UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Macauto USA, Inc., Macauto Industrial Co., Ltd.,
Petitioner

v.

BOS GmbH & Co. KG
Patent Owner

IPR2018-00480
U.S. Patent No. 7,188,659

PATENT OWNER'S PRELIMINARY RESPONSE

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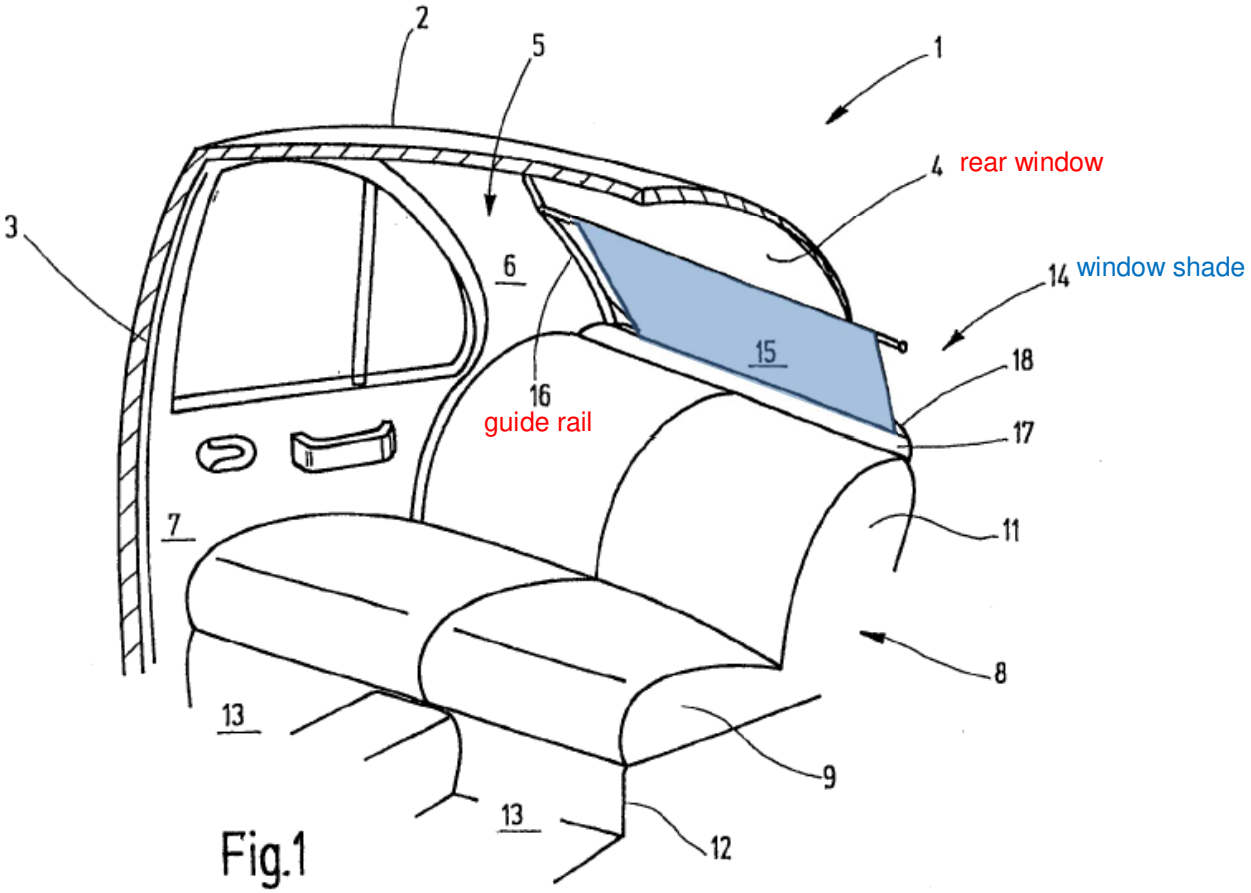
Ex. 2001	Excerpts of definitions from Merriam-Webster Collegiate Dictionary, 11th Edition, 2003
Ex. 2002	US Patent No, 5,417,467 to Viertel, et al.

Patent Owner BOS GmbH & Co. KG respectfully submits this Preliminary Response to the Petition seeking *inter partes* review of claims 22-32 and 37-42 of U.S. Patent No. 7,188,659 (the '659 Patent) filed by Petitioners Macauto USA, Inc. and Macauto Industrial Co., Ltd.

I. INTRODUCTION

Both of Petitioners' anticipation challenges (Grounds 1 and 5) fail to establish that the asserted prior art discloses each of the limitations of the challenged independent claims 22 and 37.

The '659 Patent is directed to a motor vehicle window shade having a molded guide rail arrangement. An exemplary motor vehicle window shade that uses such a guide rail arrangement is schematically shown below:



Independent claims 22 and 37 of the '659 Patent are directed to the embodiment of Figure 4 reproduced below, in which the guide rail arrangement is composed of two parts that together form a guide groove in the guide rail for the window shade. Figure 4 is a cross-sectional view through the guide rail.

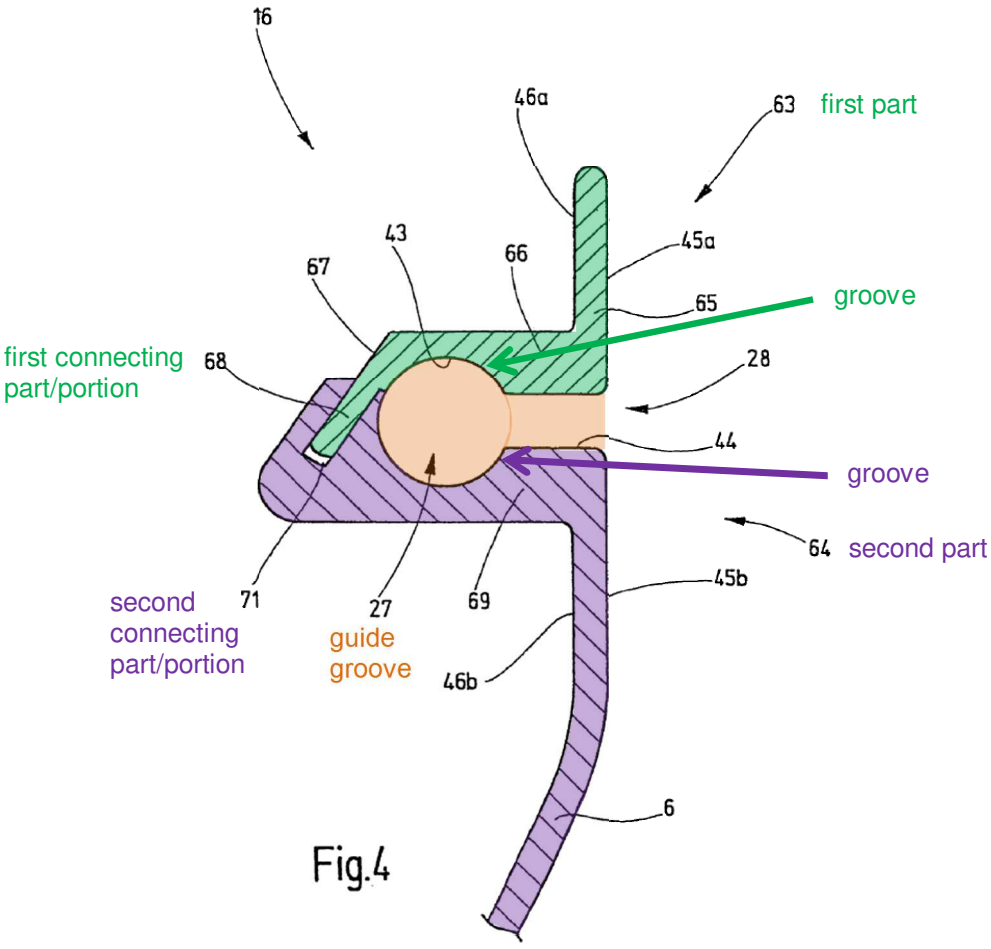


Fig.4

The claims require elongated molded first and second parts (63, 64) that each are formed with a groove free of undercuts, with connecting portions/parts (68, 71) of the first and second parts (63, 64) being interconnectable to position and retain, or to hold, the first and second molded parts (63, 64) relative to one another. When positioned and held together, the undercut-free grooves of both parts (63, 64) together define/form a guide groove (27). By forming the guide groove (27) in this manner, injection molding of the parts is simplified. The guide groove (27) receives and guides one end of a window shade guide (not shown in Figure 4).

Schlecht[1], the reference relied on by Petitioners for the first anticipation assertion (Ground 1), fails to disclose numerous limitations of the challenged independent claims. First, the purported first and second parts in *Schlecht* are *not molded parts* (contrary to Petitioners' assertion), but rather traditional sheet metal components that form the "C-pillar" (also referred to as the "C-column") of the motor vehicle body. Second, the two parts relied upon are merely arranged adjacent one another (only to be welded together later) and are not *interconnectable* via *connecting parts/portions* that *position and retain*, or *hold*, them in a way that can structurally maintain the two parts relative to one another. Third, one of the two parts relied upon by Petitioners is simply a flat surface with a lip and does not contain any sort of "groove."

Viertel, the reference relied on by Petitioners for the second anticipation assertion (Ground 5), is directed toward a significantly different side window shade that makes use of a pivot arm at one end of the sun shade, and anchors the other end of the sun shade such that there is only a bending or flexing movement of a spring bar rather than any sliding movement. *Viertel* also fails to disclose numerous limitations of the challenged independent claims. First, the two parts relied on by Petitioners do not contain a "groove" that performs a guiding function,

[1] *Schlecht* is an earlier development by the Patent Owner here.

and thus do not contain a "guide groove." As explained below, Petitioners misinterpret the reference, which fixes the spring bar so it cannot move at one end and uses a rail guide (*not* a guide groove) in a different, pivoting, component at the other end. Second, like *Schlecht*, the purported first and second parts merely abut one another other (only to be welded together later) and are not *interconnectable* via *connecting parts* that *position and retain*, or *hold*, them in a way that can structurally maintain the two parts relative to one another.

Regarding the dependent claims, Petitioners' obviousness challenges that add *Kyburz* to *Schlecht* and/or *Viertel* (Grounds 2, 6, 9, and 10) improperly attempt to combine references from non-analogous arts. *Kyburz* relates to a support for home window curtains, but vehicle window shades (which are the subject of *Schlecht* and *Viertel*) and their mounting/guide arrangements have very different design, fabrication, installation and operation considerations and constraints than home curtains. Both can provide shade, but otherwise one of skill in the automotive field would not look to *Kyburz's* home curtain teachings for guidance.[2]

[2] Grounds 3, 7, and 11, relating to other dependent claims, add *Cox* to this proposed combination. But that reference, which relates to binding sheets of paper into a book form, is also in a non-analogous art and may not be properly combined.

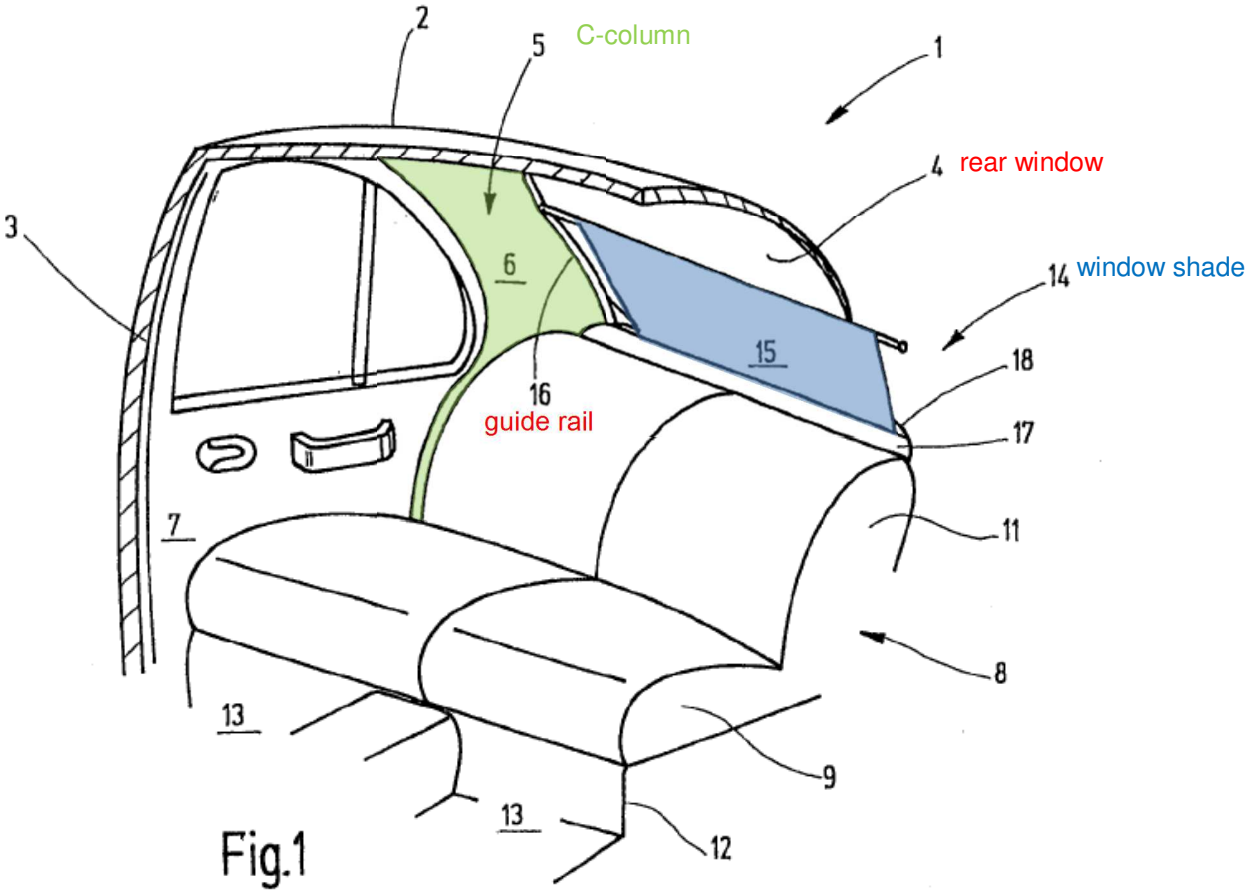
Additionally, even if properly considered, the proposed combinations would require modifying the principle of operation of the primary reference, undermining Petitioners' obviousness arguments.

In view of these deficiencies, as well as others explained in detail below, Petitioners have not demonstrated a reasonable likelihood of prevailing as to any of its asserted unpatentability grounds, and therefore institution should be denied.

II. THE '659 PATENT

A. Specification and Challenged Claims

The '659 Patent is directed to a motor vehicle window shade assembly with an improved guide rail arrangement. (Ex. 1001 at 1:46-49). An exemplary motor vehicle containing a window shade (14) is shown in Figure 1, reproduced and annotated below, with the strip-shaped shade portion shown as element (15) (in blue):



The rear window shade 14 is mounted on an inner side of rear window (4) and has a strip-shaped shade 15 that moves between lateral guide rails (16) (only one of which is shown above). (*Id.* at 3:50-56). The C-column (6) (in light green) of the body of the car is adjacent the rear window (4) and the door (7). (*Id.* at 3:38-44).

Figure 2, reproduced and annotated below, shows an enlarged detailed view of the window shade (14) and guide rail (16) arrangement, with the strip-shaped shade (15) again shown in blue:

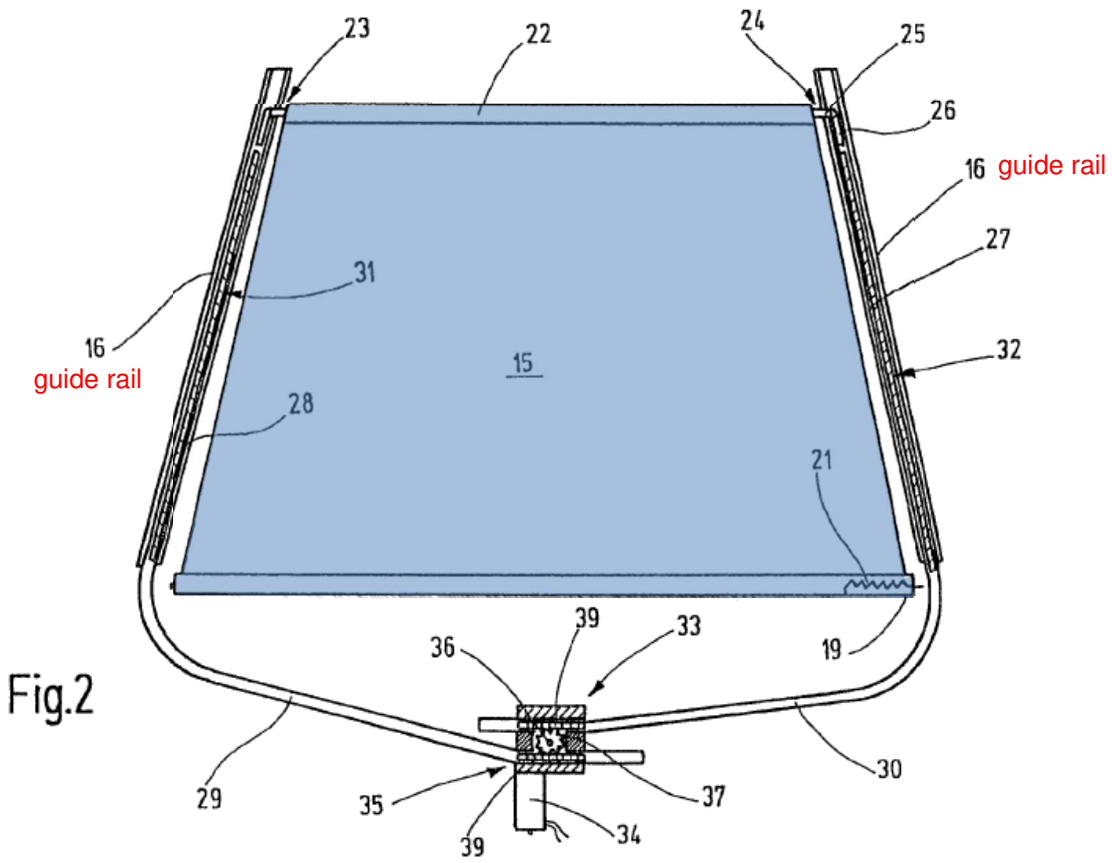
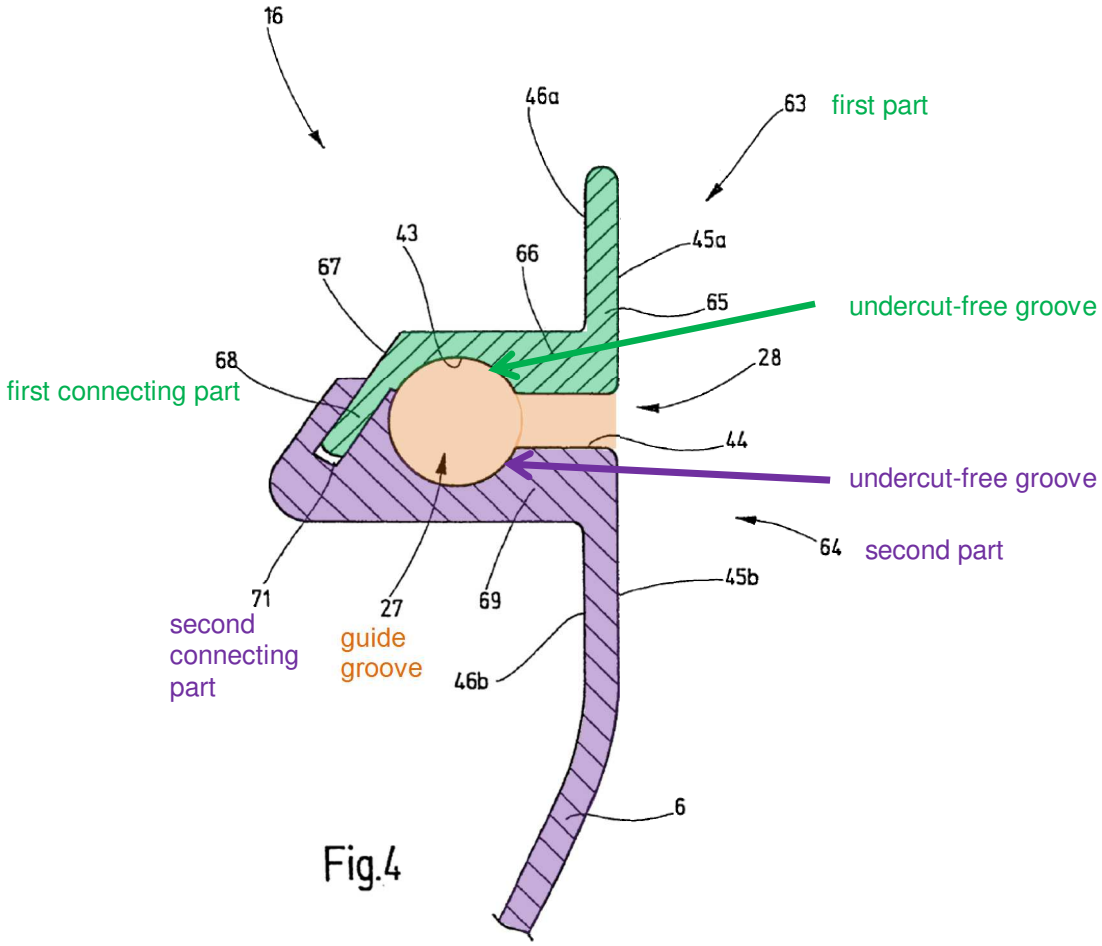


Fig.2

The window shade (14) has a winding shaft (19) rotatably supported underneath the rear window shelf (17) (shown in Fig. 1), with one edge of the strip-shaped shade (15) being fixed to the winding shaft (19). (*Id.* at 3:58-61). Guide pieces (23) and (24), which extend from tubular loop (22) of the strip-shaped shade (15), contain a neck part (25) that has a smaller diameter than that of an adjacent guide element (26). (*Id.* at 4:3-8). The guide element (26) has a short, cylindrical section shape so as to be guided within the guide rails (16) that are arranged adjacent to the opposite lateral edges of the rear window (4). (*Id.* at 4:8-10).

Figure 4, reproduced and annotated below, depicts in cross-section an embodiment of the guide rail (16) to which the challenged claims in this Petition are directed.[3]



[3] Independent claim 22 is directed to this embodiment of the guide rail (16), and independent claim 37 is directed to a window shade assembly (14) that incorporates this same embodiment of the guide rail (16).

The guide rail (16) consists of two parts: first part (63) (shown in green) and second part (64) (shown in purple)[4]. (*Id.* at 6:20-23). The first part (63) has a first connecting portion (68) and the second part (64) has a second connecting portion (71). (*Id.* at 9:29-30). This embodiment shows the first connecting portion (68) in the form of a narrow web structure that protrudes and extends into the second connecting portion (71) that is in the form of a groove structure. (*Id.* at 6:36-39, 6:51-55). As shown, the *connecting parts* (68) and (71) are *interconnectable* with each other and position and retain/hold the first and second parts relative to one another to create a guide groove (27) (shown in orange) from the undercut-free grooves of the first and second parts (63) and (64). (*Id.* at 9:30-34; 2:37-45).[5]

The two parts (63) and (64) are essentially free of undercuts, which makes it possible to injection mold the guide rail from plastic without the need to include a

[4] The designations of the first and second parts are arbitrary and could be reversed.

[5] Claim 22 interchangeably refers to the structures (68, 71), *i.e.*, the webs/grooves of the embodiment, as either "portions" of the first and second parts or as "parts" of the first and second parts. In either case, the connecting portions/parts are structures that perform the interconnection that positions and retains the parts relative to one another.

drawable core structure within the mold, thereby significantly simplifying the molding process and rendering it more economical to manufacture. (*Id.* at 7:20-28; 7:63-8:2).

Claim 22, the first of two challenged independent claims, is directed to a guide rail arrangement reflecting the improvements provided by the patented invention:

> 22. A guide rail arrangement (**16**) for window shades (**14**) in motor vehicles comprising
>
> an first part (**63**) in the form of an elongated molded part, said first part (**63**) including a first connecting portion (**68**) and an elongated section formed with a groove that is essentially free of undercuts and extends continuously over at least a part of the length of the guide rail arrangement,
>
> a second part (**64**) in the form of an elongated molded part, said second part (**64**) having a second connecting portion (**71**) and an elongated section formed with a groove that is essentially free of undercuts and extends continuously over at least a part of the length of said guide rail arrangement (**16**); and
>
> said connecting parts (**68**, **71**) of said first and second parts (**63**, **64**) being interconnectable to position and retain the first and second parts (**63**, **64**) relative to one another with said grooves

> of said first and second parts (**63**, **64**) defining an undercut guide groove (**27**).

Claim 37, the second challenged independent claim, is directed to a window shade assembly operable with at least one guide rail containing most of the same limitations as claim 22:

> 37. A window shade (**14**) for motor vehicles comprising a rotatably supported window shade shaft (**19**), a strip-shaped shade (**15**) having one edge fixed to said window shade shaft (**19**), a guide (**23**, **24**) connected to an edge (**22**) of the window shade strip (**15**) distant from said window shade shaft (**19**), at least one guide rail (**16**) for receiving and guiding one end of said window shade guide (**23**, **24**) for relative movement, said guide rail (**16**) including
>
> a first part (**63**) in the form of an elongated molded part having a first connecting portion (**68**) and an elongated section formed with a groove that is essentially free of undercuts and extends continuously over at least a part of the length of said guide rail arrangement,
>
> a second part (**64**) in the form of an elongated molded part that includes a second connecting portion (**71**) and a elongated section formed with a groove that is essentially free of undercuts and extends continuously over at least a part of the length of the guide rail arrangement, and

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

Claims 23-32 (which depend from claim 22) and claims 38-42 (which depend from claim 37) each add further limitations relating to the guide rail arrangement.

B. Prosecution History

The Petition argues that the '659 Patent should have a filing date of September 2, 2004 (the U.S. application filing date) and that the patent is not entitled to receive the priority date of the previously filed foreign application because Patent Owner did not request priority within twelve months from when the foreign application was filed. (Petition at 4-6). Patent Owner does not contest such assertion. This priority date issue, however, is irrelevant to all of the invalidity challenges raised in the Petition.

III. CLAIM CONSTRUCTION

In an IPR proceeding, claim terms are to be given the "broadest reasonable interpretation" in light of the specification as it would be interpreted by one of ordinary skill in the art. (37 C.F.R. § 42.100(b)).

Petitioners suggest that a person of ordinary skill in the art ("POSITA") would have at least a Bachelor of Science degree in mechanical engineering and about five years' experience in mechanical design, including design of sliding and aligning mechanisms. (Petition at 9).[6] Patent Owner disagrees because this definition fails to include any relevant vehicle design experience, such as vehicle body integration of vehicle hardware components and trim designs. Window shades of the type to which the challenged claims are directed must be integrated into a vehicle, and there are numerous vehicle-specific design and manufacturing considerations that must be considered, such as vibration, temperature variation, spacing within vehicle components, body curvature requirements, impact on crash resistance, etc. Patent Owner submits that a POSITA therefore would have at least a Bachelor of Science degree in mechanical engineering and about five years' experience in vehicle integration of hardware components and trim designs.

There are several terms used in the challenged claims of the '659 Patent, identified below, that should be construed by the Board.

A. "guide groove"

Independent claims 22 and 37 recite a "guide groove" as follows:

[6] Citations to Petition throughout are to the "Revised Petition" filed by Petitioner (Paper 4).

- "said grooves of said first and second parts (63, 64) defining an undercut ***guide groove*** (27)." (claim 22);

- "hold the longitudinal sections of the first and second parts (63, 64) together such that the grooves therein forming a ***guide groove*** (27) for said window shade guide (23, 24)." (claim 37).

A "guide groove" would be understood by a POSITA to be a "groove" that has the particular function of "guiding." The plain and ordinary meaning for the functional term "guide" as used in the context of the claims means to direct the motion of something. *See* (Ex. 2001, at 3, Merriam-Webster Collegiate Dictionary, 11th Edition, 2003) ("guide … a device for steadying or directing the motion of something"). Thus, when used together, a "guide groove" means "a groove that directs or steadies the motion of something."

This construction is also supported by the '659 Patent specification. For example, the "guide groove" is shown as element 27, highlighted and shown in orange in annotated Figure 4 below. It includes the circular section 27 and the slot 28. (6:16-19):

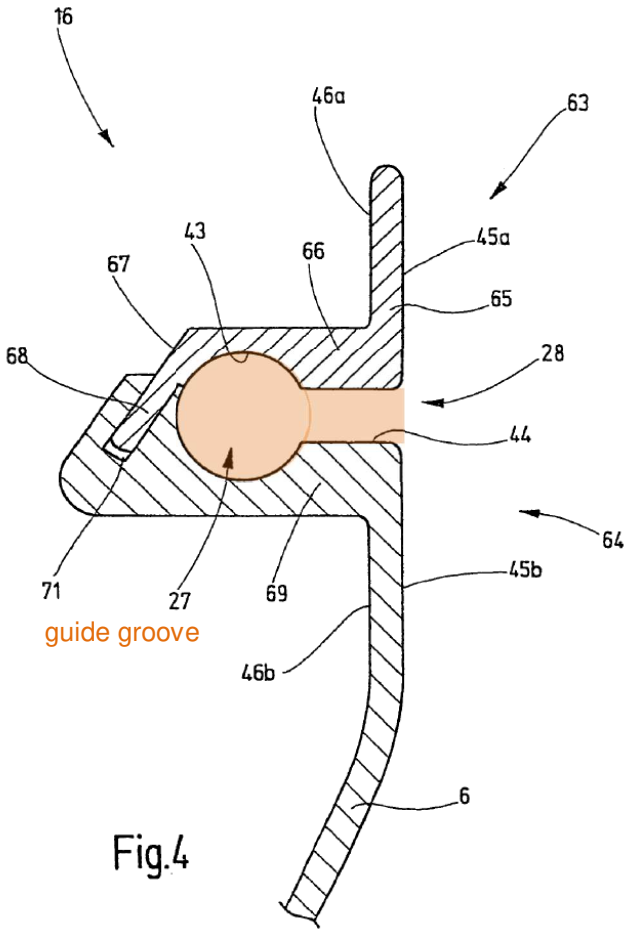


Fig.4

The guide pieces 23, 24 have a short cylindrical section guide element whose motion is directed by the circular section 27 in which it is guided (4:5-10). A POSITA would understand that the '659 Patent specification describes that the "guide groove" *directs the movement of* the guide pieces 23, 24 of the window shade 15.

Thus, a "guide groove" as used in the '659 Patent, means "a groove that directs or steadies the motion of something." Petitioners have not proposed any construction for this term.

B. "said connecting parts/portions (68, 71) . . . being interconnectable"[7]

Independent claims 22 and 37 both refer to connecting parts/portions (68, 71) of the first and second parts being "interconnectable" in the following instances:

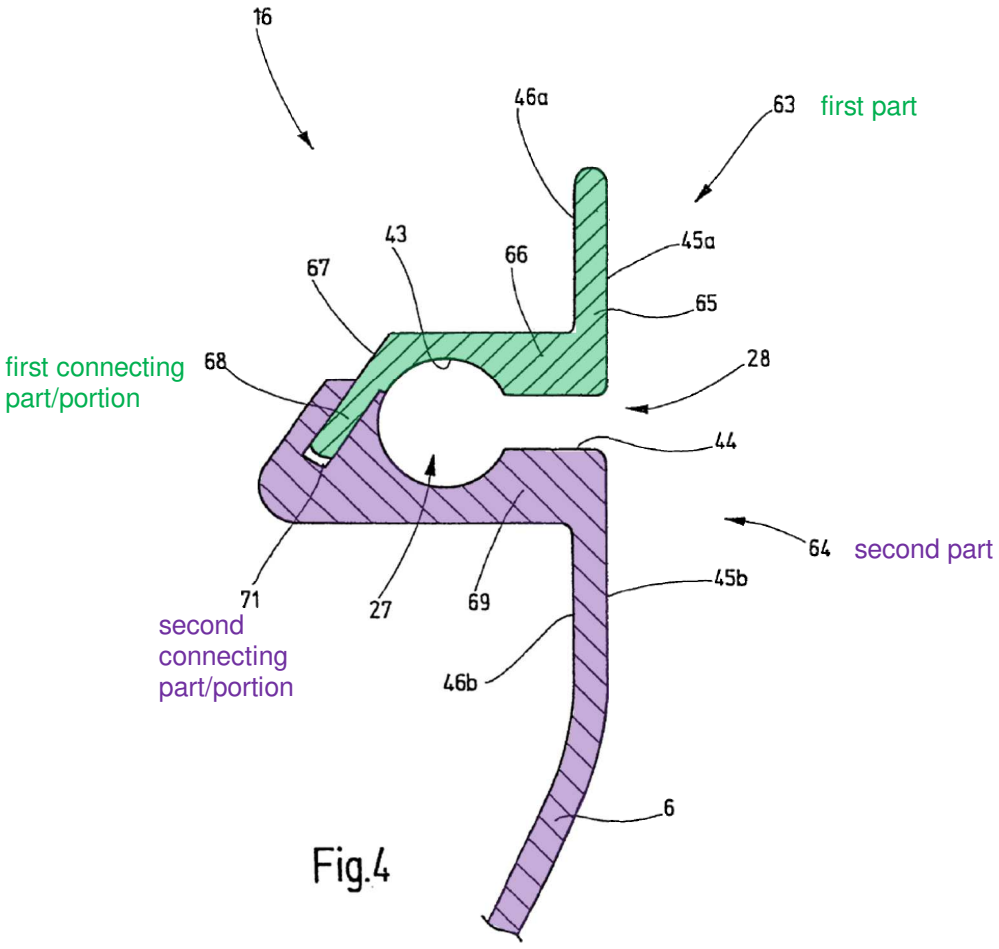
- "***said connecting parts*** (68, 71) of said first and second parts (63, 64) ***being interconnectable*** to position and retain the first and second parts (63, 64) relative to one another…." (claim 22);
- "***said connecting portions*** (68, 71) of said first and second parts (63, 64) ***being interconnectable*** to hold the longitudinal sections of the first and second parts (63, 64) together" (claim 37).

As used in context within these claims, the connecting parts/portions of the first and second parts are mechanical structures that are interconnectable to position and retain, or hold, the first and second parts together. A POSITA would understand that this means that the first and second parts must be able to connect reciprocally

[7] Both claims 22 and 37 interchangeably use the terms "parts" or "portions," which must be "interconnectable." In context, both terms would be understood by a POSITA as mechanical structures that mechanically interconnect, rather than simply spatial locations or areas of a component.

in a way that can structurally maintain the first and second parts together. Such an interpretation is consistent with the plain and ordinary meaning of "interconnectable." *See* (Ex. 2001, at 5, Merriam-Webster Collegiate Dictionary, 11th Edition, 2003) ("interconnected: 1. mutually joined or related … 2. having internal connections between the parts or elements.")

This construction is also supported by the '659 Patent specification. For example, connecting parts/portions (68, 71), which are recited in the claims as "interconnectable," are shown in Figure 4 below:



As is evident from the figure, these parts connect reciprocally, in a way that would structurally maintain the first and second connecting parts with respect to each other.

Thus, "said connecting [parts/portions] (68, 71) of said first and second parts (63, 64) being interconnectable," as used in the '659 Patent, means "mechanical structures that must be able to connect reciprocally in a way that can structurally maintain the first and second parts together." Petitioners have not proposed any construction for this term.

C. "integrally connected"

Dependent claim 30 refers to "integrally connected" in the following context:

- "The guide rail arrangement of claim 22 in which said first and second parts (63, 64) are ***integrally connected*** together."

Petitioners argue that "integrally connected" should be construed to ignore the term "integrally." Yet Petitioners fail to justify departing from the long-accepted axiom that all of the words in a claim ordinarily should be given meaning. *See Merck & Co. v. Teva Pharm. USA, Inc.,* 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). Nevertheless, Patent Owner respectfully submits that

this term need not be construed as there is no issue raised in the Petition that will be affected by the construction of the term. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

D. "integral component of a section of an inside lining of a motor vehicle"

Dependent claims 32 and 42 refer to "integral component of an inside lining of a motor vehicle" in the following context:

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

"Integral" means "formed as a unit with another part." (Ex. 2001, at 4, Merriam-Webster Collegiate Dictionary, 11th Edition, 2003). A POSITA would understand the phrase "one of said first and second parts *forms an integral component of a section of an inside lining of a motor vehicle*" to mean that one of the parts must form a unit with the inside lining of the motor vehicle. Such a construction would not include, for example, an arrangement where the guide rail is a separate, stand-alone component that is affixed somehow to a pre-existing

inside lining of the motor vehicle. Petitioners have not proposed any construction for this term.

IV. OVERVIEW OF THE ASSERTED PRIOR ART

A. *Schlecht*

The primary reference on which Petitioners rely for Grounds 1-4 is U.S. Published Patent Application No. 2002/0074824, titled "Windup Shade for Simplified Assembly in a Window," by Schlecht, et al. ("*Schlecht*") (Ex. 1005).

Schlecht, which is an earlier development of the Patent Owner, discloses a windup window shade for use in a motor vehicle. (Ex. 1005 at ¶2). *Schlecht* makes use of a guide rail that includes a flange for fastening the guide rail to appropriate parts of the vehicle body. (*Id.* at ¶44). One guide rail is arranged on each side in order to guide the window shade in front of the window. (*Id.* at ¶3). *Schlecht* discloses a guide rail 13 that has a profile represented in Figure 3, reproduced below:

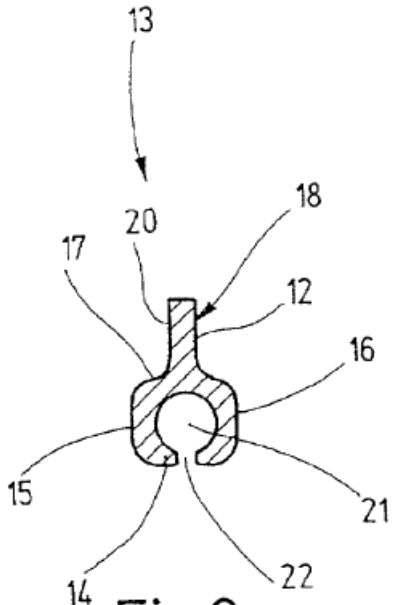


Fig.3

It contains a guide groove 21, which is circular in cross section and opens via a slit 22 toward the front 14. (*Id.* at ¶45). *Schlecht* discloses various embodiments for how to connect the guide rail to the vehicle body. (*Id.* at ¶37).

The Petition primarily relies on a different guide rail embodiment shown in Figure 13, reproduced below:

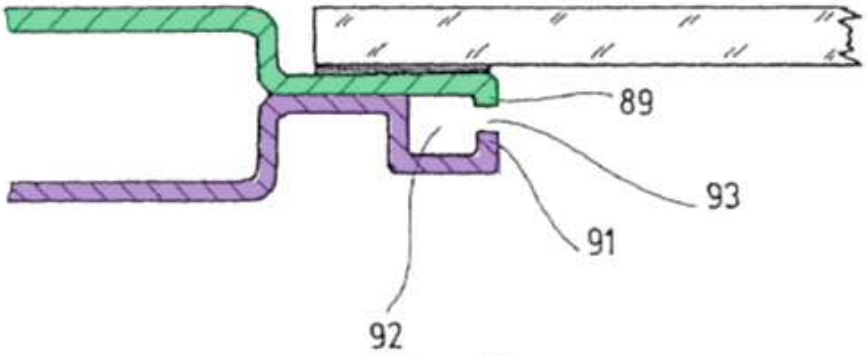


Fig.13

In that embodiment, the section of the guide rail shown is made from the vehicle body itself, rather than as a separate component as in Fig. 3 shown above. (*Id.* at ¶105). In other words, the guide rail relied upon by the Petitioners is actually a part of the C-column of the vehicle body, which is formed from shaped sheet metal parts 89 (shown in green) and 91 (shown in purple). (*Id.* at ¶¶92, 105, Figs. 9, 13). There is no plastic, or other molded material, used in this embodiment. A groove 92 is created when assembled (one does not exist in the shaped sheet metal part 89 prior to assembly), which can be used to guide the window shade. (*Id.* at ¶92).

B. *Viertel*

The primary reference on which Petitioners rely for Grounds 5-12 is German Patent DE 4234741, titled "Sun Shades to Vehicles," by *Viertel* ("*Viertel*"). The

German publication was filed as Ex. 1006. The English translation was served as Ex. 1007.[8]

Viertel relates to a sun shade 6 for a side window 3 of a motor vehicle, shown below. (Ex. 1007 at 1:5-6)[9]:

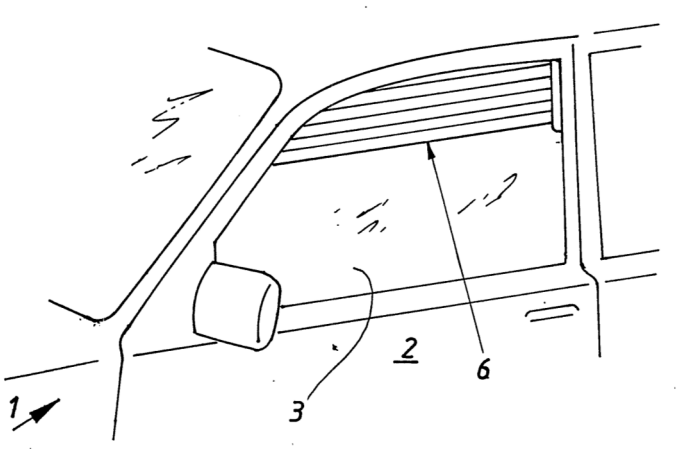
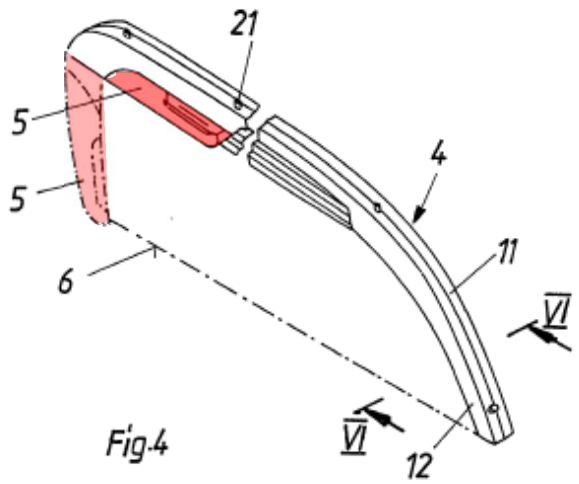


Fig.1

[8] Petitioners served a copy of the English translation on the Patent Owner, but did not file a copy as required by 37 C.F.R. § 42.63(b). Additionally, the translator certification included with the service copy of Ex. 1007 does not comply with 37 C.F.R. § 1.68 because it does not include the required warning regarding willful false statements and possible punishment.

[9] The citations in this Preliminary Response to Ex. 1007 are to the served version of the document, which is in the English language.

(Ex. 1006, at 6).[10] The side window shade is arranged adjacent the "B-column" (or "B-pillar") of the vehicle.[11] (Ex. 1007 at 2:1). Figure 4, reproduced below, illustrates an assembled sun shade in the raised position:

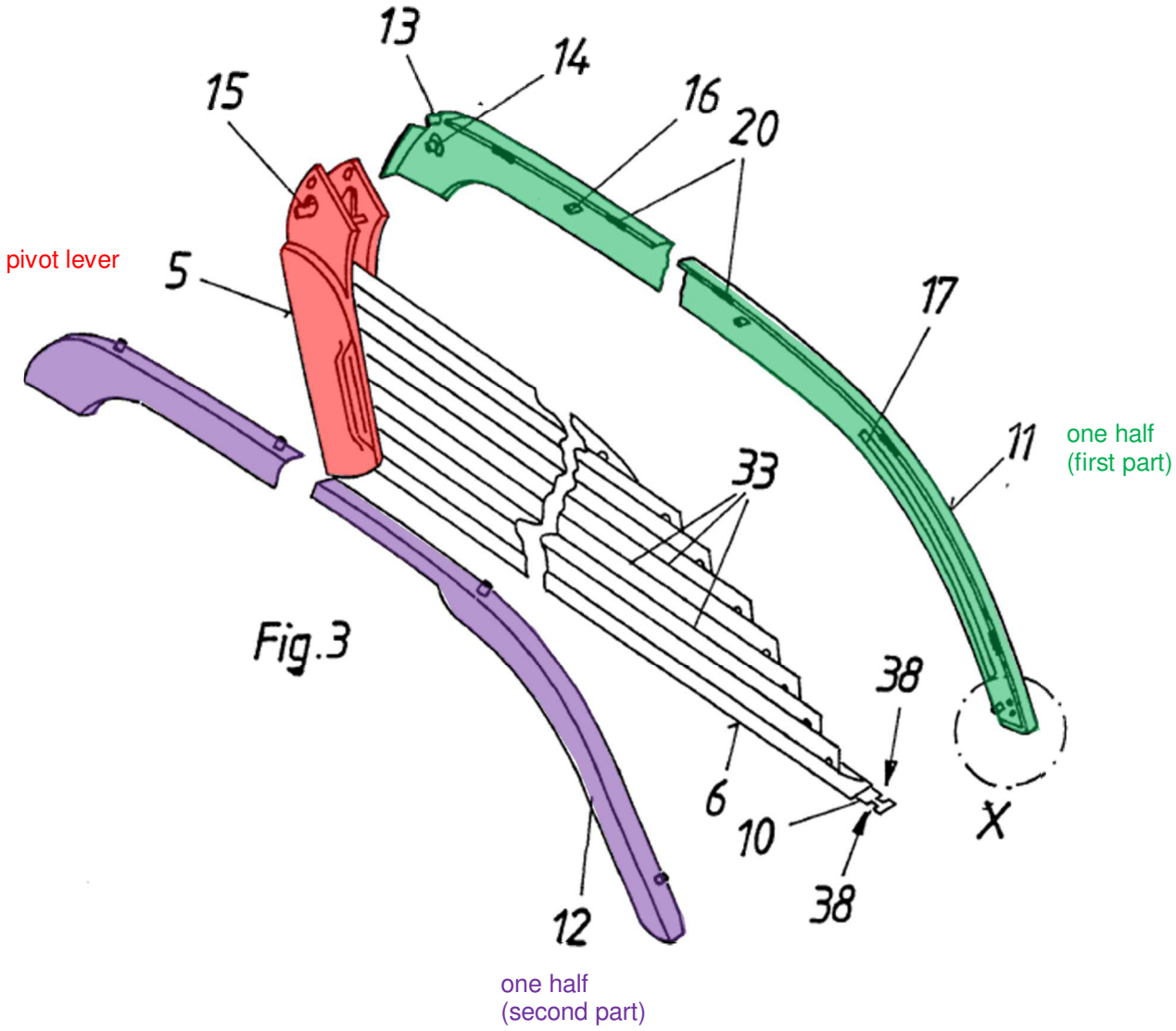


(Ex. 1007 at 3:5-6). It contains a profile bar 4 and a pivot lever 5 (shown in red) that is attached at one end to a foldable (not a rotatable) window shade body 6 and pivots inward to raise the shade. (*Id.*at 3:22-23).

[10] None of Petitioners' exhibits are labeled or numbered correctly as required by 37 C.F.R. § 42.63(d). Patent Owner is citing to the electronic page number where there is no other apparent pagination on the documents themselves.

[11] The B-pillar is part of the car's body located between the rear and front door.

The profile bar 4 is made from two halves 11 (the alleged first part, shown in green) and 12 (the alleged second part, shown in purple), illustrated in an exploded view of the sun shade presented in Figure 3, reproduced below.



A support spring bar 10 is located at a lower bottom portion of the pleated or folded sun shade body 33.

The area "X" of Figure 3 above is shown in detail in in Figure 5, reproduced below, where a pin 18 (in blue) and a bar 19 (in gray) holds and *secures in place the end portion* of the spring rod 10 at the bottom of the sun shade body 33 (the right-side of the spring rod 10 in Figure 3 above). The spring bar 10 is *fixed against a linear movement*. (Ex. 1007 at 3:31; 1:13-14). Because it is fixed, the spring bar 10 must bend to conform with the shape of the profile bar 4 when the shade is closed (retracted) (Ex. 1007 at 6:4-8).

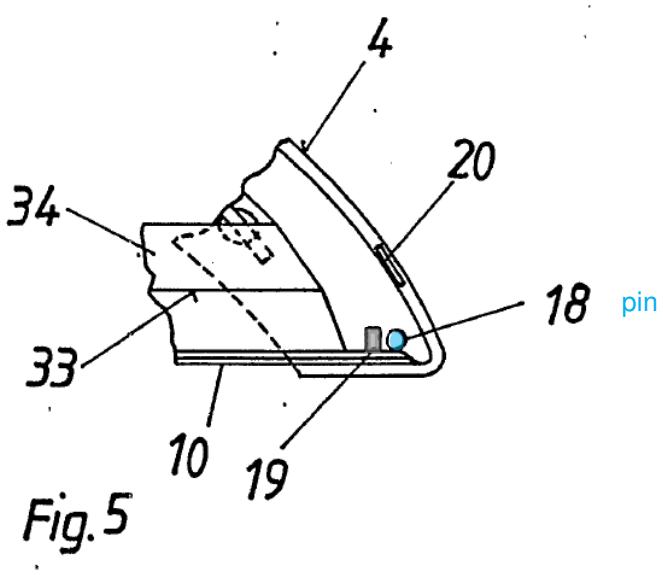


Fig. 5

The right-side portion of the spring bar 10 at the bottom of the folded window shade therefore is not actually guided within the profile bar 4 in between halves 11 and 12, but instead the folds 33 of the shade portion 34 itself collapse or expand

"like a spreadable fan" based upon the collapsing movement of the pivot lever 5 located on the opposite side. (Ex. 1007 at 1:25-26; 5:26-27).

Figure 6 below is an unmarked cross section of the profile bar 4 showing the end of the spring bar 10. The elements shown engaging with the end of the spring bar would appear to be the bars 19 marked in Figure 5 that secure the spring bar against any axial movement. (*Id*. at 3:31 – 4:1)

Fig. 6

Figures 11 and 12 illustrate the open and collapsed position of the pivot lever 5 at the side opposite the fixed mounting of the spring bar 10 to the profile bar 4:

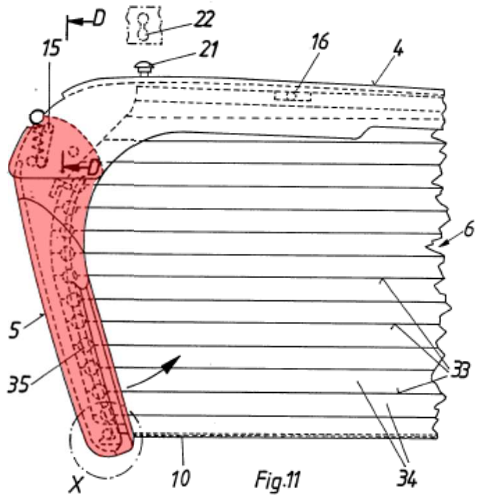


Fig.11

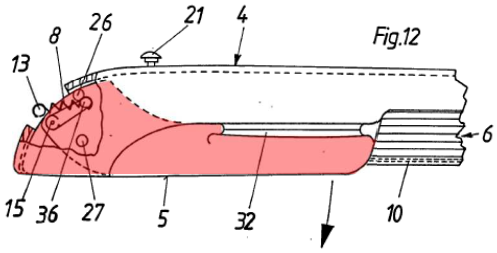


Fig.12

(Ex. 1006 at 10). Figure 9 shows a cross section of the pivot lever 5:

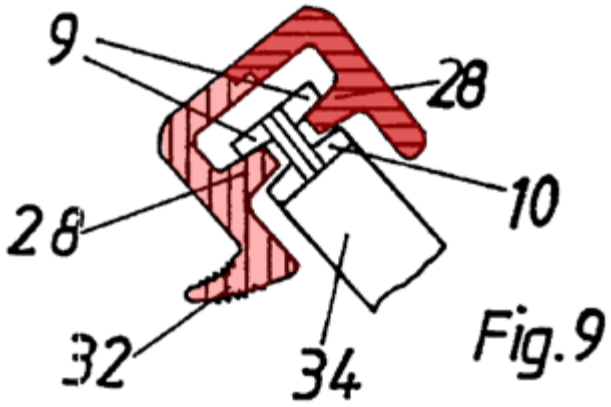


Fig.9

The halves for the pivot lever 5 (shown in different shades of red in Figure 9) and the profile bar 4 (shown in green and purple in Figure 6 above) abut each other and are bonded by ultrasonic welding. (Ex. 1007 at 4:1-3; 4:16-17). The welding occurs at weld zones 20 distributed about the abutting surfaces as shown below in Figures 3 and 5 (highlighted in yellow):

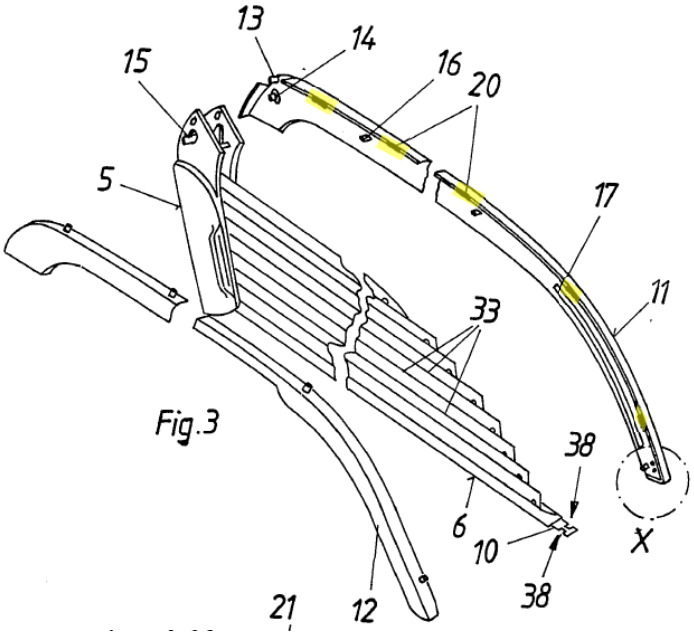


Fig.3

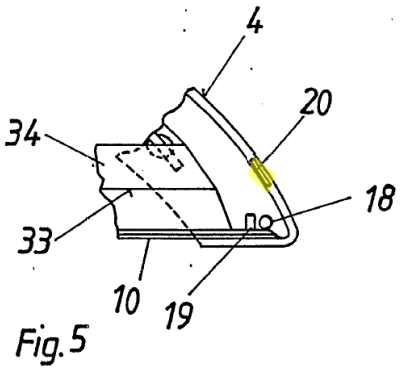


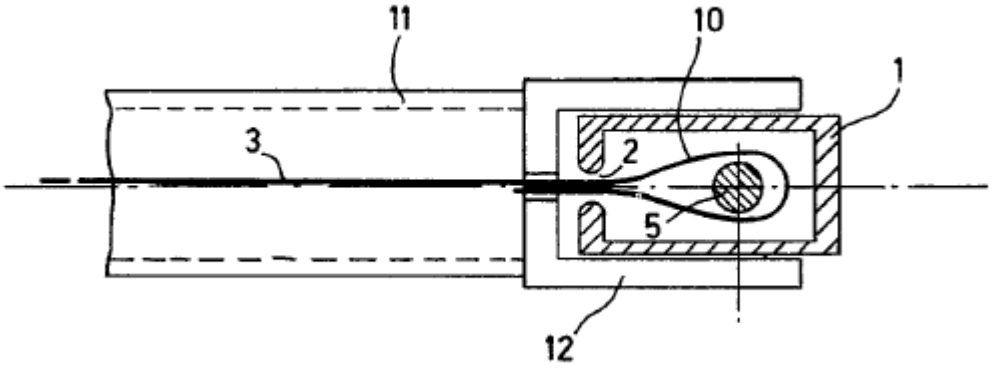
Fig.5

C. *Kyburz*

The secondary reference on which Petitioners rely for Grounds 2-3, 6-7, and 10-11 is Swiss Patent CH455231, titled "Curtain Support," by *Kyburz*. The German publication was filed as Ex. 1008. The English translation was served as Ex. 1009.[12]

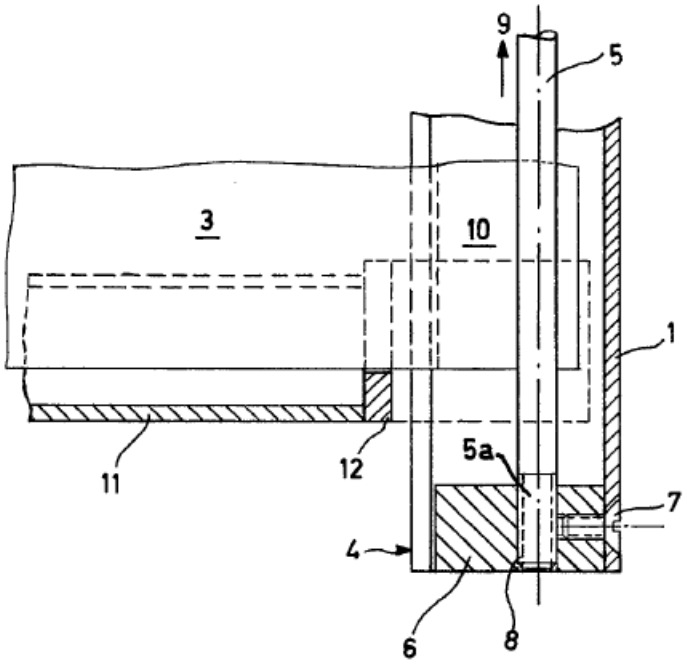
[12] As with *Viertel*, Petitioners served the English translation on the Patent Owner, but did not file a copy as required by 37 C.F.R. § 42.63(b). Additionally, the translator certification included with the service copy of Ex. 1009 does not comply with 37 C.F.R. § 1.68.

Kyburz relates to a support for curtains that can be used to prevent light from entering through a window or door opening into a room, such as in a home. (Ex. 1009 at 1:3-9; 3:18-20). With reference to Figure 1, reproduced below,[13] *Kyburz* discloses that support profile 1 is attached on both sides of a window or door opening so that slots 2 are oriented to the opening. (*Id.* at 3:18-20).

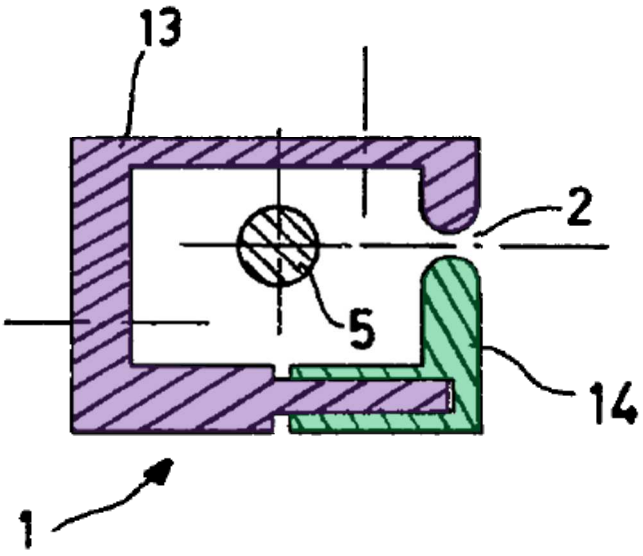


(Ex. 1008 at 3). A support rod 5 is arranged in the interior of the support profile 1. (Ex. 1009 at 2:21-23). A curtain 3 is folded at its lateral edges so that a small loop 10 can slide on the support rod 5. (Ex. 1009 at 3:5-7). During the assembly of the curtain, the loops 10 are pulled into the support profile 1 from above onto the support rod 5 (*Id.*at 3:1-3, 3:20-22). The support rod is clamped at a lower end 5a so as not to move in the support profile (*Id.* at 2:26-30), shown in Figure 2 below.

[13] The drawing sheet does not include the Figure numbers.



Pertinent to the Petition, Figure 3, reproduced below, shows that profile 1 is a housing that can be made from base element 13 (in purple) and mating element 14 (in green) to facilitate sliding the curtain 3 onto the support rod 5:



(*Id.* at 4:15-16). This mating assembly is provided to allow the base element 13 to be first mounted and then the support rod 5 to be inserted and the curtain pulled over the support rod 5. After that, the clamping piece 14 is used to close the profile 1. (Ex. 1009 at 4:15-18). Elements 13 and 14 are essentially decorative housing features that surround the support rod 5 to hide the curtain loop 10 (shown in Figure 1). (Ex. 1009 at 4:15-22). It is the support rod 5 in *Kyburz* that *guides* the curtain, not the housing.

In contrast to the challenged claims of the '659 Patent, *Kyburz* does not include a guide element that travels within a guide groove; rather, the support rod 5 is stationary within the profile 1. Likewise, there is no suggestion in *Kyburz* that design considerations relevant to the design of vehicle window shades (including unique curvatures/bend axes, tight space constraints within vehicle bodies, vibration characteristics, temperature changes, and crash resistance) would be relevant to the design of *Kyburz's* household curtains.

V. THE PETITION FAILS TO ESTABLISH A REASONABLE LIKELIHOOD OF PREVAILING ON ANY OF THE ASSERTED GROUNDS

A. Ground 1: Anticipation of claims 22, 30-32, 37, and 42 by *Schlecht*

Ground 1 asserts anticipation under 35 U.S.C. §102(b). That requires a showing that every limitation of the challenged claims is disclosed by *Schlecht*.

See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd, 851 F.3d 1270, 1273 (Fed. Cir. 2017) ("[A] claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference."); *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002) (anticipation requires that a single reference "describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art"). *Schlecht* does not do so.

As demonstrated below, *Schlecht* fails to disclose numerous limitations of the challenged claims—each of which provide a separate, independent reason why *inter partes* review should not be instituted. Thus, Petitioners have not sustained their burden of proving the invalidity of the challenged claims based on this reference. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) ("In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.").

1. Petitioners misconstrue *Schlecht*, which does not disclose "an elongated molded part"

Independent claims 22 and 37 both recite a "first part" in the form of "an elongated *molded* part" and a "second part" in the form of "an elongated *molded* part." Petitioners assert that *Schlecht* discloses injection molded parts that satisfy the claimed first part and second part, (Petition at 15-16), but that assertion is

factually wrong: the parts in *Schlecht* on which Petitioners rely are portions of the so-called C-pillars 9 (also known as "C-columns") of the car's body, which C-pillars are ***shaped (stamped) sheet metal*** parts.[14] *Schlecht* therefore fails to disclose "elongated *molded* parts."

Petitioners assert that Figure 13, reproduced below, demonstrates the molded first and second parts required by the claims. (Petition at 15-17). Petitioners assert that element 89 (shown in green) below, represents the first part, and that element 91 (shown in purple) represents the second part. (*Id.*). Petitioners then cite to a statement in paragraph 26 of *Schlecht* that refers to aspects of a guide rail that may be formed by injection molding of plastic material. (*Id.*). But that statement does not refer to parts 89 or 91.

[14] Pillars are the vertical or near vertical supports of the car's window area. A four door sedan will have three pillars, commonly known as the A, B, C pillars. The pillars form part of the vehicle's structural shell and provide structural support for the vehicle.

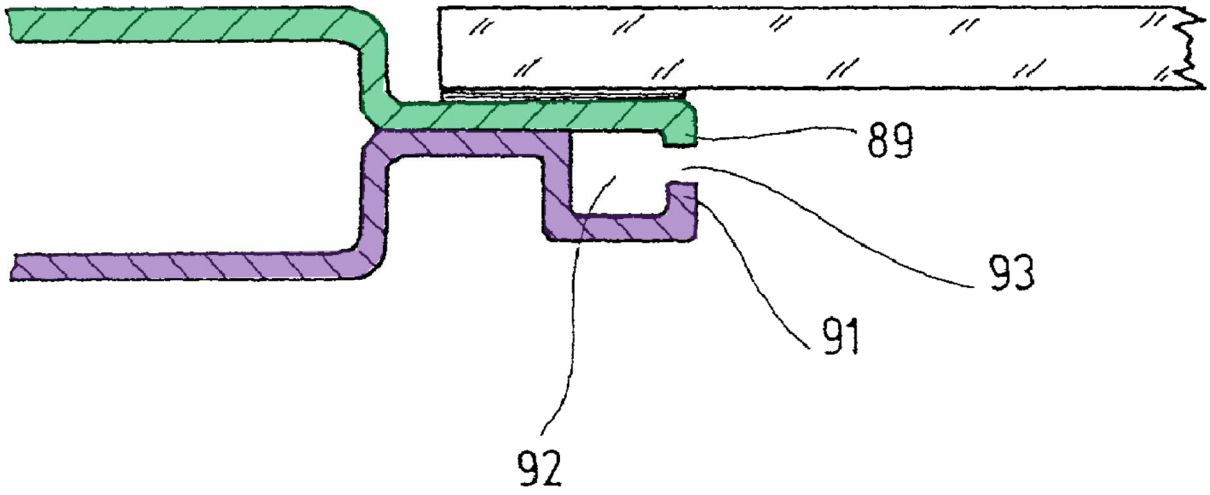


Fig.13

Rather, *Schlecht* explains how its guide rail is connected to the body of the passenger car 1 with respect to Figure 1, reproduced below:

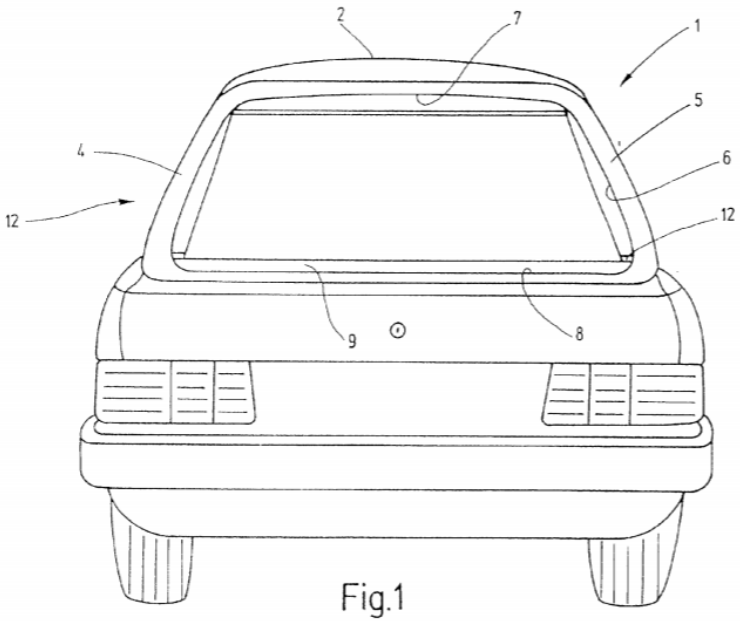
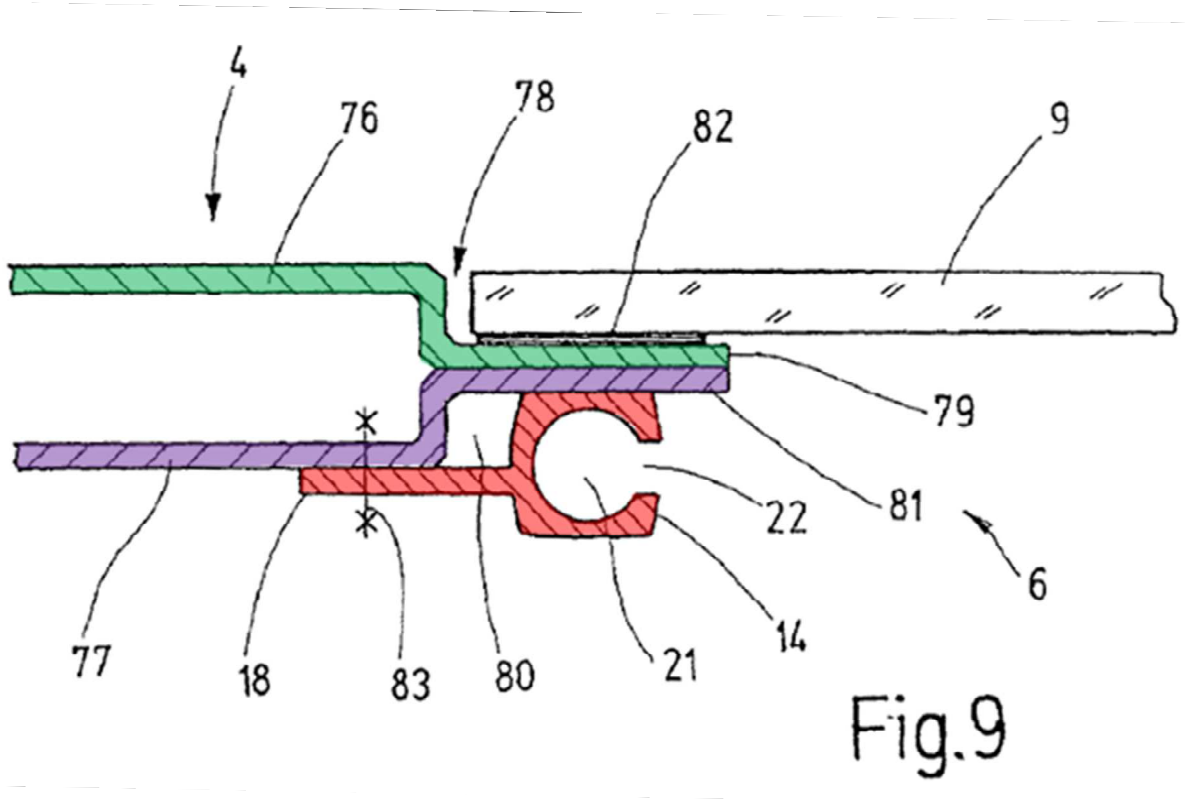


Fig.1

The rear windup window shade has two guide rails, which are fastened next to the lateral edges of the rear openings 6 on the window's C-columns (C-pillars) 4 and 5. (Ex. 1005 at ¶42).

Schlecht explains that Figure 9, reproduced with color annotations below, represents a horizontal cross section through the car's C-column 4. (*Id.* at ¶92). The C-column 4 is composed of two ***shaped sheet metal elements***, an outer ***shaped sheet metal*** element 76 (in green) and an inner ***shaped sheet metal*** element 77 (in purple). (*Id.*).



Each of the inner and outer sheet metal elements of the C-column have a sheet metal flange 79, 81. (*Id.* at ¶92).

As *Schlecht* explains, Figures 9 to 13 each show various connections between a flanged guide rail (shown in red above) and the vehicle body, *i.e.* the sheet metal parts 76/79 and 77/81. (Ex. 1005 at ¶37). As can be seen from the depictions in the figures themselves, the embodiments shown in Figures 10-13 are variations of the embodiment of Figure 9. Accordingly, the description for the sheet metal elements in Figure 9 applies equally to the corresponding elements in Figures 10-13.[15] Therefore, one of skill in the art understands that the equivalent elements of Figure 13 (those marked as 89 and 91 relied upon by the Petitioners as the alleged first and second parts) would be made from sheet metal as well.[16] Consistent with this interpretation, *Schlecht* describes that Figure 13 shows an

[15] Petitioners share this understanding. *See, e.g.,* Petition at 17 ("Where *Schlecht* teaches spot-welding flanges 79 and 81 in Fig. 12, ***the identical connection of members is illustrated to the first and second part in Fig. 13***.") (emphasis added).

[16] The text of paragraph 105 recites the C-column "flange 79" of the outer sheet metal element 76 and the "leg 86" of the inner sheet metal element flange 81 (see paragraphs 101-102 referring to leg 86).

embodiment where the section of the guide rail shown is the "vehicle body itself." (Ex. 1005 at ¶105). Indeed, a POSITA would understand that these components are constructed out of the identified shaped sheet metal.

Petitioners rely solely, and mistakenly, on the following statement from Paragraph 26 of *Schlecht* to support their assertion that elements 89 and 91 are formed by injection molding: "Finally, it is possible to form the guide rail, or at least a portion of the guide rail, directly integrally in the interior liner, so that the guide rail is composed of a short section, which is part of the pre-assembled unit, and a longer section, which has been provided by injection molding in the plastic material of the lateral element." (Ex. 1005 at ¶26; Petition at 15-17). But this statement in Paragraph 26 cannot refer to the elements 89 and 91 relied on by Petitioners—those parts form the vehicle's sheet metal body as discussed above. Rather, the statement may refer to the one-piece guide rail 13 shown in figure 3 as being attached to the sheet metal C-column flanges shown in figure 9 - 12, or as being formed as part of the interior liner as shown in Figure 8. A guide rail with the potentially plastic material is shown in red in annotated Figure 9, below:[17]

[17] Figures 10-12 also show this added on piece.

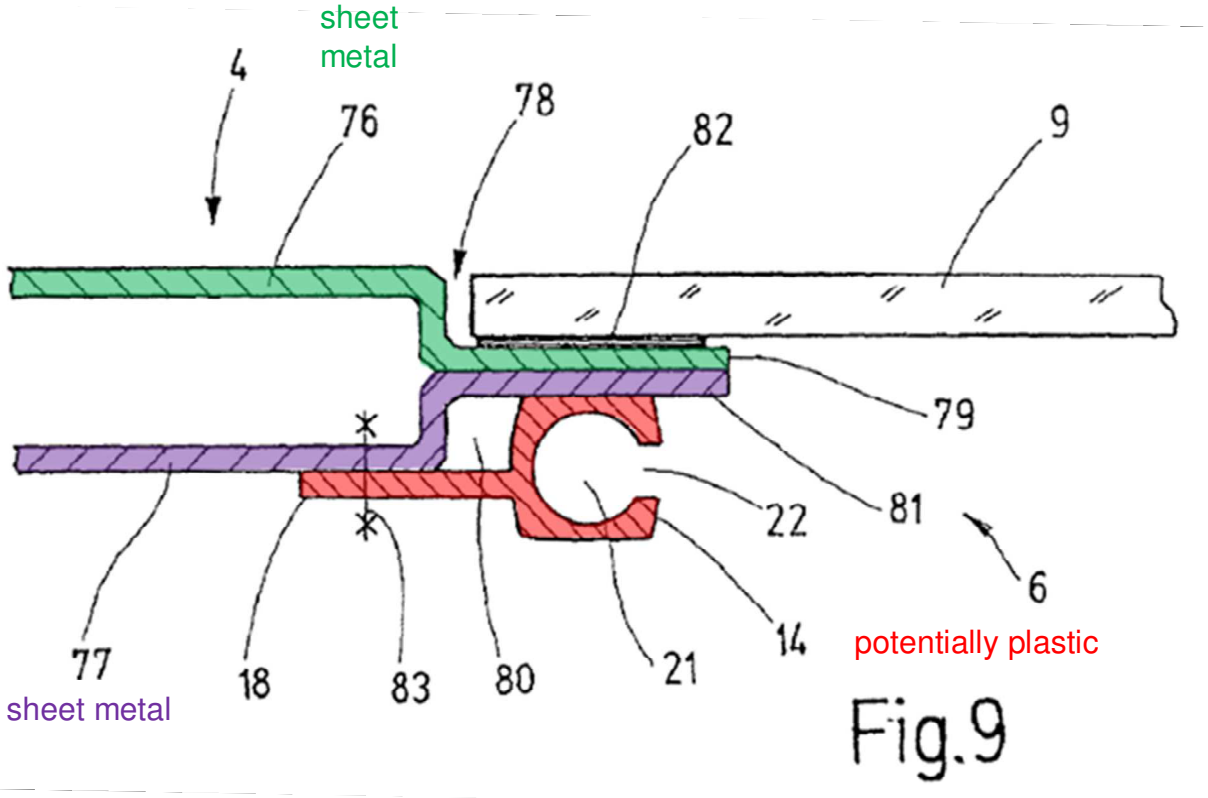


Figure 13, however, which is relied on by Petitioners, does not add on the separate guide rail portion that may be made from plastic. It shows only components made of shaped sheet metal and, as a result, it does not disclose a first part in the form of an "elongated molded part" or a second part in the form of an "elongated molded part," both of which are required by independent claims 22 and 37. Moreover, any modification of the embodiment of Figure 13 to use such molded plastic material (which would not be possible for the C-column of a vehicle body) would not anticipate the claims. *See In re Chudik*, 851 F.3d 1365, 1372 (Fed. Cir. 2017) ("[A] prior art reference anticipates a claim only if it discloses all the elements 'in the same form and order as in the claim.'").

Furthermore, Petitioners even asserts that *Schlecht* describes that the two parts 79 and 81 are connectable to each other by spot welding. (Petition at 17-18). Spot welding, however, is a process that is used for connecting *metals*, not molded plastic parts. That is because spot welding is a form of welding where an electric current is sent through two parts, which causes the contacting metal to be joined by the heat obtained from the resistance to the electric current. Such a process cannot be used with plastic parts, because plastic is an insulator, not a conductor, and the current would not be able to pass through such pieces. This further demonstrates that *Schlecht* does not disclose that the components in Figure 13 are formed by injection molding, as asserted by Petitioners. Thus, *Petitioners* have not established that *Schlecht* discloses first and second elongated *molded* parts as required by the claims.

2. *Schlecht* does not disclose "connecting parts/portions" being "interconnectable"

Moreover, independent claim 22 recites "*said connecting parts (68, 71)* of said first and second parts (63, 64) *being interconnectable to position and retain* the first and second parts (63, 64) relative to one another…." Independent claim 37 similarly recites "*said connecting portions (68, 71)* of said first and second parts (63, 64) *being interconnectable to hold* the longitudinal sections of the first and second parts (63, 64) together" (claim 37). As discussed in Section III above, the

phrase "said connecting [parts/portions] (68, 71) of said first and second parts (63, 64) being interconnectable" is properly construed to mean that the connecting parts must be mechanical structures that must be able to connect reciprocally in a way that can structurally maintain the first and second parts together.

For this limitation, Petitioners asserts that *Schlecht* describes that the two parts 79 and 81 are "connectable" to each other because the parts may be spot welded or glued to each other.[18] (Petition at 17-18, citing Ex. 1005 at ¶¶93, 102). That means of attachment, however, is applied to the components *after* they are placed into position; the first and second parts themselves have no connecting portions that are interconnectable as required by the claims. The welding current or the glue is not a mechanical structure of the elongated molded parts, but is a separate means to connect the components. That can be seen in Figure 13, relied on for the two parts by Petitioners:

[18] Notably Petitioners assert that the parts are "connectable" not "interconnectable" as required by the claims. (Petition at 17).

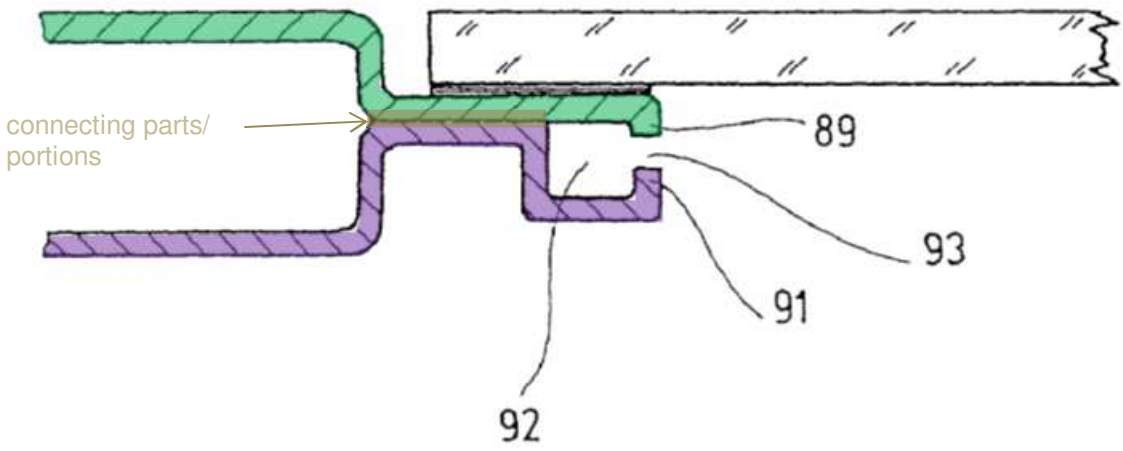
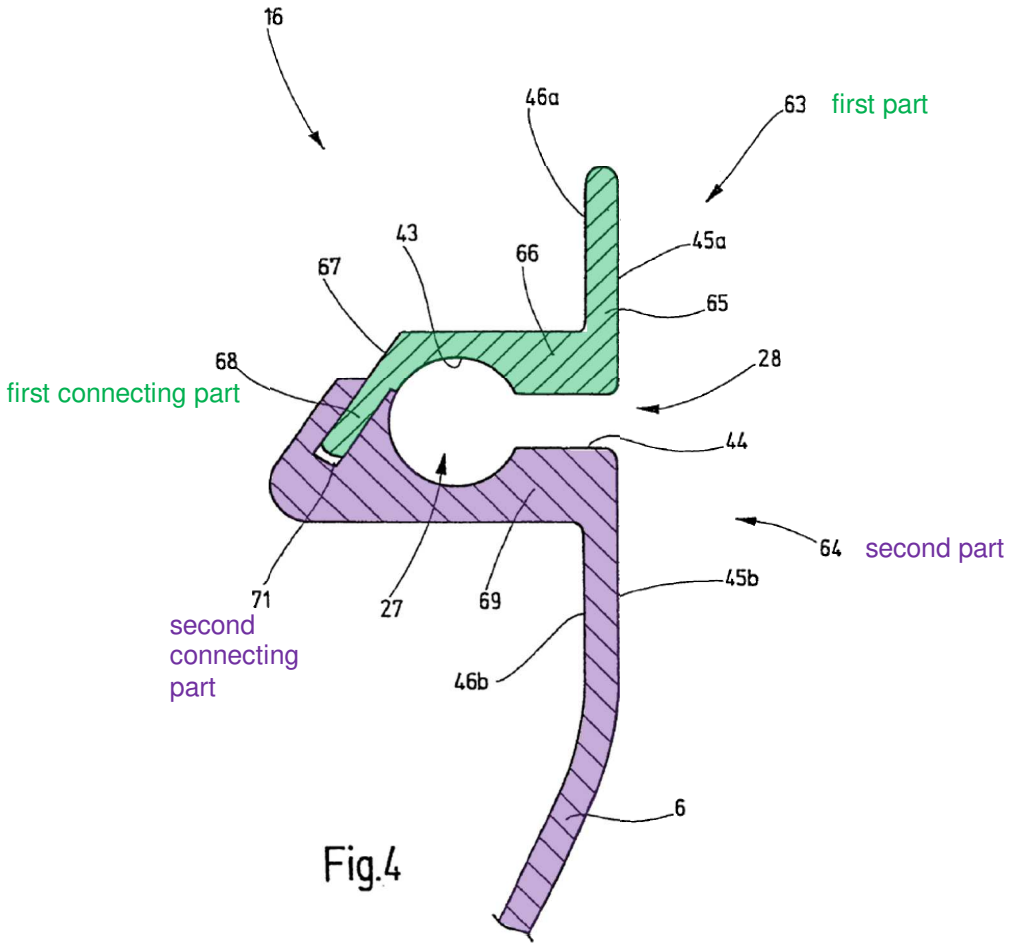


Fig.13

As shown, the alleged connecting portions (highlighted in yellow) of both the first part (shown in green) and second part (shown in purple) are merely flat surfaces that abut one another. Those flat surfaces do not connect reciprocally with each other so as to *inter*connect, certainly not in a way that either "positions and retains" the two parts or "holds" them together. Indeed, there must be some other clamping unit to hold those flat surfaces against one another for them to be properly welded. In the automotive field, typically robots are used for such positioning and holding prior to welding.

The difference in configuration can be seen when comparing these parts with the parts shown in the '659 Patent specification, which are identified by number in the claims themselves:



The figure shows that the first connecting part/portion 68 is interconnectable with the second connecting part/portion 71. And, as is evident from the figure, the interconnection "retains and positions" or "holds" the two elongated molded parts (63, 64) in position with respect to each other. Such functionality is not provided by the flat parts 89 and 91 in *Schlecht* which merely abut each other but do not position and retain, or otherwise hold, the two parts in position with respect to one another. Thus, *Schlecht* does not disclose *connecting parts/portions* of said first

and second parts "*being interconnectable*" as required by the independent claims 22 and 37. There are no mechanical structures in *Schlecht* that interconnect.

3. *Schlecht* does not disclose a "first part having … an elongated section formed with a groove"

Additionally, independent claims 22 and 37 both recite a "first part having … an elongated section *formed with a groove*" and a "second part having … an elongated section *formed with a groove*."

Petitioners have pointed to the element marked 89 (shown in green) as the "first part" and the element marked element 91 (shown in purple) as the "second part." Petitioners assert that the first part has an elongated section with a groove "being the extending portion leading up to and including the curved lip 89." (Petition at 16).

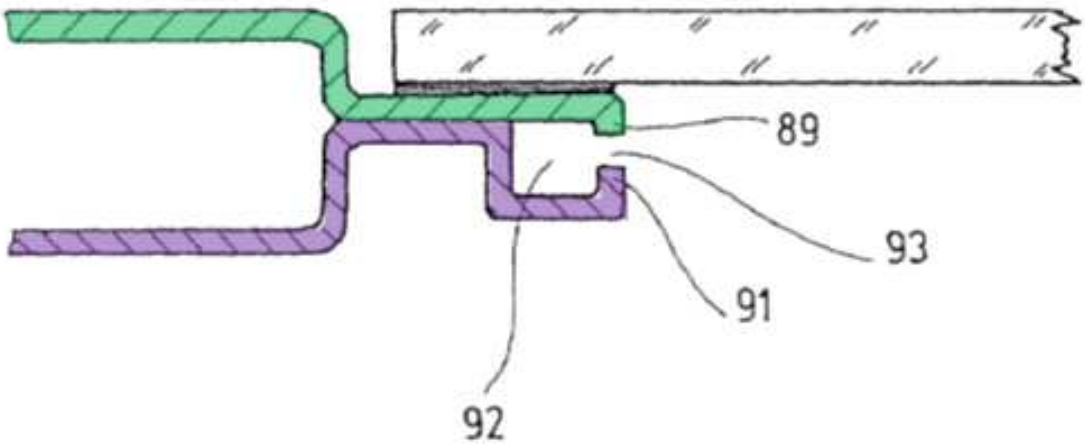


Fig.13

The so-called "extending section" is plainly flat. And, the lip does not create a "groove." Rather, it is just that—a lip at the end of something. To vividly illustrate that point, Figure 13 is reproduced below with the purported "first part" shown but the other parts removed:

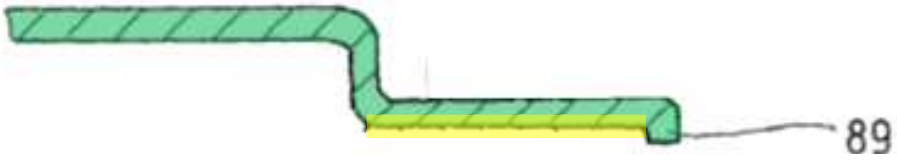
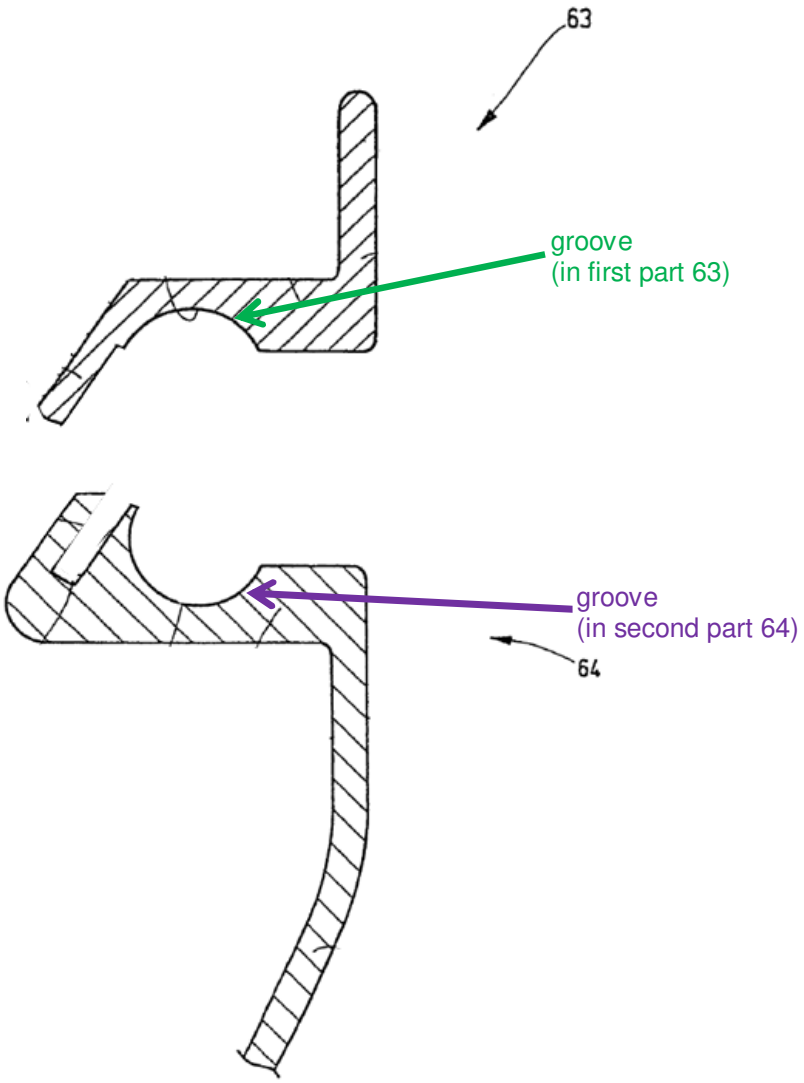


Fig.13

As the figure shows, the portion of the flat surface (highlighted in yellow) leading to the lip 89 (and which together with the other sheet metal part must form the claimed *guide groove*) has no groove.

In contrast, the embodiment referred to in the claims of the '659 patent requires that the elongated section of the first and second elongated molded parts be "formed with a groove." Those grooves can be seen clearly when the first and second parts from Figure 4 are shown in isolation:



As shown, each of the above structures would be understood as a "groove" based on the plain and ordinary meaning of the term.

The flat surface adjacent the lip in *Schlecht* does not form a groove. *Schlecht* therefore does not have "a first part having . . . an elongated section formed with a ***groove***", as required by the claims.[19]

Because each of the three separate claimed features presented above is missing from *Schlecht*, the Petition fails to establish that independent claims 22 and 37 of the '659 Patent are anticipated under Ground 1.

4. Dependent claims 30-32 and 42 are patentable over *Schlecht*

Petitioners' arguments as to claims 30-32, which depend from claim 22, and claim 42, which depends from claim 37, each necessarily fail for the same reasons discussed above with respect to the independent claims. *See Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1576 (Fed. Cir. 1987) ("Because [independent] claim 1 is not invalid, the presence of all its limitations in [dependent] claim 6 preserves the latter's validity.").

For at least the foregoing reasons, the Petition fails to establish a reasonable likelihood of prevailing on Ground 1.

[19] The claims require that both the first and second part have the "groove." Thus, switching the identification of which parts components 89 and 91 represent would have no effect on this analysis.

B. Ground 2: Obviousness over *Schlecht* in view of *Kyburz* for claims 23-24, 27, 29, 38, and 40

For Ground 2, Petitioners argue obviousness over *Schlecht* in view of *Kyburz* for claims 23-24, 27, 29, 38, and 40. Petitioners do not present any additional arguments concerning the limitations of independent claims 22 or 37, from which each of these claims depend. Thus, Ground 2 must fail for each of the claims for the same reasons as presented above for Ground 1 with respect to the assertions concerning the underlying independent claims 22 and 37. *See Panduit*, 810 F.2d at 1576.

Additionally, a POSITA would not be motivated to combine *Schlecht* and *Kyburz* in the manner suggested by Petitioners for at least the following additional reasons.

1. *Schlecht* and *Kyburz* are in non-analogous arts

Schlecht and *Kyburz* may not be properly combined because the references are in non-analogous arts. To determine whether prior art should be considered analogous art, the Federal Circuit has set forth the following test: "(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011). Here,

Schlecht relates to guide rails for passenger car window shades, which can best be described as the automotive field. By contrast, *Kyburz* relates to a support for curtains that can be used to prevent light from entering into a house, which can best be described as the home furnishing field. (Ex. 1009 at 1:3-9). As common sense dictates, and as can be seen from the mechanisms used in each reference, the respective references use very different mechanisms to address very different design considerations and solve very different problems. For example, a car window shade requires parts and interconnectable components that would work with and fit inside the metal body of a car. The design of a car window shade also requires consideration of parameters such as bend axes/curvatures, vibrations, temperature differences, and crash resistance. In contrast, a household curtain would likely be simply configured for a generally rectangular space without having to collapse and fit within the tightly curved space constraints of a vehicle body, would have different design and fashion considerations, would have very different vibration and temperature design issues, and would likely have different cost considerations.

The Federal Circuit has repeatedly found similar types of prior art combinations to be in non-analogous arts and thus insufficient to support obviousness rejections. For example, in *In re Clay*, the Federal Circuit ruled that

the Board clearly erred in finding that a prior art reference was within the inventor's field of endeavor merely because the reference and the claimed invention both related to the petroleum industry but the claimed invention was designed to operate in environments and conditions significantly different from the prior art and to serve different purposes. *In re Clay*, 966 F.2d 656, 658–59 (Fed. Cir. 1992). The Federal Circuit also determined that because the prior art reference and claimed invention were directed to different purposes—the claimed invention to storage in a man-made dead space, and the prior art reference to extraction in unconfined natural rock formations—the prior art reference was not reasonably pertinent to the particular problem the inventor was concerned with solving. *Id; see also In re Natural Alternatives, LLC*, 2016 WL 4536573, *4 (Fed. Cir. Aug. 31, 2016) (reversing obviousness rejection where prior art was generally alleged to fall within the "transportation industry," but the Board "ignored" the fact that the references are directed to substantially different problems); *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992) (reversing obviousness rejection, noting that "[i]t has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments."); *In re Klein*, 647 F.3d 1343, 1350–51 (Fed. Cir. 2011) (reversing obviousness rejection based on non-analogous art, because an inventor

considering the problem of making a nectar feeder with a movable divider "would not have been motivated to consider any of these references … particularly since none of these three references shows a partitioned container that is adapted to receive water or contain it long enough to be able to prepare different ratios in the different compartments").

Here, a POSITA looking to design improved guide rails for automotive sun shades would not look to references dealing with home curtain supports in the home furnishing field. As explained above, such disparate references have many different design concerns and requirements, and a POSITA would not seek to incorporate aspects of home window shade supports into the design of a guide rail for a rear vehicle window shade.

In its Petition, Petitioners only assert (supported by a conclusory expert declaration paragraph) that "*Schlecht* indicates a known problem of the window shade assembly being 'difficult to assemble … ***accurately in the vehicle***" and that "*Kyburz* expressly teaches 'circumventing' this problem by simplifying the assembly process," which would therefore make it obvious to combine the references. (Petition at 25, citing Ex. 1003 at ¶65) (emphasis added). That assertion is flawed for multiple reasons. First, *Kyburz* has nothing to do with problems associated with assembling window shades ***in a vehicle***, so a POSITA

would not look to it to solve the identified problem. For example, *Schlecht* describes that guide rails in vehicles are subject to "quite filigreed bodies," are installed into the vehicle on the assembly line, and require multiple axes of curvature. (Ex. 1005 at ¶¶ 4, 7, 74). None of these factors are relevant to home windows or openings. Second, Petitioners' cursory assertion fails to consider the disparate design considerations faced by a POSITA designing window shades that fit within a car's metal frame versus the considerations that go into designing curtains for use in a home. As explained above, such disparate references may not be used to sustain the obviousness rejection under the test for analogous arts articulated by the Federal Circuit. Thus, *Schlecht* and *Kyburz* should be considered non-analogous art, which may not be used to support Petitioners' obviousness argument.

2. The Proposed Combination with *Kyburz* would require modifying *Schlecht's* principle of operation

Additionally, *Kyburz* cannot properly be combined with *Schlecht* because doing so would improperly require modifying *Schlecht's* principle of operation. That is because "combinations that change the basic principles under which the prior art was designed to operate, or that render the prior art inoperable for its intended purpose, may fail to support a conclusion of obviousness." *Plas-Pak*

Indus., Inc. v. Sulzer Mixpac AG, 600 F. App'x 755, 758 (Fed. Cir. 2015) (citations omitted). That is exactly what Petitioners' proposed combination would do.

As discussed above, the portion of *Schlecht* relied on by the Petitioners is a guide frame made from the shaped metal C-column of the vehicle body. Petitioners argue that parts 89 and 91, shown below, are attached to each other through welding. (Petition at 17-18).

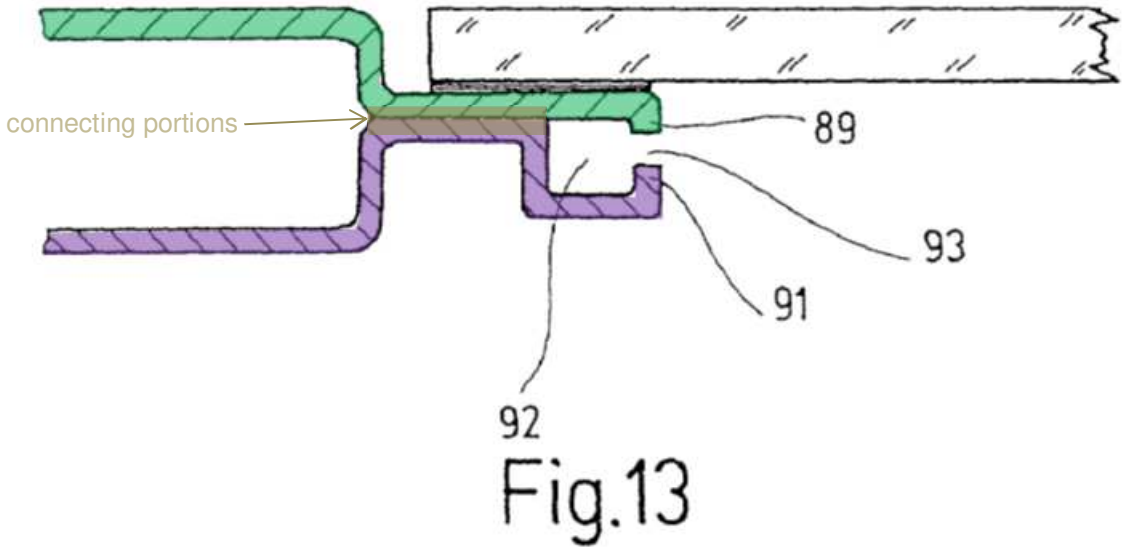
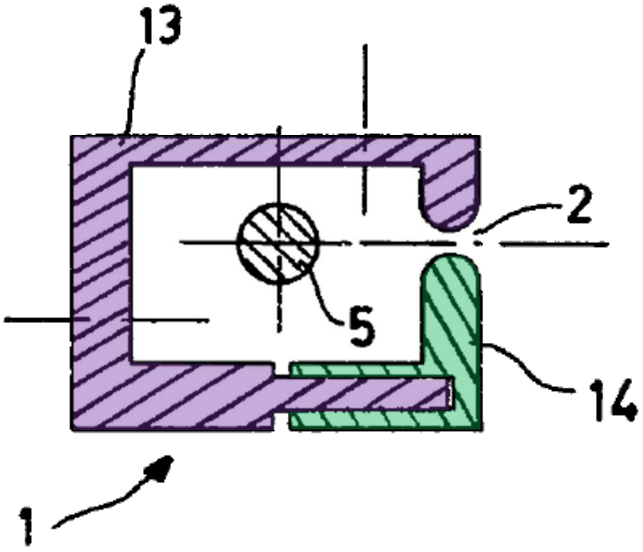


Fig.13

Kyburz, in contrast, relates to the assembly of a support for a curtain in a house. The portion of *Kyburz* relied on by Petitioners that would allegedly be combined with *Schlecht* are the housing cover elements, *i.e.* base element 13 and clamping piece 14, shown in Figure 3, reproduced below:



(Petition at 25-31).

But this sort of web attachment, which would need to be incorporated into the abutting surfaces shown in *Schlecht* to arrive at the claimed invention, would render *Schlecht* inoperable. Simply, *Schlecht* relies on two flat surfaces abutting each other and spot welded to form part of the car's frame. (Ex. 1005 at ¶93) Petitioners fail to explain how such surfaces 89 and 91 of *Schlecht* could be modified to incorporate the web attachment shown by elements 13 and 14 of *Kyburz*. And even assuming that it can be done, there is no explanation as to why a POSITA would choose to do that, particularly taking into account the potential ramifications of modifying the vehicle's body (C-column) construction. Any such modifications would change the basic principles under which the prior art was designed to operate, and could impact the required vehicle body strength for

purposes of crashworthiness, vibrations, etc. As a result, for this additional reason, the proposed combination cannot support Petitioners' obviousness assertion.[20]

For at least the foregoing reasons, the Petition fails to establish a reasonable likelihood of prevailing on Ground 2.

C. Ground 5: Anticipation over *Viertel* for claims 22 and 30-32

Ground 5 asserts anticipation under 35 U.S.C. § 102(b). That requires a showing that every limitation of the challenged claims is disclosed by *Viertel*. *See Nidec Motor Corp.*, 851 F.3d at 1273; *Verve*, 311 F.3d at 1120. *Viertel* does not do so.

As demonstrated below, *Viertel* fails to disclose numerous limitations of the challenged claims, with each failure alone providing a separate, independent reason why *inter partes* review should not be instituted. Thus, Petitioners have not sustained their burden of proving the invalidity of the challenged claims based on this reference. *See Harmonic Inc.*, 815 F.3d at 1363.

[20] Additionally, while not relied on by Petitioners as disclosing any element of the independent claims, it should be noted that *Kyburz's* support rod 5 and surrounding elements 13 and 14 are not guide rails and do not have any guiding function. Rather, elements 13 and 14 are simply decorative housing features that surround the support rod to hide the loops 10. (Ex. 1009 at 4:15-22).

1. *Viertel* does not disclose a "guide groove"

Independent claim 22 recites that "said grooves of said first and second parts (63, 64) defin[e] an undercut ***guide groove*** (27)." As discussed in Section III above, a "guide groove" is properly construed to mean "a groove that directs or steadies the motion of something."

Petitioners points to the two halves 11 and 12 (shown green and purple, respectively, below) of profile bar 4 in *Viertel* as the claimed first and second elongated molded parts. It then asserts that it is the support bar 28, shown in Figures 6 and 9, that forms a guide groove for the window shade. (Petition at 40).[21] The "support bar 28," however, is *not part of the profile bar 4* (relied on for the first and second parts), but rather is part of the pivot lever 5 (shown in red below).

[21] Petitioners are again incorrect on the facts. While Figure 6 does show the cross section of halves 11 and 12 (the purported first and second parts) (Ex. 1007 at 3:8; 3:27-4:1), Figure 9 does not. Rather, Figure 9 shows a cross section of the pivot lever 5 (shown in red). (*Id.* at 3:11; 4:8-15).

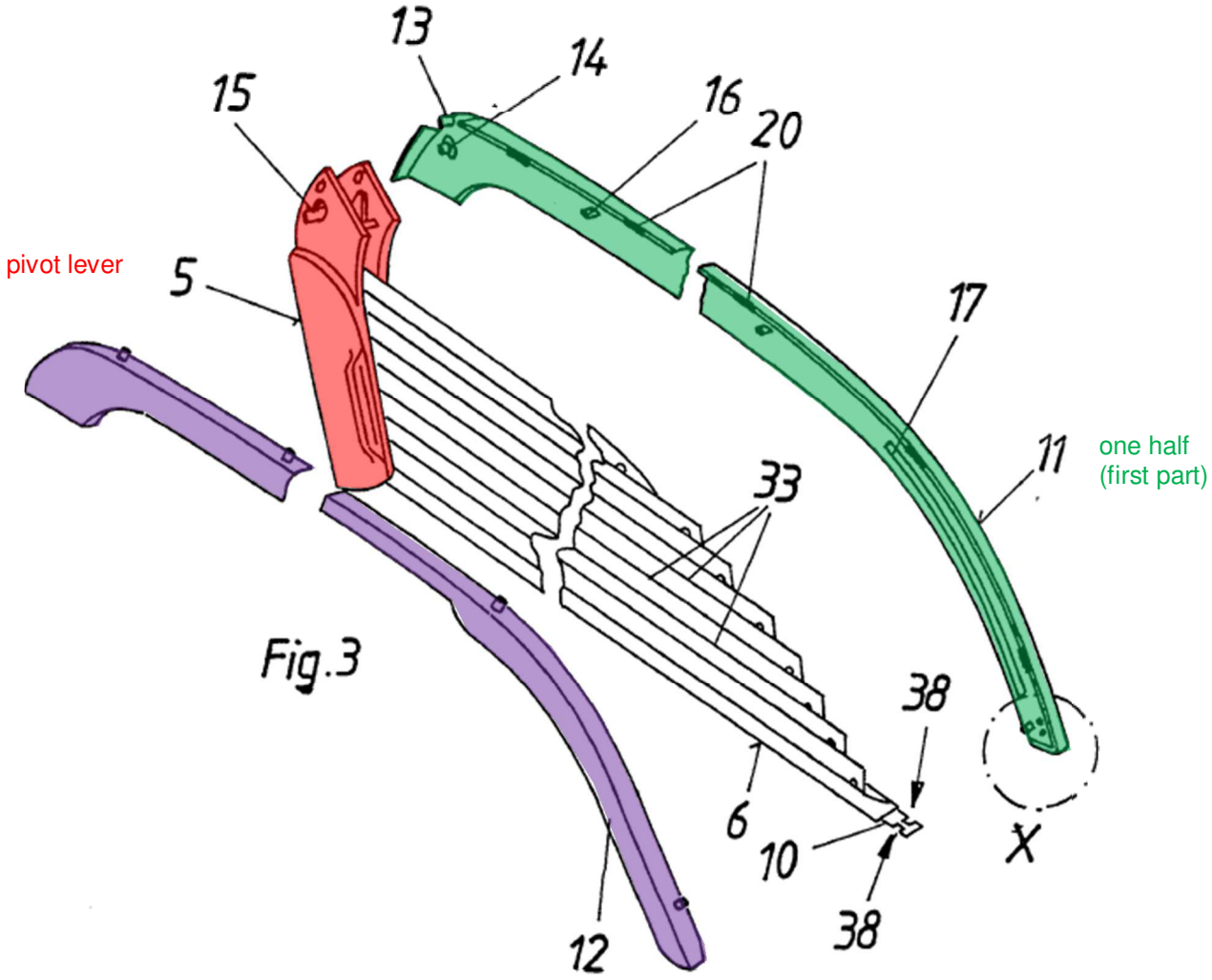


Fig.3

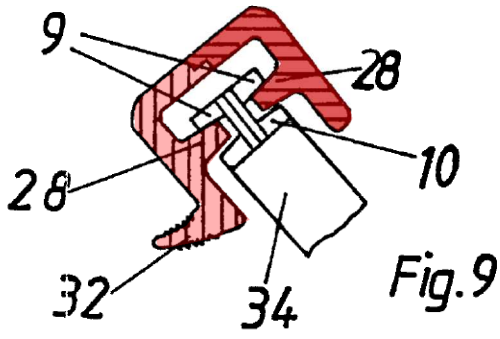


Fig.9

Fig.6

Moreover, Petitioners are again factually wrong on their interpretation of the reference: halves 11 and 12 do not contain a "groove" that guides (i.e., directs or steadies) the spring rod 10 of the sun shade body 6.

First, with respect to the unmarked end of the spring rod (element 10) shown in Figure 6 (illustrating the two halves 11 and 12 of the profile bar 4), that end is "held" against any linear movement by pins 18 and webs 19 as shown in Figures 3 and 5.[22] As illustrated in the cross-sectional view of Figure 5, reproduced below, the pin 18 (shown in blue) holds and secures the end of the spring rod 10 in place. (Ex. 1007 at 1:13-14; 3:31) ("end portion of the spring rod (10) is fixed against a linear movement at an end portion of the profile bar (4) that is oriented away from the pivot lever (5).")

[22] Petitioners served their own translation of *Viertel,* which is cited to herein. However, *Viertel* has a published U.S. counterpart, US Patent No. 5,417,467, which states: "There are pins 18 and webs 19 for *holding* the bottom support spring bar 10, described below, at the end of the halves 11 and 12 that are remote from the swing lever 5." (emphasis added) (Ex. 2002).

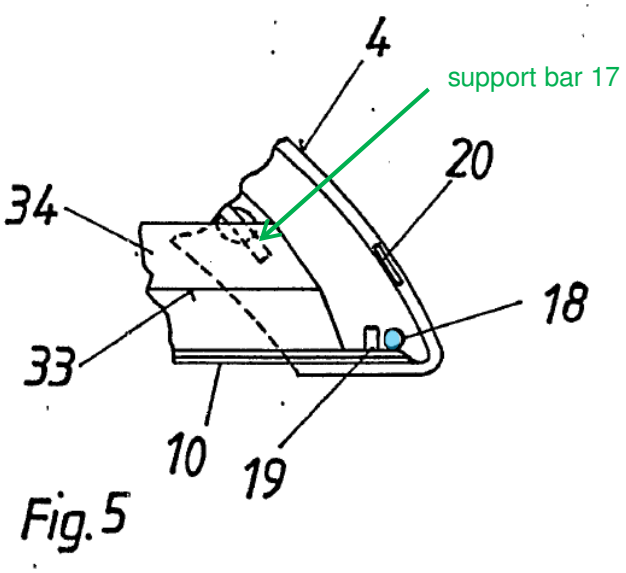


Fig. 5

Likewise, the profile of the bar shown in unmarked Figure 6, reproduced below, shows that the spring bar 10 is also held in place in the axial direction by the bars 19 (above) so that it cannot be removed from under the pin 18 (not shown).

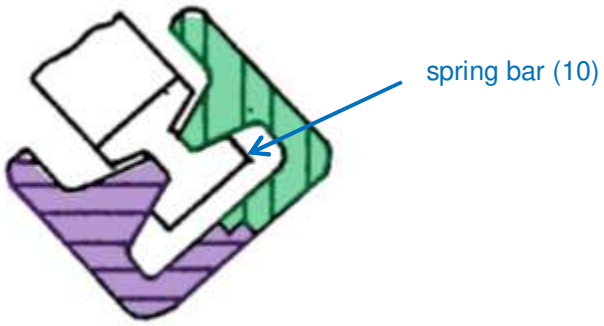
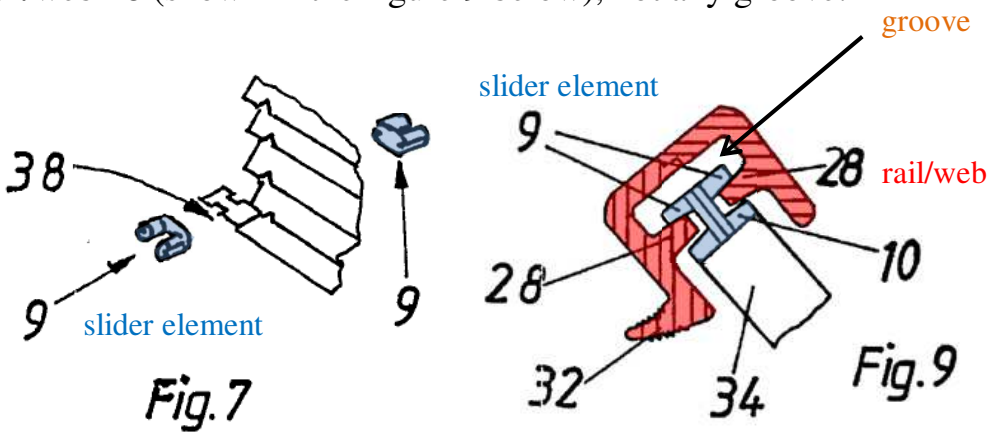


Fig. 6

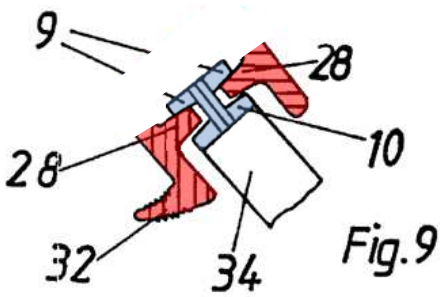
Indeed, there are no "slider" elements (9) at this end of the spring rod precisely because ***it does not move***. Rather, in the two halves 11, 12 there is only a support bar 17 (annotated into Fig. 5 above) onto which the relief cuts 35 of the sun shade

body 6 are supported. (Ex. 1007 at 5:14-19). Accordingly, Petitioners have not established that the two halves 11 and 12, *which the Petitioners allege are the claimed first and second elongated molded parts*, have a "guide groove" as required by the claim language when assembled.

Second, with respect to the aspects of the spring rod 10 shown in Figure 9, such features are shown on the pivot lever 5, and not on the two halves 11 and 12, which are relied on by the Petitioners as the first and second elongated molded parts of the guide rail. (*Id.* at 3:11; 5:13-19). Moreover, even here, *Viertel* does not make use of any guide "groove," but rather operates via a guide "rail" or "web" principle. The slider element 9, as shown in blue in Figures 7 and 9 below, has a U-shape so as to be mounted over and guided on the rail/web 28. What controls the "direction of movement" of the spring bar 10 along the pivot lever 5 is the support rail/web 28 (shown in the figure 9 below), not any groove:



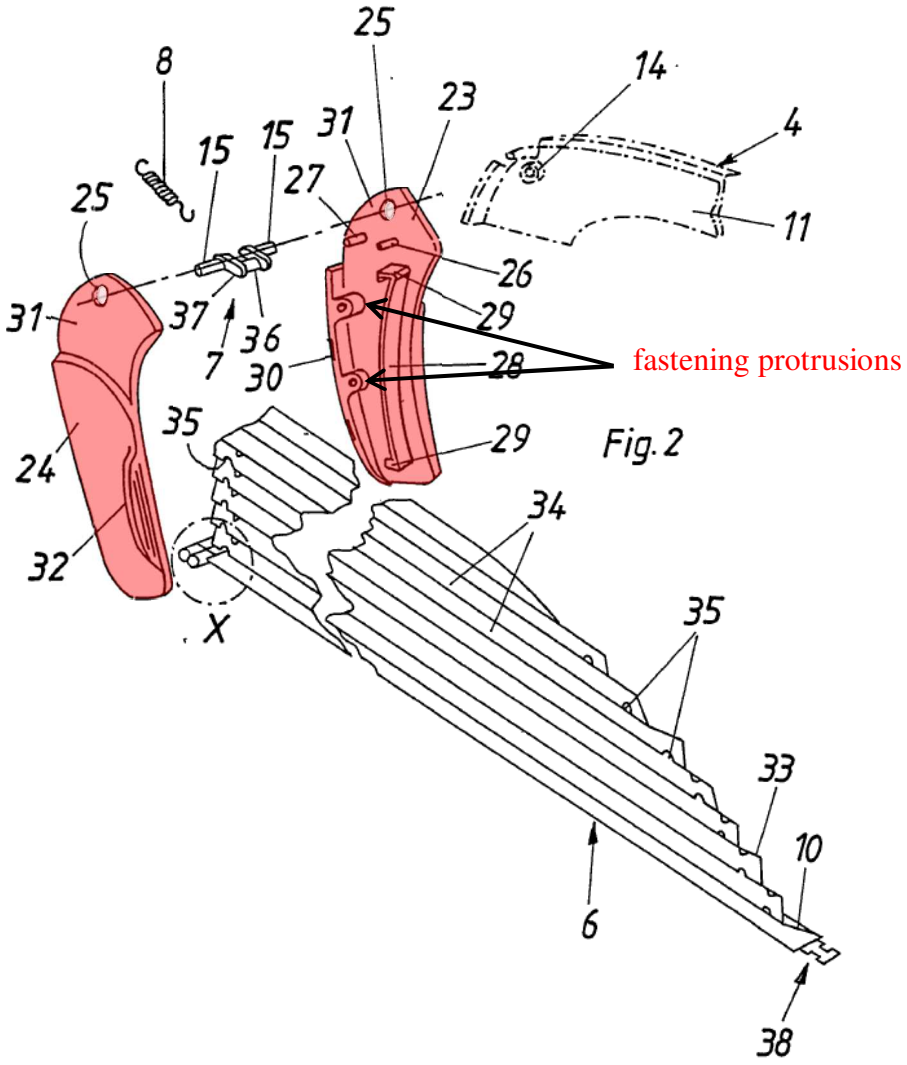
To illustrate that point, Figure 9 is reproduced below with the alleged "guide groove" removed, resulting in the same guidance of the spring bar 10 via the guide rail/web 28:



no groove;
same shade movement

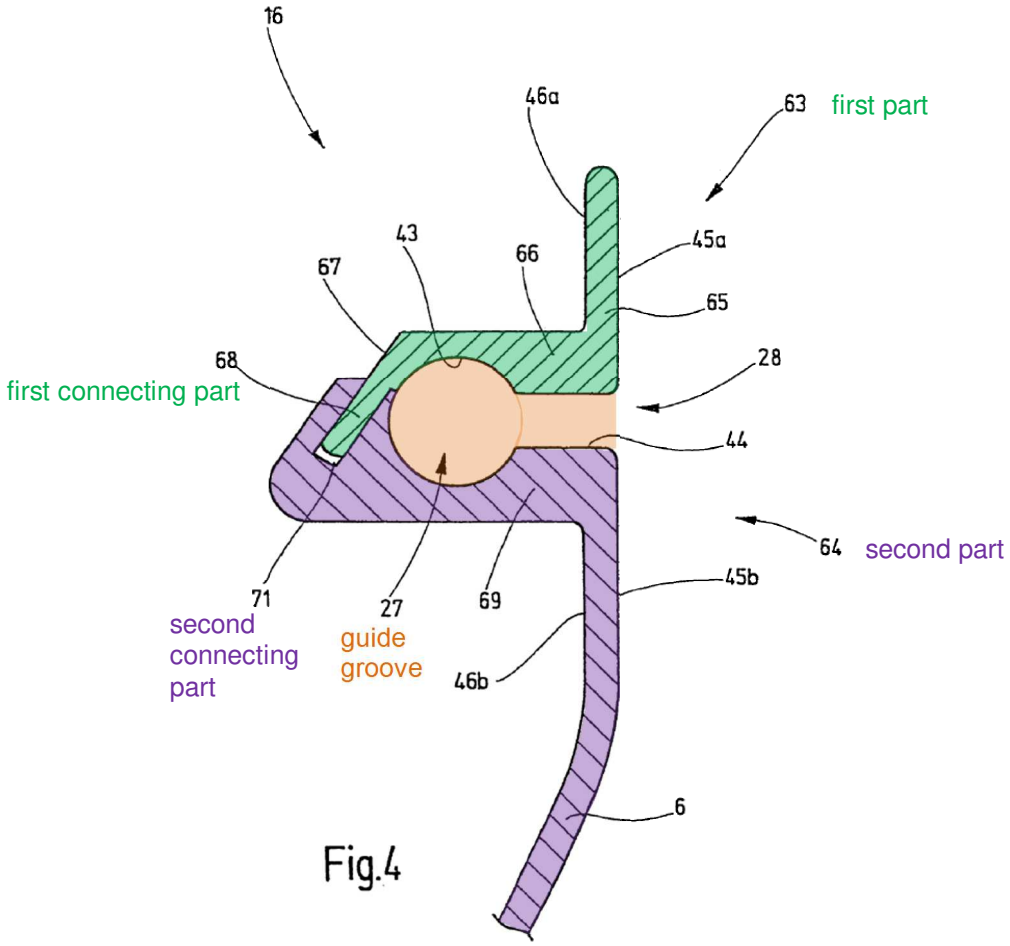
As this figure shows, it is not a "groove" (*e.g.*, long narrow channel or depression) that "guides" (*i.e.*, directs or steadies movement), rather it is the shape of the support rail 28 on which the slider 9 rides.

Additionally, Figure 2, which is reproduced below, shows that when the pivot lever would be assembled together, the area to the left of the rail 28 has no defined shape to be a "guide groove." Indeed, that area of the pivot lever 5 is actually interrupted by multiple fastening protrusions (marked below), not evident in the cross section shown in Figure 9 (the figure 9 cross section being only at the bottom area marked "X"):



Such protrusions would interrupt any purported groove and would also disrupt any possible guidance provided by a purported groove (shown in Figure 9). This further demonstrates that there is no guiding *by a groove* in the pivot lever 5. Instead, the slider elements glide on the rail/web 28 to direct or steady the movement, as explained above.

The difference in configuration can be seen by comparing these parts with the corresponding parts shown in the '659 Patent specification, which are identified by number in the claims themselves:



In contrast to *Viertel*, this "guide groove" 27 actually directs the window shade guide pieces 26, which fits within the circular portion of the groove. *See* (Ex. 1001 at 4:40-43) ("The diameter of the circular section 43 is adapted to the diameter of the guide pieces 26."). It is the shape or curvature of the guide groove 27 in the elongated direction (perpendicular to the page) that directs the motion.

Thus, *Viertel* does not disclose the "guide groove" required by claim 22.

2. *Viertel* does not disclose connecting parts being "interconnectable" to position and retain the first and second parts

Moreover, independent claim 22 recites "***said connecting parts (68, 71)*** of said first and second parts (63, 64) ***being interconnectable to position and retain*** the first and second parts (63, 64) relative to one another…." As discussed in Section III above, the phrase "said connecting parts (68, 71) of said first and second parts (63, 64) being interconnectable" is properly construed to mean that the connecting parts must be mechanical structures that must be able to connect reciprocally in a way that can structurally maintain the first and second parts together.

For this limitation, Petitioners cite to the two halves 11 and 12 of the profile bar for the first and second elongated molded parts shown in Figure 3, and also in the cross-sectional view of Figure 6, reproduced below, and they assert that the parts are connectable to each other by "ultra sonic welding." (Petition at 43).

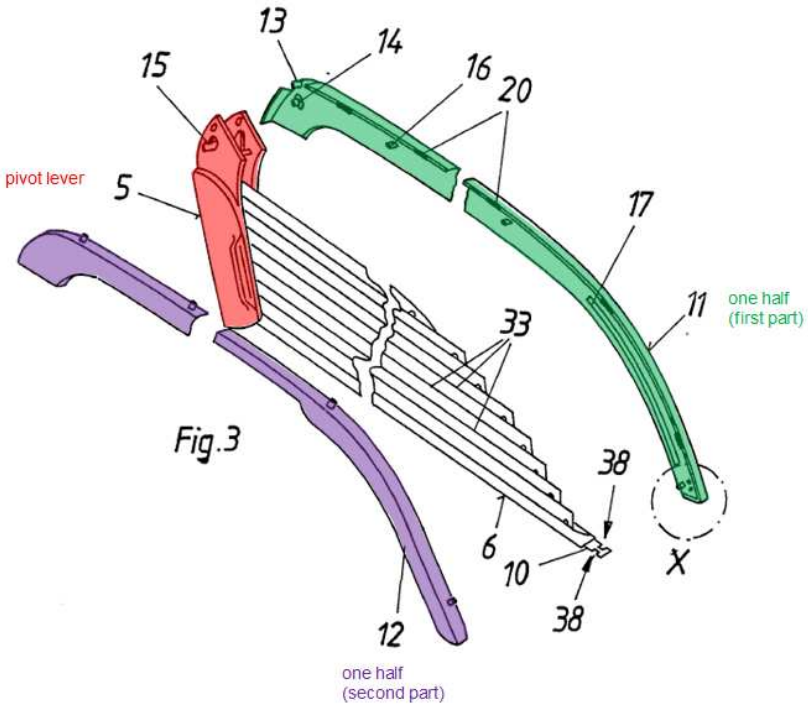


Fig.3

Fig.6

"Ultra sonic welding," however, is not a "connecting part" of either the first or second elongated molded parts that is interconnectable to position and retain as properly construed. As shown in Figure 6, the two halves merely abut one another, and they are not interconnectable in a way that could "position and retain" the two parts together. Instead, *Viertel* makes use of "welding zones 20 [that] are configured at the halves 11, 12 to ***fix*** the halves." (Ex. 1007 at 3:39-4:2 (emphasis added)). And with respect to the assertion that the parts are connected by ultra sonic welding, that means of attachment is performed on the components after they are placed into position; the connecting portions of the parts themselves are not interconnectable to position and retain as required by the claim.

This difference in configuration can be seen by comparing these parts with the structures shown in the '659 Patent specification, which are identified by number in the claims themselves:

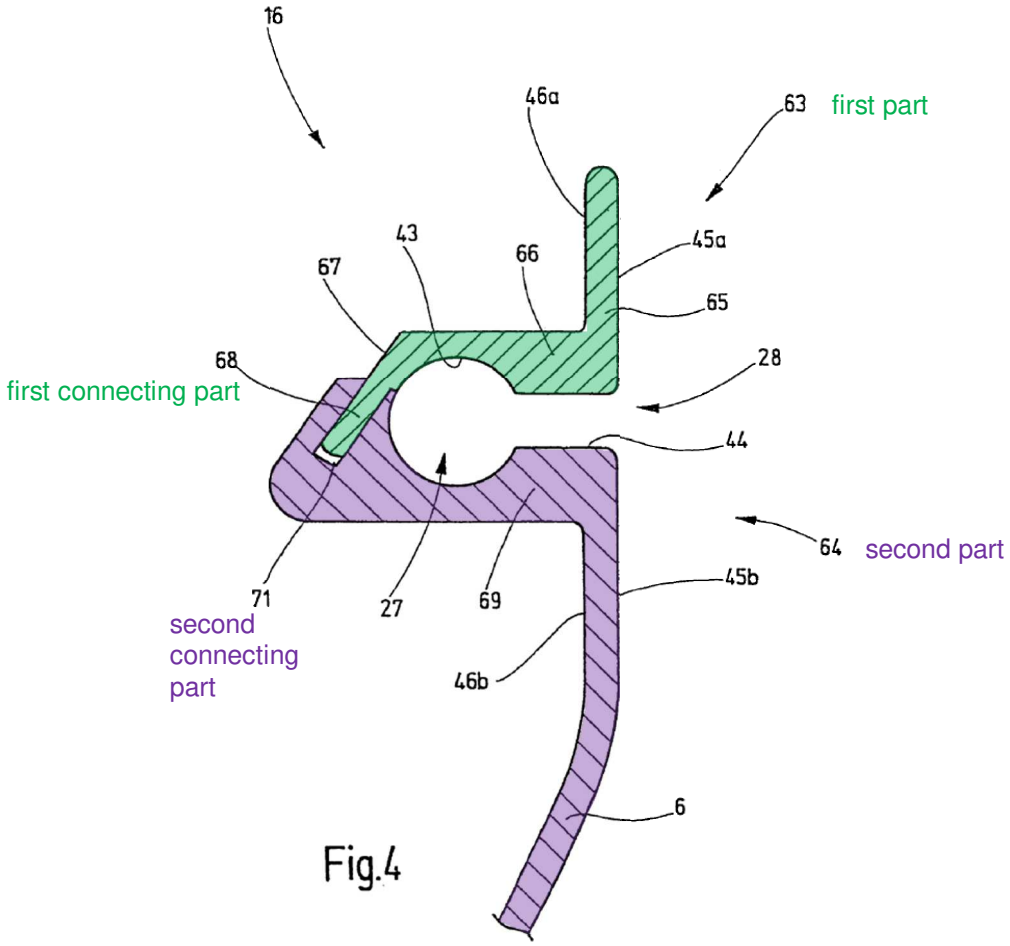


Fig.4

The figure shows that the first connecting part 68 is a mechanical structure that forms part of the first elongated molded part 63 and is interconnectable with the structured groove (second connecting part) 71 of the second elongated molded part 64. And, as is evident from the figure, the interconnection "retains and positions" the two parts with respect to each other. Such functionality is not provided by the

halves 11 and 12 of *Viertel*, which merely abut each other (as shown in Figure 6) but do not position and retain themselves, as required by the claim. Thus, *Viertel* does not disclose "said connecting parts (68, 71) of said first and second parts (63, 64) being interconnectable to position and retain the first and second parts (63, 64) relative to one another" as recited by independent claim 22.

3. Dependent claims 30-32 are patentable over *Viertel*

Petitioners' arguments as to claims 30-32, which depend from claim 22, each necessarily fail for the same reasons discussed above with respect to the independent claims. *See Panduit*, 810 F.2d at 1576.

Additionally, claim 32 requires that "one of said first and second parts (**63**, **64**) forms an integral component of a section of an inside lining (**6**) of a motor vehicle." As explained above, the phrase "one of said first and second parts *forms an integral component of a section of an inside lining of a motor vehicle*" is properly construed to mean that one of the parts must form a unit with the inside lining of the motor vehicle. Such a construction would not include an arrangement where the guide rail is added to a pre-existing inside lining that is supported without such guide rail arrangement. *Viertel*, however, discloses a profile bar that gets attached to the upper portion of door frame of the vehicle door in the narrow area above the window (when closed), after assembly. (Ex. 1007 at 4:3-6).

Indeed, *Viertel* refers to a sun shade *adjacent* to the B-column of the motor vehicle. (*Id.* at 2:1). There would be no inside lining at that location and, hence, no part that "forms an integral component of a section of an inside lining."

The Petition cites to a disclosure from *Viertel* that uses the word "integrally" in the following context: "Pins with an expanded head are integrally formed at the upper terminal wall of the profile bar 4 in order to fix the sun shade at the door frame of the vehicle door 2." (Petition at 45). That is referring to the pins 21 that engage in a hole pattern 22 as shown in Figure 11. (Ex. 1007 at 4:3-6). But that disclosure only indicates that the ***pins*** are an "integral" part of the guide rails, not that the guide rails are an "integral" part of the inside lining of the vehicle. To the contrary, the disclosure actually indicates that the guide rail will get attached to the existing door frame, which structurally exists intact without the shade. Thus, the guide rail is not an integral component of an inside lining of the motor vehicle, as recited by claim 32. As a result, for this additional reason, claim 32 is not anticipated by *Viertel.*

For at least the foregoing reasons, the Petition fails to establish a reasonable likelihood of prevailing on Ground 5.

D. Ground 6: Obviousness over *Viertel* in view of *Kyburz* for claims 23-24, 27, and 29

For Ground 6, Petitioners argue that claims 23-24, 27, and 29 are obvious over *Viertel* in view of *Kyburz*. Petitioners do not present any additional arguments concerning the limitations of independent claim 22, from which each of these claims depend. Thus, Ground 6 must fail for each of the claims for the same reasons presented above for Ground 5 with respect to the assertions concerning the underlying independent claim 22. *See Panduit*, 810 F.2d at 1576.

Additionally, a POSITA would not be motivated to combine *Viertel* and *Kyburz* in the manner suggested by Petitioners for at least the following additional reasons.

1. *Viertel* and *Kyburz* are in non-analogous arts

First, *Viertel* and *Kyburz* may not be properly combined because the references are in non-analogous arts. As explained in Section V.B.1 above, to determine whether prior art should be considered analogous art, the Federal Circuit has set forth the following test: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Klein*, 647 F.3d at 1348. Here, *Viertel* relates to passenger car side window shade,

which can best be described as the automotive field. (Ex. 1007 at 1:5-6). And, *Kyburz* relates to a support for curtains that can be used to prevent light from entering into a house, which can best be described as the home furnishing field. (Ex. 1009 at 1:3-9). As common sense dictates, and as can be seen from the mechanisms used in each reference, the respective references use very different mechanisms to attend to very different design considerations and solve very different problems. For example, a car window shade requires parts and interconnectable components that would work with the metal body of a car. The design of a car window shade also requires consideration of parameters such as bend axes/curvatures, vibrations, temperature differences, and crash resistance. In contrast, a household curtain would likely be simply configured for a generally rectangular space without having to collapse and fit within tightly curved space constraints, would have different design and fashion considerations, would have very different vibration and temperature design issues, and would likely have different cost considerations.

As explained in Section V.B.1 above, the Federal Circuit has repeatedly found similar types of prior art combinations to be in non-analogous arts and insufficient to support obviousness rejections. And, just like the assertions for Ground 2, a POSITA looking to design improved guide rails for automotive sun

shades would not look to references dealing with home curtain support in the home furnishing field. Such disparate references have many different design concerns and requirements, and a POSITA would not seek to incorporate aspects of home window shade supports into the design of a guide rail for a side vehicle window shade.

In its Petition, Petitioners only assert that "Ease of guide rail assembly is a well-known problem as noted by both *Kyburz* and the '659 Patent itself" and that it would have been obvious to combine *Viertel* and *Kyburz* to "ease the assembly process," which would therefore make it obvious to combine the references." (Petition at 46) (citations omitted). That assertion is flawed for multiple reasons. First, *Kyburz* has nothing to do with any identified problems associated with assembling window shades ***in a vehicle***, so a POSITA would not look to it to solve the identified problem. Second, Petitioners' cursory assertion fails to consider the disparate design considerations faced by a POSITA designing window shades that work with a car's metal frame versus the considerations that goes into curtains used in one's home. As explained above, such disparate references may not be used to sustain the obviousness rejection under the test for analogous arts articulated by the Federal Circuit. Third, *Kyburz's* support profile is just a housing, and is not a guide rail. In *Kyburz*, the guiding is performed by the support

rod 5. Thus, *Viertel* and *Kyburz* should be considered non-analogous art, which may not be used to sustain this obviousness rejection.

2. Petitioners' alleged motivation to combine is not supported by any rational underpinnings

Ground 6 also fails because the asserted combination of references is not supported by any reason to combine having rational underpinnings. *See In re Nuvasive, Inc.*, 842 F.3d 1376, 1382 (Fed. Cir. 2016); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)). As discussed above, Petitioners assert that "[e]ase of guide rail assembly is a well-known problem as noted by both *Kyburz* and the '659 Patent itself" and therefore it supposedly would have been obvious to combine *Viertel* and *Kyburz* to "ease the assembly process." (Petition at 46) (citations omitted). But Petitioners' own evidence for this alleged motivation confirms its flaws. First, Petitioners improperly point to the '659 Patent itself to supply the missing motivation. *See Westinghouse Air Brake Tech. Corp. v. Siemens Industry, Inc.*, IPR2017-00582, Paper 12, at 16 (P.T.A.B. July 19, 2017) ("Petitioner's analysis suggests improper hindsight because it begins with the problem addressed in the '032 patent and considers whether the combined references are capable of solving that problem."). Second, Petitioners point to *Kyburz* to suggest that curtains in houses have assembly problems, but that has nothing to do with why a person

would want to modify the car shade assembly of *Viertel*. (Petition at 46). Nor is there any citation to any evidence of problems with the assembly of the vehicle design in the cited prior art, including any issues that would lead a POSITA to look from *Viertel* to *Kyburz*. Third, Petitioners cite to Paragraph 117 of its expert declaration as support. (*Id.*, citing Ex. 1003 at ¶117). But that paragraph contains nothing more than a conclusory statement that relies on the same assertions from the '659 Patent itself and in *Viertel*, discussed above. *See InTouch Techs., Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (finding that testimony did not articulate reasons to combine and improperly used the challenged patent as a roadmap). Thus, Petitioners have not established any rational reason why a POSITA would have been motivated to combine *Viertel* with *Kyburz*.

E. Ground 9: Obviousness over *Viertel* in view of *Schlecht* for claims 37 and 42

For claim 37, Petitioners argue that *Schlecht* discloses the limitations relating to the "window shade" and that *Viertel* discloses the limitations of the "guide rail." For *Schlecht*, it presents identical arguments to those presented for the same limitations in Ground 1, and for *Viertel* it presents identical arguments to those presented for the similar limitations of claim 22 in Ground 5. This combination, however, fails to disclose all of the limitations of claim 37 because

Viertel does not disclose a "guide groove" or "said connecting parts/portions (68, 71) of said first and second parts (63, 64) being interconnectable to hold the longitudinal sections of the first and second parts (63, 64) together" for the same reasons as discussed above in Section V.C. above with respect to Ground 5 concerning claim 22.[23] Thus, Petitioners have not established the obviousness of claim 37. *See Google Inc. v. SimpleAir, Inc.*, 682 F. Appx. 900, 906 (Fed. Cir. 2017) (affirming the Board's finding that the prior art failed to disclose the disputed claim limitation and thus the prior art did not render the claims obvious); *Samsung Elecs. Co. v. Straight Path IP Grp., Inc.*, 696 Fed. Appx. 1008, 1014 (Fed. Cir. 2017) (affirming Board's ruling that claims were not proven obvious where the prior art failed to teach a claim limitation).

[23] Claim 37 refers to "said connecting portions (68, 71) of said first and second parts (63, 64) being interconnectable to hold the longitudinal sections of the first and second parts (63, 64) together" whereas claim 22 requires "said connecting parts (68, 71) of said first and second parts (63, 64) being interconnectable to position and retain the first and second parts (63, 64) relative to one another…." The arguments presented above with respect to claim 22 are equally applicable to the similar claim language in claim 37.

1. Petitioners' alleged motivation to combine is not supported by any rational underpinnings

Moreover, Ground 9 also fails because the asserted combination of references is not supported by any reason to combine having rational underpinnings. *See In re Nuvasive*, 842 F.3d at 1382; *In re Kahn*, 441 at 988 (cited with approval in *KSR*, 550 U.S. at 418. The Petition cites only to the '659 Patent itself to argue that there is a "known problem" of needing to improve the ease of assembly of a window shade assembly. (Petition at 55). It then states that *Schlecht* offers a solution to "this problem" by improving the ease of window shade assembly, and that *Viertel* also teaches to "circumvent" this shortcoming. (*Id.*). But this rationale is flawed for multiple reasons and lacks any "rationale underpinnings."

First, as it does for other grounds, Petitioners improperly rely on the '659 Patent itself to supply the missing motivation. *See Westinghouse*, IPR2017-00582, Paper 12, at 16 (P.T.A.B. July 19, 2017) ("Petitioner's analysis suggests improper hindsight because it begins with the problem addressed in the '032 patent and considers whether the combined references are capable of solving that problem.").

Second, there is no explanation as to how or why these two references would be combined to solve assembly problems with vehicle window shades. Nor is there an explanation or evidence as to why a POSITA would pick out these

particular references and modify them to solve problems relating to vehicle window shade assemblies. *See Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993–94 (Fed. Cir. 2017) ("But that reasoning seems to say no more than that a skilled artisan, once presented with the two references, would have understood that they *could be* combined. And that is not enough: it does not imply a motivation to pick out those two references and combine them to arrive at the claimed invention.").

For example, claim 37 requires a "rotatably supported window shade shaft (19)." While *Schlecht* (an earlier development by Patent Owner) is directed to a *strip-shaped, rotatably supported, rear* window shade, *Viertel* is not. Rather, it is directed to a foldable fan-like side window shade configuration that pivots on one side. It contains vastly different operating principals (fan-like pivot lever that causes a bending of a support bar for the window shade versus a dual side even guidance to unroll the window shade from a rotatable shaft), design features and considerations. And *Viertel's* mechanism can never support a rollable shade, such as disclosed in *Schlecht.* Indeed, Petitioners offer no explanation or evidence as to how these two references could possibly be combined in a way that would work, given their vastly different mechanisms of operation.

Third, Petitioners cite to Paragraph 134 of their expert declaration as support. (Petition at 55, citing Ex. 1003 at ¶134). But that paragraph contains nothing more than a conclusory statement that parrots and relies on the same assertions from the '659 Patent itself and in *Viertel and Schlecht*, discussed above. *See InTouch Techs., Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (finding that testimony did not articulate reasons to combine and improperly used the challenged patent as a roadmap). Thus, Petitioners have not established that a POSITA would have been motivated to combine *Viertel* with *Schlecht.*

2. Dependent claim 42 is not obvious

Dependent claim 42 recites that "one of said first and second parts (63, 64) forms an integral component of a section of an inside lining (6) of a motor vehicle." That is the same limitation as in claim 32, which was distinguished from the *Viertel* guide rail in Section V.C.3 above.

For this claim, however, the Petition relies only on *Schlecht*. (Petition at 47). Thus, even though it cites only to *Viertel* to satisfy the underlying limitations relating to the guide rail in independent claim 37, the Petition improperly switches to *Schlecht* to say that such guide rail would form an integral component of a section of an inside lining of a motor vehicle. *See Westinghouse Air Brake Tech. Corp. v. Siemens Industry, Inc.*, IPR 2017-02104, Paper 9, at 17-18 (P.T.A.B.

March 13, 2018) (denying institution of asserted ground because proposed combination was unclear where Petition switched identification of which reference would modify the other reference).

Moreover, as explained above, *Schlecht* and *Viertel* relate to different types of guide rails that work completely differently. As one example, *Schlecht* is a "windup" shade (see title) designed for use on a vehicle's rear window, whereas *Viertel* is a pivot lever fan type shade designed for use on a driver side window. Both references have very different mechanisms for expanding and collapsing the shades, and have different design considerations for using and installing the shades. Petitioners provide no explanation, however, as to how or why the guide rail of *Viertel* would be modified and/or combined with *Schlecht* so that it could be an integral part of the inside lining of the motor vehicle. *See Westinghouse Air Brake Tech. Corp. v. Siemens Industry, Inc.*, IPR2017-00584, Paper 12, at 15 (P.T.A.B. July 20, 2017) ("Based on the arguments and cited evidence, the Petition does not address sufficiently the proposed modifications to the prior art teachings that one with ordinary skill in the art would have made . . . .").

For at least the foregoing reasons, the Petition fails to establish a reasonable likelihood of prevailing on Ground 9.

F. Ground 10: Obviousness over *Viertel* in view of *Schlecht* and *Kyburz* for Claims 38 and 40

For Ground 10, Petitioners argue that claims 38 and 40 are obvious over *Viertel* in view of *Schlecht* and *Kyburz*. Petitioners do not present any arguments for claims 38 and 40, instead relying on its arguments concerning the limitations of independent claim 37, from which each of these claims depend. Thus, Ground 10 fails for the same reasons as presented above for Ground 9 with respect to the assertions concerning the underlying independent claim 37. *See Panduit*, 810 F.2d at 1576.

Moreover, Petitioners' suggestion to modify *Viertel* and *Schlecht* in view of *Kyburz* tracks Petitioners' proposed modification of *Viertel* in view of *Kyburz* as discussed above with reference to Ground 6. The motivation to make such a combination, however, is lacking for the same reasons presented above for Ground 6.

For at least the foregoing reasons, the Petition fails to establish a reasonable likelihood of prevailing on Ground 10.

G. Grounds 3, 7, and 11: Obviousness over *Schlecht/Viertel* and *Kyburz* and *Cox*

Grounds 3, 7, and 11 propose various obviousness combinations attacking the validity of claims 25-26, and 39. Petitioners adds *Cox* as an additional

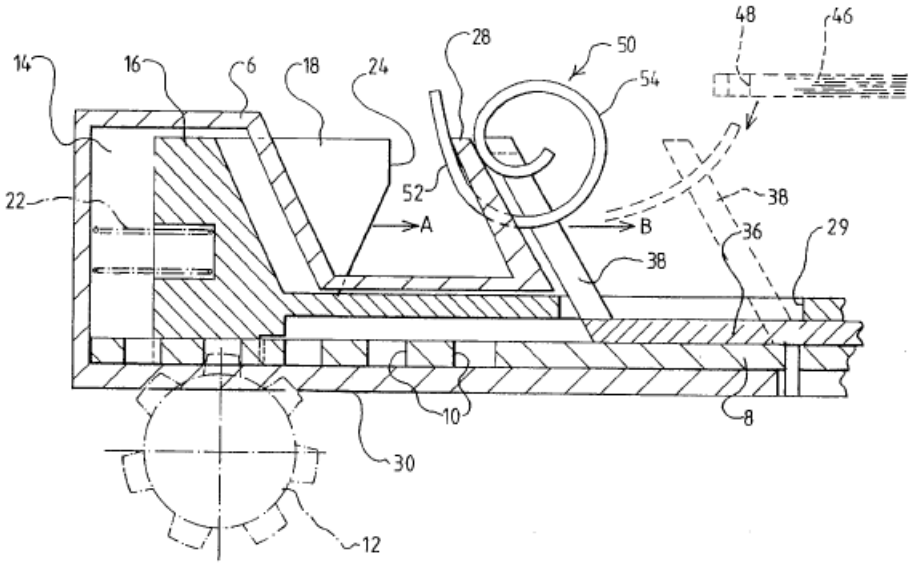
reference to the combinations distinguished above for the claims from which these claims depend. Petitioners' arguments as to claims 25-26 (which depend from claim 24) and claim 39 (which depends from claim 38) each necessarily fail for the same reasons discussed above with respect to the independent claims and intervening dependent claims. *See Panduit*, 810 F.2d at 1576.

Additionally, a POSITA would not be motivated to combine *Cox* with *Schlecht* / Viertel and *Kyburz* in the manner suggested by Petitioners for at least the following additional reason.

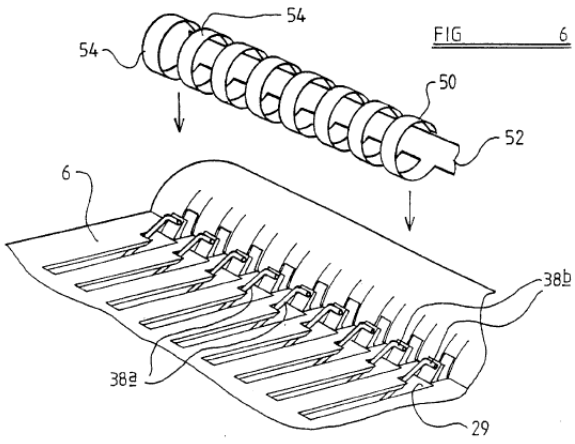
1. *Cox* is in a non-analogous art chosen by Petitioners based on impermissible hindsight

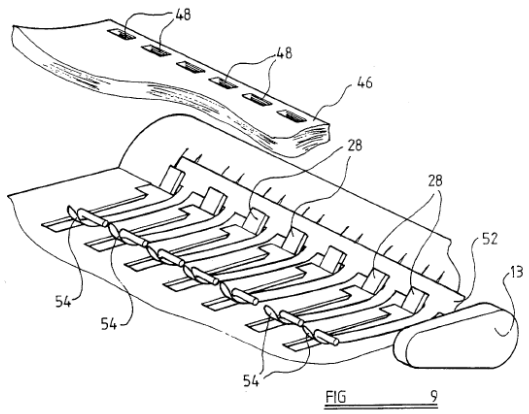
Cox may not be properly combined with *Schlecht* / *Viertel*, and *Kyburz* because the references are in non-analogous arts. As discussed above, *Schlecht* and *Viertel* are both in the automotive field and *Kyburz* is in the home furnishing field. *Cox* is further unrelated in the office services field as it is directed to a binding machine for binding sheets of paper together into book-like form. (Ex. 1011 at 1:7-15). *Cox* may not be properly combined with *Schlecht*, *Viertel*, and/or *Kyburz* because it is (1) not from the same field of endeavor, and (2) it is not pertinent to any problem with which the inventor was involved. *In re Klein*, 647 F.3d at 1348.

Cox's binding machine is shown below:



An exemplary spine of a binding used with the patented machine of *Cox* is shown as element 52 in Figure 6, below, and an exemplary stack of sheets is shown as element 46 in Figure 9 below:





As should be plainly evident, *Cox* describes very different mechanisms to attend to very different design considerations and solve very different problems. For example, a car window shade (of *Viertel/Schlecht*) requires parts and

interconnectable components that would work with the metal body of a car. The design of a car window shade also requires consideration of parameters such as bend axes/curvatures, vibrations, temperature differences, and crash resistance. In contrast, a household curtain (of *Kyburz*) would likely be simply configured for a generally rectangular space without having to collapse and fit within the tightly curved space constraints of a vehicle rear window pane, would have different design and fashion considerations, would have very different vibration and temperature design issues, and would likely have different cost considerations. And in further contrast, a binding for a stack of sheets (e.g., a book) would mainly be concerned with keeping stacks of paper together in a way so that the separate sheets of paper can easily be turned. None of the design issues relevant to car window design, or household curtains, would be remotely pertinent to the design of a book binding. As explained above, such disparate references may not be used to sustain the obviousness rejection under the test for analogous arts articulated by the Federal Circuit. Thus, *Cox* should be considered non-analogous art, which may not be used to sustain this obviousness rejection.

Moreover, Petitioners' selection of *Cox* is a clear case of improper hindsight reconstruction of the patented invention using the '659 Patent claims as a guide. *See St. Jude Med., Inc. v. Access Closure, Inc.*, 729 F.3d 1369, 1381 (Fed. Cir.

2013) ("Even under our 'expansive and flexible' obviousness analysis we must guard against 'hindsight bias' and '*ex post* reasoning.'")(citation omitted); *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351 (Fed. Cir. 2001) ("The genius of invention is often a combination of known elements which in hindsight seems preordained."). Indeed, there is no other logical explanation for a POSITA to look to a bookbinding reference (*Cox*) to select the specifically identified limitations of the claims and add those to the proposed connection mechanisms that would already exist in the proposed combinations of *Schlecht/Viertel* plus *Kyburz*. Rather, this combination of multiple disparate references demonstrates that the combination is based on hindsight reconstruction of the patented claims, which may not be relied upon to support an obviousness rejection of the claims.

For at least the foregoing reasons, the Petition fails to establish a reasonable likelihood of prevailing on Grounds 3, 7, and 11.

H. Grounds 4, 8, 12: Obviousness over *Schlecht/Viertel* and *Houte*

Grounds 4, 8, and 12 propose various obviousness combinations attacking the validity of claims 28 and 41. Petitioners' arguments as to claim 28 (which depends from claim 22) and claim 41 (which depends from claim 37) each necessarily fail for the same reasons discussed above with respect to the independent claims. *See Panduit*, 810 F.2d at 1576.

VI. CONCLUSION

Petitioners have failed to establish a reasonable likelihood of prevailing on the anticipation and obviousness assertions based on any of the asserted grounds. Patent Owner therefore respectfully requests that institution be denied as to each of the asserted grounds.

Respectfully submitted,

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- Patent Owner's Preliminary Response

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