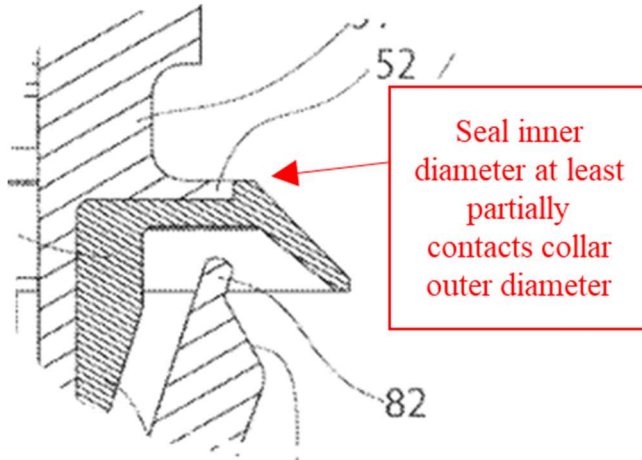
iii. Element 11[b]: Seal/Body/Foot

Hirano discloses a seal disposed about a perimeter of the collar, comprising an annular main body and a sealing foot, with the sealing foot being connected to the main body by a living hinge. The sealing foot extends along a perimeter of the main body and is disposed entirely outboard from the collar, extending from the living hinge to a free edge. *See* sections IX(D)(1)(ii)-(v), above.



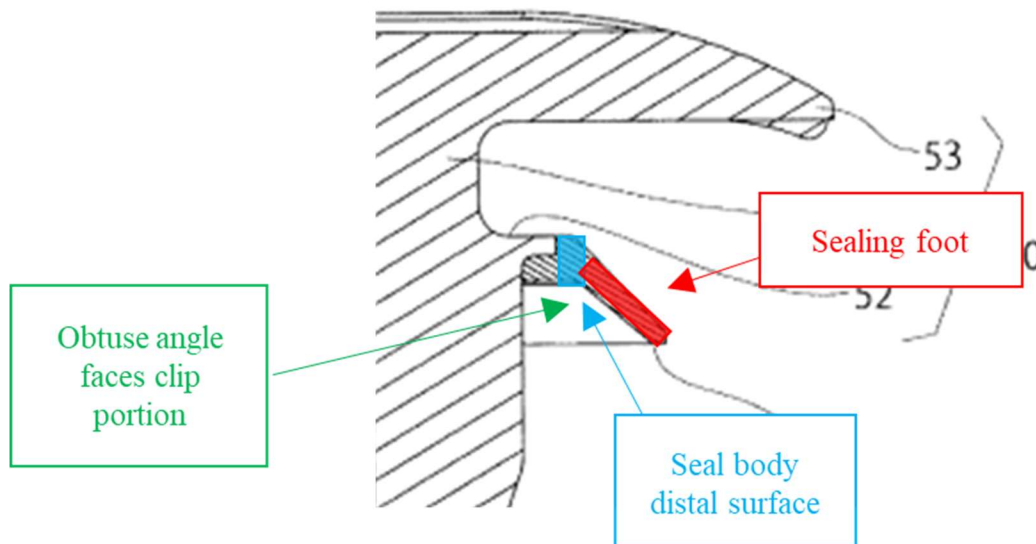
Ex.1006, ¶210, (citing Ex.1012, Fig.3 (annotated)).

An inner diameter of the main body at least partially contacts an outer diameter of the collar.



Id., ¶211, (citing Ex.1012, Fig.4 (annotated)).

A contacting surface of the sealing foot is contiguous with a distal surface of the main body, the contacting surface and the distal surface both facing away from the retainer head and form an obtuse angle when the seal is in an unstressed condition; Hirano discloses this element. Ex.1006, ¶212.



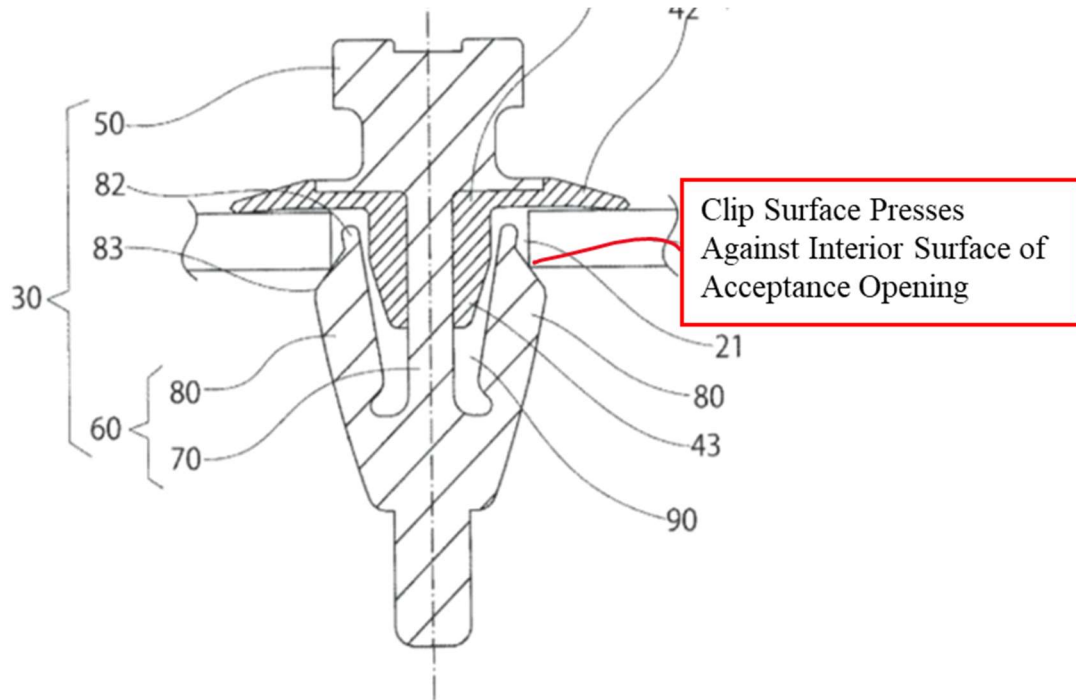
Id. (citing Ex.1012, Fig.3 (annotated)).

iv. Element 11[c]: Clip Portion

Hirano discloses a faster having a clip portion extending from the collar of the retainer head which is configured for insertion into the acceptance opening of the support structure. *See* sections IX(D)(1) and (6), above.

Hirano discloses that this clip portion comprises at least one surface that is configured to press against an interior surface of the acceptance opening to urge the retainer assembly further into the acceptance opening. Ex.1006, ¶214.

Hirano explicitly acknowledged how angled surfaces under compression due to the dimensionality of the clip and the acceptance opening could be utilized to maintain a tight fit between fastener and vehicle body at least as early as April 14, 2011. *Id.*, ¶215, Ex.1013, [0026] (“The maximum outer diameter of the pair of elastic locking portions 80 is set to be larger than the inner diameter of the mounting holes 21 of the panel 20.”) Hirano depicts a fastener 10 secured to inner panel 20 (such as an automobile door):



Id. (citing Ex.1012, Fig.8C (annotated)).

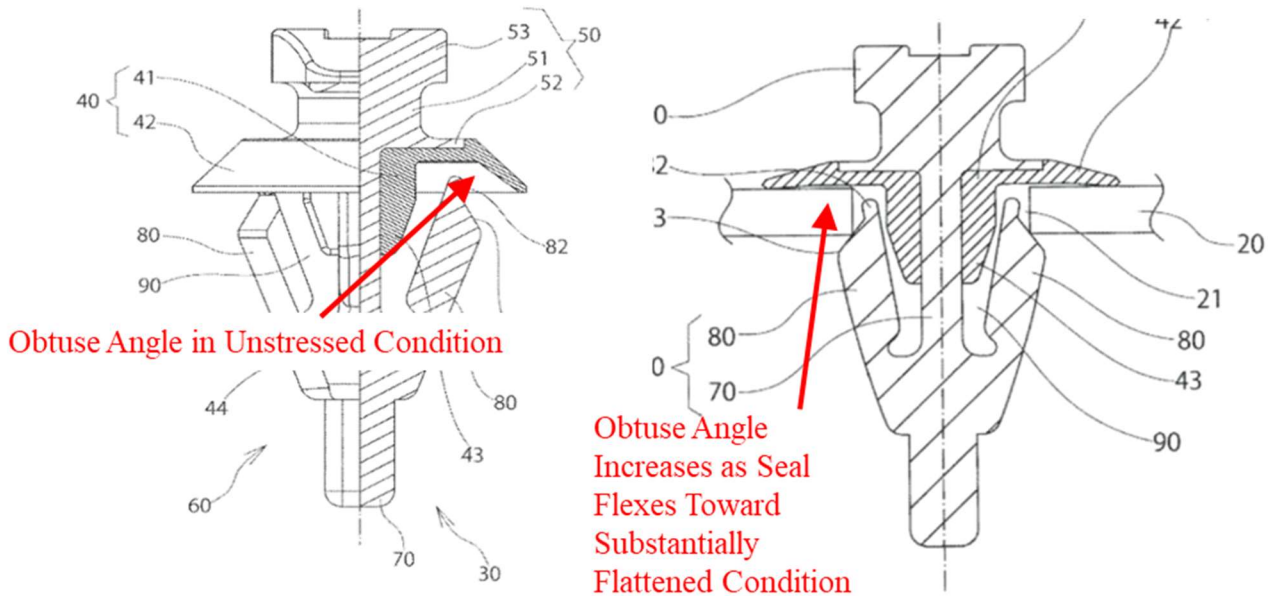
Hirano acknowledged the knowledge of a POSA that angled surface under compression caused by contacting the inner surface of the acceptance opening to assist in securing the fastener in place. *Id.*, ¶216 (citing Ex.1013, [0030, 35]).

v. Element 11[d]: Flex/Flatten

Hirano discloses a sealing foot is configured to flex from the unstressed condition toward a fully flexed condition to bring the surface element closer to the support structure. Hirano discloses a seal which, in its fully flexed condition, the free edge of the sealing foot is disposed radially outwardly and closer to the retainer head and the contacting surface of the sealing foot and the distal surface of the main

body form an angle greater than the obtuse angle of the unstressed condition.

Ex.1006, ¶217; sections IX(D)(1)(v)-(vi), above.



Id., (citing Ex.1012, Figs. 1, 4 (annotated)).

10. Claim 12

Hirano discloses a retainer having a molded unitary head and clip portion. *Id.*

¶218; section IX(D)(3), above.

11. Claim 13

Hirano's clip portion includes a central support extending from a collar. *Id.*

¶219; section IX(D)(4), above.

12. Claim 16

Hirano discloses the clip portion as claimed. *Id.* ¶220; sections IX(D)(5)-(6), and (9)(i)-(iv), above.

13. Independent Claim 17

Hirano discloses every limitation recited by independent Claim 17. *Id.*, ¶221.

i. Preamble: Retainer

If the preamble of Claim 17 is deemed a limitation, however, as discussed in connection with Claims 11[preamble] and 1[preamble], above, Hirano discloses the claimed retainer assembly. *Id.* ¶222; section IX(D)(1)(i) and (9)(i), above.

ii. Element 17[a]: Head/Collar/Neck

Hirano discloses this element. Ex.1006, ¶223; section IX(D)(9)(ii), above.

iii. Element 17[b]: Seal/Body/Foot

Hirano discloses this element. Ex.1006, ¶224; section IX(D)(9)(iii), above.

iv. Element 17[c]: Clip Portion

Hirano discloses this element. Ex.1006, ¶225; section IX(D)(9)(iv), above.

v. Element 17[d]: Stepped Collar

Hirano discloses this element. Ex.1006, ¶226; sections IX(D)(7) and (9)(v), above.

vi. Element 17[e]: Slotted Seal

Hirano discloses this element. Ex.1006, ¶227; sections IX(D)(8) and (9)(vi), above.

14. Claim 18

See Claim 15 and 17, above. Hirano discloses that its clip portion is configured for insertion into the acceptance opening of the support structure and comprises at

least one angled surface that is configured to press against an interior surface of the acceptance opening to urge the retainer further into the acceptance opening.

Ex.1006, ¶228.

15. Claim 19

See Claim 11 and 18 above. Hirano discloses the claimed retainer assembly.

Ex.1006, ¶229.

E. Ground 4: Claims 1-20 are Obvious in light of Hirano alone and/or in view of Benedetti, or in further view of Iwasaki and/or Pue

1. Independent Claim 1

Hirano discloses every limitation recited by independent Claim 1. Ex.1006, ¶230; section IX(D)(1) above.

2. Claim 2

Hirano discloses every limitation recited by Claim 2. Ex.1006, ¶231; section IX(D)(2) above.

3. Claim 3

Hirano discloses every limitation recited by Claim 3. Ex.1006, ¶232; section IX(D)(3) above.

4. Claim 4

Hirano discloses every limitation recited by Claim 4. Ex.1006, ¶233; section IX(D)(4) above.

5. Claim 5

Hirano discloses every limitation recited by Claim 5. Ex.1006, ¶234; section IX(D)(5) above. If Hirano is found to not explicitly disclose this element, it would have been obvious to a POSA to modify support rod 70 to eliminate the portion that extends beyond the point at which elastic locking portions 80 join rod 70. *Id.*

i. Motivation to Combine

Applications for fasteners like Hirano's fastener may have limited clearance. *Id.*, ¶235. For example, the space beneath panels available to accommodate to-be-inserted fasteners of particular lengths may be limited. *Id.* In circumstances which require a shorter fastener, the length of rod 70 could be reduce in the manner shown in Benedetti without compromising the fastener's performance.

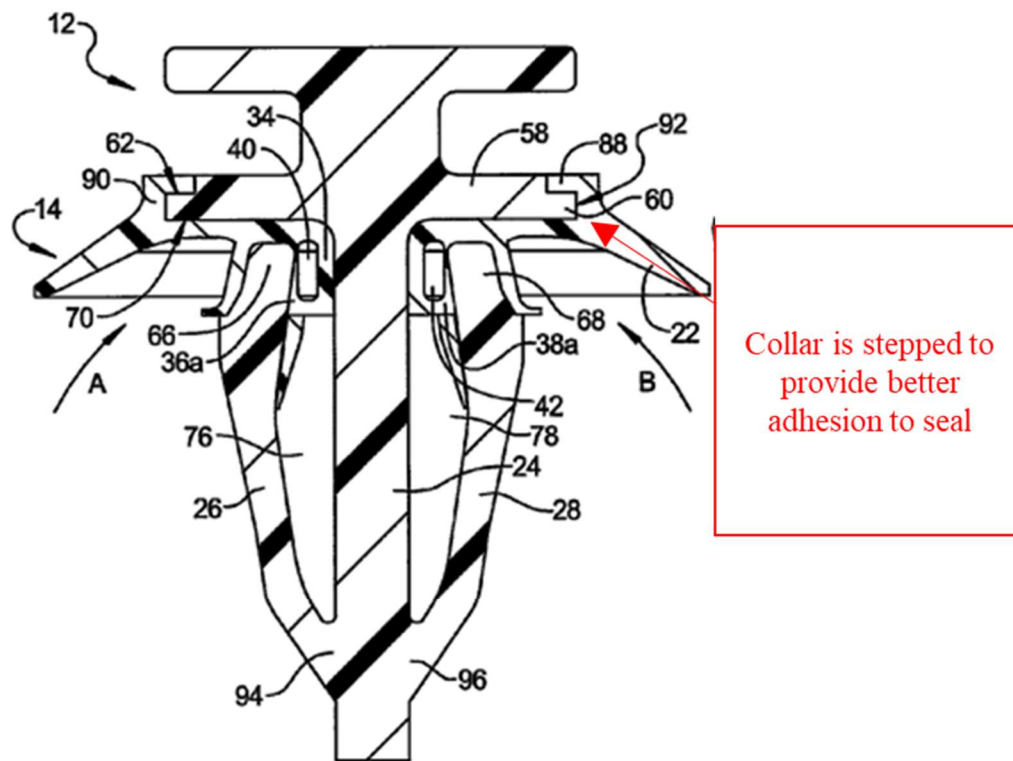


FIG 7

Id. (citing Ex. 1007, Fig.7).

The knowledge/disclosures outlined above would have motivated a POSA to dimension Hirano's collar in a stepped configuration to provide better adhesion. Ex.1006, ¶236. *Zup*, 896 F.3d at 1371.

ii. Reasonable Expectation of Success

As of October 5, 2010, a POSA would have expected success in making the modifications discussed. Ex.1006, ¶237. It would have been a routine matter to a POSA to adjust reduce the length of rod 70. *Id.*; see *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007)(reasonable expectation shown where POSA could have

combined elements by known methods with no change in functions, and combination yielded predictable results).

It would have been obvious as of October 5, 2010, to configure Hirano's fastener such the proximal face surfaces of the wings (80) extended from the end of the stem radially outward. *Id.*, ¶238.

6. Claim 6

Hirano discloses every limitation recited by Claim 6. *Id.*, ¶239; section IX(D)(6) above.

7. Claim 8

Hirano discloses every limitation recited by Claim 8. *Id.*, ¶240; section IX(D)(7) above. If Hirano is found to not explicitly disclose this element, it would have been obvious to a POSA to modify the lip 52 of Hirano to include a stepped construction because it was known to use such shapes for collars engaged with seals. *Id.*

i. Motivation to Combine

A stepped collar provides additional surface area against which the seal may bond. *Id.*, ¶241. A stepped collar like Benedetti's would also strengthen the attachment of the seal to the fastener, preventing the seal from pulling away from the lower collar if downward forces are applied to the sealing foot that could tear the seal from the lower collar--forces expected to be encountered during assembly of

The knowledge/disclosures outlined above would have motivated a POSA to dimension Hirano's collar in a stepped configuration to provide better adhesion. *Ex.1006*, ¶242; *Zup*, 896 F.3d at 1371.

ii. Reasonable Expectation of Success

As of October 5, 2010, a POSA would have expected success employing a stepped collar in Hirano's fastener to adhere to the seal 40. *Ex.1006*, ¶243. It would have been a routine matter to a POSA to adjust the dimensions of extending portion 52, center shaft 51, and/or column 70 so as to result in an arrangement whereby a step is provided to mate with the seal. *Id*; see *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (reasonable expectation shown where POSA could have combined elements by known methods with no change in functions, and combination yielded predictable results).

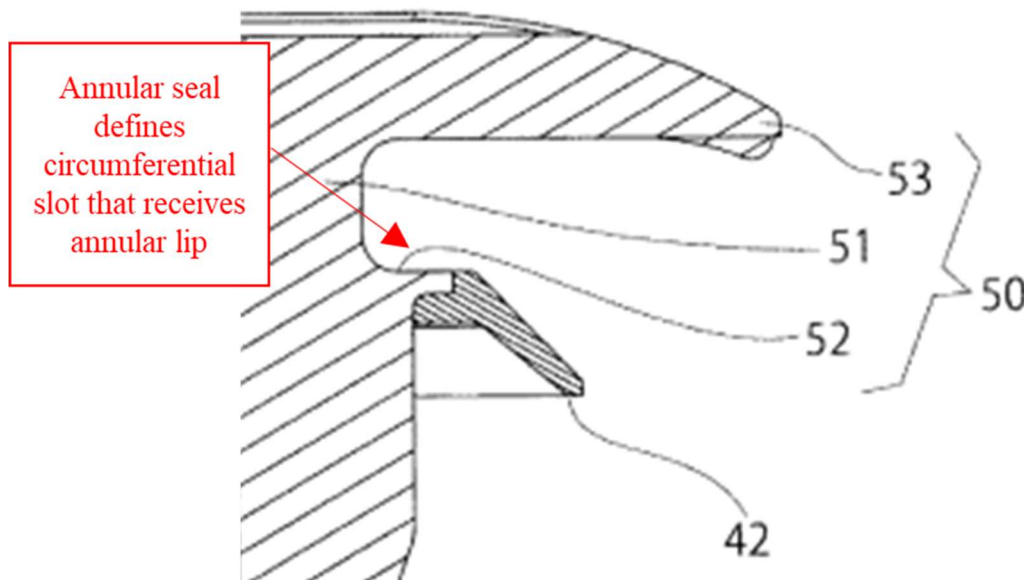
It would have been obvious as of October 5, 2010, to use a stepped configuration in Hirano's fastener to attach a seal, as disclosed by Benedetti. A POSA would have been motivated to employ Hirano's fastener in this manner to avoid the disadvantages of loose seals. A POSA would have had a reasonable expectation of success in doing so. *Ex. 1006*, ¶244.

8. Claim 9

Hirano discloses every limitation recited by Claim 9. *Id.*, ¶245; section IX(D)(8) above. Hirano discloses that the main body of the seal is annular and

further includes a circumferential acceptance slot that extends circumferentially along an inner diameter of the main body, and wherein the circumferential slot is configured to receive the outer annular lip of the collar. *Id.*, ¶¶205-6 (citing Ex.1013 [0022] (“the flange portion 42 extends outward radially from the upper end portion of the cylindrical portion 41”) and Fig.3). If Hirano is not deemed to disclose a seal having such an acceptance slot, it would have been obvious to a POSA to modify Hirano’s platform and seal to incorporate such features found in Benedetti.

Hirano explains that the seal has a structure adapted to receive the outer annular lip of the collar. *Id.*, ¶246 (citing Ex.1013, [0024, 31-32] “using a relatively soft thermoplastic resin such as a class 1 elastomer, the bushing 40 is molded in a second stage to the retainer 10” and Fig 3).



Ex.1006, ¶246 (citing Ex.1012, Fig.3 (annotated)).

i. Motivation to Combine

If Hirano is found to not explicitly disclose an acceptance “slot,” it would have been obvious to a POSA to modify the lip 52 of Hirano as discussed in connection with Claim 8, above, to provide a reduced thickness outer annular lip disposed circumferentially about the interior collar portion and to then provide a seal whose main body, like that collar, is annular and includes a circumferential acceptance slot that extends circumferentially along a main body inner diameter so as to receive the collar’s outer annular lip.

ii. Reasonable Expectation of Success

As of October 5, 2010, a POSA would have expected success in configuring a seal to have an acceptance slot to receive the outer annular lip of a collar. It would have been a routine matter to a POSA to adjust the dimensions of a seal to complement a lower platform having an annular lip for the reasons set forth in connection with Claim 8, above.

It would have been obvious as of October 5, 2010, to use a stepped configuration in Hirano’s fastener to attach a seal, as disclosed by Benedetti. A POSA would have been motivated to employ Hirano’s fastener in this manner to avoid the disadvantages of loose seals. A POSA would have had a reasonable expectation of success in doing so. *Id.*, ¶249.

9. Independent Claim 11

Hirano discloses every limitation recited by independent Claim 11, or alternatively, the invention recited in Claim 11 would have been obvious to a POSA at least as of October 5, 2010, based upon the disclosures in Hirano in light of the knowledge of POSAs at the time and/or the teachings of Iwasaki, Pue, and/or Benedetti. *Id.*, ¶250; section IX(D)(9).

i. Preamble: Retainer

If the preamble of Claim 11 is deemed a limitation, Hirano discloses a retainer assembly configured to join a surface element to a support structure so that the surface element assumes a contacting abutting relation with the support structure, the support structure having an acceptance opening. *Id.*, ¶251. If this disclosure is not explicit, it would have been obvious to a POSA to have employed Hirano's fastener to join surface elements to support structures. *Id.*; see sections IX(D)(1)(i), (2) and (9)(i), above.

1. Motivation to Combine

For the same reasons detailed in connection with Benedetti in Section IX(C)(9), at least as of the October 5, 2010 filing date of Hirano, a POSA would have been motivated to maintain a contacting abutting relation between surface elements joined to support structures using push-in type fasteners of the type

disclosed in Hirano, in light of his/her knowledge and/or the disclosures in Pue and/or Iwasaki. Ex.1006, ¶252.

2. Reasonable Expectation of Success

For the same reasons as detailed in connection with Benedetti in Section IX(C)(9), at least as of the October 5, 2010 filing date of Hirano, a POSA would have expected success employing Hirano's fastener to maintain a contacting abutting relation between surface elements joined to support structures. *Id.*, ¶253. It would have been a routine matter to a POSA to adjust the height of head portion 50 and extending portion 52 connected by center shaft portion 51, above panel (20), in conjunction with the design and dimensions of the surface element, to result in an arrangement whereby surface element and support structure are in contact. *Id.*; see *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (reasonable expectation shown where POSA could have combined elements by known methods with no change in functions, and combination yielded predictable results).

It would have been obvious at least as of October 5, 2010 to employ Hirano's fastener to attach surface elements, such as trim or molding, to support structures, such as automotive body panels, in a manner that maintains an abutting relationship between the trim and body panel, as disclosed by Iwasaki. A POSA would have been motivated to employ Hirano's fastener in this manner to avoid disadvantages

of gaps. A POSA would have had a reasonable expectation of success in doing so. Ex.1006, ¶254.

ii. Element 11[a]: Head/Collar/Neck

Hirano discloses the claimed features. *Id.*, ¶255; section IX(D)(9)(ii), above.

iii. Element 11[b]: Seal/Body/Foot

Hirano discloses the claimed features. *Id.*, ¶256; section IX(D)(9)(iii), above.

iv. Element 11[c]: Clip Portion

Hirano discloses the claimed features. *Id.*, ¶257; section IX(D)(9)(iv), above.

v. Element 11[d]: Flex/Flatten

Hirano discloses the claimed features. *Id.*, ¶258; section IX(D)(9)(v), above.

10. Claim 12

Hirano discloses the claimed features. *Id.*, ¶259; section IX(D)(10), above.

11. Claim 13

Hirano discloses the claimed features. *Id.*, ¶260; section IX(D)(11), above.

12. Claim 16

Hirano discloses the claimed features. Ex.1006, ¶261; section IX(D)(12), above.

13. Independent Claim 17

Hirano discloses every limitation recited by independent Claim 17. *Id.*, ¶262; section IX(D)(13).

i. Preamble: Retainer

If the preamble of Claim 17 is deemed a limitation, however, as discussed in connection with the preamble of Claims 11 and 1, above, Hirano discloses the claimed retainer assembly. Ex.1006, ¶263. If this disclosure is not explicit, it would have been obvious to a POSA to have employed Hirano's fastener to join surface elements to support structures. *Id.*; sections IX(D)(1)-(2), (9) and (13).

ii. Element 17[a]: Head/Collar/Neck

Hirano discloses the claimed features. Ex.1006, ¶264; sections IX(D)(9)(ii), (D)(13)(ii), (E)(9)(ii) and (E)(13)(ii), above.

iii. Element 17[b]: Seal/Body/Foot

Hirano discloses the claimed features. Ex.1006, ¶265; sections IX(D)(9)(iii), (D)(13)(iii), (E)(9)(iii) and (E)(13)(iii), above.

iv. Element 17[c]: Clip Portion

Hirano discloses the claimed features. Ex.1006, ¶266; sections IX(D)(9)(iv) and (13)(iv).

v. Element 17[d]: Stepped Collar

Hirano discloses the claimed features. Ex.1006, ¶267; sections IX(E)(7) and (13)(v), above.

vi. Element 17[e]: Slotted Seal

Hirano's discloses the claimed features. Ex.1006, ¶268; sections IX(E)(8) and (13)(vi), above.

14. Claim 18

Hirano discloses the claimed features. Ex.1006, ¶269; sections IX(E)(13)-(14), above.

15. Claim 19

Hirano discloses the claimed features. Ex.1006, ¶270; sections IX(E)(9), (13) and (14), above.

X. CONCLUSION

Petitioner respectfully requests *inter partes* review of Claims 1-6, 8-9, 11-13, and 16-19 be instituted and that those claims be cancelled.

Dated: October 19, 2023

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify that this petition complies with the type-volume limitations of 37 C.F.R. §42.24 because it contains 13,843 words (as determined by the Microsoft Word word-processing system used to prepare the petition), excluding the parts of the petition exempted by 37 C.F.R. §42.24.

Dated: October 19, 2023

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CERTIFICATE OF SERVICE

The undersigned hereby certifies pursuant to 37 CFR § 42.6 (e) and § 42.105 that on October 19, 2023, a true and correct copy of the foregoing “PETITION FOR *INTER PARTES* REVIEW” was served via UPS (Tracking No. 1Z0964W3NT94782303) on the Patent Owner at the following correspondence address of record as listed in the USPTO electronic filing system:

Quarles & Brady LLP (CHI)
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and was served via electronic mail upon counsel of record for the Patent Owner in the litigation pending for the U.S. District Court for the Northern District of Illinois entitled *Illinois Tool Works Inc. v. Termax LLC and LISI Automotive SA*, Case No. 1:20-cv-05416:

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