In the Matter of
CERTAIN COAXIAL CABLE CONNECTORS
AND COMPONENTS THEREOF AND
PRODUCTS CONTAINING SAME

Investigation No. 337-TA-650

COMMISSION OPINION

I. INTRODUCTION


The Commission determined not to review the ALJ’s determination that the defaulting respondents violated section 337 with respect to the ‘194 and ‘076 patents and has determined to issue a general exclusion order covering articles that infringe the asserted claims of the ‘194
patent and a limited exclusion order directed to the articles of the defaulting respondents that
infringe the claim of the ‘076 design patent. The Commission has further determined to modify
the ALJ’s construction of two claim terms found in claim 1 of the ‘257 patent and to affirm the
ALJ’s determination that the accused products of the active respondents Fu-Ching and Gem do
not infringe claim 1 of the ‘257 patent for modified reasons, but reverse his conclusion that
complainant’s product meets the technical prong of the domestic industry requirement and that
the four defaulting respondents violate section 337 with respect to the ‘257 patent. Finally, the
Commission has determined to vacate the ALJ’s finding that a domestic industry exists under
section 337(a)(3)(C) with respect to the ‘539 patent and remand to the ALJ for further
proceedings consistent with this opinion. We adopt the ALJ’s ID to the extent it is not
inconsistent with this opinion.

II. BACKGROUND

A. Procedural History

The Commission instituted this investigation on May 30, 2008, based on a complaint
73 Fed. Reg. 31145 (May 30, 2008). The complaint alleged violations of section 337 in the
importation into the United States, the sale for importation, and the sale within the United States
after importation of certain coaxial cable connectors and components thereof and products
containing the same by reason of infringement of claims 1 and 2 of the ‘194 patent, claims 1 and
5 of the ‘257 patent, the claim of the ‘076 design patent, and the claim of the ‘539 design patent.
The complaint named eight respondents, which are identified below along with their current
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status with respect to this investigation.

1. Fei Yu, ZE, Yangzhou ZE, and Yangzhou FTC were found in default by the ALJ in Order No. 8 (Sept. 22, 2008), which was not reviewed by the Commission.

2. Edali Industrial Corp. of Taiwan ("Edali") and Aska Communication Corp. of Pompano Beach, Florida ("Aska") were terminated from this investigation based on a consent order (collectively, "the terminated respondents"). Order No. 5 (July 29, 2008) (unreviewed by the Commission); Order No. 6 (Aug. 27, 2008) (unreviewed by the Commission).

3. Fu-Ching and Gem are the only participating respondents.

Complainant PPC only asserted the '257 patent against the active respondents and the '194 patent against the terminated respondents. Complainant asserted all four patents at issue, the '076, '539, '194, and '257 patents, against the defaulting respondents.

The ALJ held an evidentiary hearing from July 6, 2009 to July 14, 2009, and thereafter received post-hearing briefing from the parties. Fu-Ching and Gem were the only respondents represented at the hearing. On October 13, 2009, the ALJ issued his final ID. The ALJ found a violation of section 337 by the defaulting respondents by reason of infringement of claims 1 and 5 of the '257 patent, claims 1 and 2 of the '194 patent, the claim of the '076 design patent, and the claim of the '539 design patent. ID at 51-85. The ALJ found that the participating respondents Fu-Ching and Gem did not violate section 337 by reason of infringement of claims 1 and 5 of the '257 patent, the only claims asserted against them. ID at 76-77. The ALJ also found that a domestic industry exists in the United States with respect to all of the asserted the patents. ID at 101-10.

On October 30, 2009, PPC filed a petition for review of the ID seeking review of certain claim construction issues in connection with claim 1 of the '257 patent, including the
construction of “fastener means” and the corresponding findings of non-infringement as well as
the construction of “engagement means” and the corresponding findings of non-infringement.
Complainant’s Petition For Review of the Initial Determination on Violation of Section 337 and
Recommended Determination on Remedy and Bond (“PPC Pet.”) at 1. On October 30, 2009, the
Commission investigative attorney (“IA”) filed a petition seeking review of the ALJ’s
construction of “engagement means” in claim 1 of the ‘257 patent, the ALJ’s finding of non-
infringement of claim 1 of the ‘257 patent by the accused products of the active respondents, and
the ALJ’s finding that PPC meets the economic prong of the domestic industry requirement with
respect to the ‘539 design patent. Petition of the Office of Unfair Import Investigations for
Review of the Initial Determination on Violation. The active respondents filed a contingent
petition requesting review of certain findings and conclusions.¹ Joint Contingent Petition of
Respondents Fu Ching Technical Industry Co. Ltd. and Gem Electronics, Inc. For Review of
Initial Determination at 2. On November 9, 2009, PPC, the IA, and the active respondents filed
responses to the petitions for review. Complainant’s Response to Respondents’ and Staff’s
Petitions For Review of the Initial Determination On Remedy and Bond; Response of the Office
of Unfair Import Investigations to Petitions For Review of the Initial Determination on Violation;
Joint Response of Respondents Fu Ching Technical Industry Co. Ltd. and Gem Electronics, Inc.
To the Petitions for Review Filed By Complainant and the Office Unfair Import Investigations.

On December 14, 2009, the Commission determined to review the final ID in part and

¹ Under the Commission’s rules, contingent petitions for review are treated as petitions
for review. 19 C.F.R. § 210.43(b)(3).
requested briefing on the issues under review, remedy, the public interest, and bonding. The Commission determined to review: (1) the findings and conclusions relating to whether a violation of section 337 has occurred with respect to the '257 patent, including the issues of claim construction, infringement, validity, and domestic industry and (2) the ALJ’s finding that PPC has met the domestic industry requirement for the '539 design patent. With respect to the '539 design patent, the Commission requested submissions from the public on the issue of whether a domestic industry exists under section 337(a)(3)(C).

On January 13, 2010, PPC, the active respondents, and the IA filed written submissions addressing the issues on review as well as the issues of remedy, the public interest and bonding. Complainant’s Brief on Issues Under Review and on Remedy, the Public Interest, and Bonding (“PPC Br.”); Respondents Fu Ching Technical Industry Co. Ltd. and Gen Electronics, Inc. Opening Brief on Review (“Resp. Br.”); Brief of the Office of Unfair Imports Investigations on Issues Under Review, Remedy, the Public Interest, and Bonding (“IA Br.”). In response to the Commission’s request for written submissions from the public on the issue of domestic industry, comments were also received from several non-parties including (1) a submission by the law firm of Covington and Burling on behalf of Samsung Electronics America, Inc., Samsung Electronics Co., Ltd., Samsung Semiconductor, Inc., Samsung TelecommunicationsAmericia, LLC, Hewlett-Packard Company, Dell, Inc., Asus Computer International, Inc., Asustek Computer, Inc., and Transcend Information, Inc. (the “Samsung Group”); (2) a joint submission by Google, Inc., Cisco Systems, Inc., and Verizon Communications, Inc.; (3) a submission by Tessera, Inc.; and (4) a submission by the law firm of Hogan and Hartson, LLP. On January 27, 2010, the parties
filed response submissions. Respondents Fu Ching Technical Industry Co. Ltd. and Gem
Imports Investigations on Issues Under Review, Remedy, the Public Interest, and Bonding (“IA
Rep. Br.”); Complainant’s Reply Brief on Issues Under Review and on Remedy, the Public
Interest, and Bonding. Reply submissions were also received from the Samsung Group and from
InterDigital Technology Corp. and InterDigital Communications, LLC. Reply Submission of
Samsung Electronics America, Inc., Samsung Electronics Co., Ltd., Samsung Semiconductor,
Inc., Samsung Telecommunications America, LLC, Hewlett-Packard Company, Dell Inc., Asus
Computer International, Inc., Asustek Computer, Inc., and Transcend Information, Inc. in
Response to the Commission’s December 14, 2009 Notice to Review-in-Part a Final
Determination Finding a Violation of Section 337; Non-Party Interdigital’s Reply Submission
Regarding Question 10 of the December 14, 2009 Commission Notice Seeking Comments.

B. **Patents and Technology at Issue**

The technology at issue relates to so-called “drop” coaxial cable connectors used in the
telecommunications, satellite and cable television industries. ID at 6. Drop connectors are small,
generally cylindrical devices that are used to mechanically and electrically connect a coaxial
cable to an electronic device. *Id.* These coaxial cable connectors are frequently used outdoors
and must be capable of providing a reliable pathway from the coaxial cable to the electronic
device with minimum signal loss, protecting against moisture and shielding against RF leakage,
while being easy to install. *Id.*

The ‘257 patent, entitled “Radial Compression Type Coaxial Cable End Connector,”
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issued on November 28, 1995, to Andrew Szegada. The '257 patent is assigned to PPC. See '257 patent (JX-1). Claims 1 and 5 of the '257 patent are asserted in this investigation.

The '539 design patent, entitled “Closed Compression-Type Coaxial Cable Connector” issued from a continuation application claiming priority to U.S. Patent Application No. 08/910,509, filed on August 2, 1997, which matured into U.S. Patent No. 6,153,830. See '539 patent (CX-3). The '539 design patent was filed on April 28, 2000, and issued on April 17, 2001. Id. The '539 design patent names Noah P. Montena as the sole inventor. Id. The '539 design patent was assigned to, and is currently owned by, PPC. Id.

C. Products at Issue

The products accused of infringement by PPC in this investigation are coaxial cable connectors. Fu Ching manufactures accused connectors abroad for Gem, which is located in the United States. See Complainant's Post Hearing Brief at 15. There are sixty different models of accused Fu Ching and Gem connectors identified in a table on pages 15-17 of the ID. Each connector has two ends, one end having a fastener for connecting to a system component and another end having a locking member for connecting to a coaxial cable. It is undisputed that the attachment between the locking member and the connector body, i.e., the alleged “engagement means,” is the same in all of the accused connectors of the active respondents. The accused connectors of the active respondents have nine different types of fasteners for connecting to a system component, including the F-connector, the BNC connector, and the RCA connector

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2 Only the findings related to the '257 patent and the '539 design patent are the subject of Commission review.
III. VIOLATION DISCUSSION

Under the Administrative Procedure Act, upon review of the initial determination of the ALJ, "the agency has all of the powers which it would have in making the initial decision except as it may limit the issues on notice or by rule." 5 U.S.C. § 557(b) (quoted in Certain Acid-Washed Garments and Accessories, Inv. No. 337-TA-324 (Aug. 6, 1992)); 19 C.F.R. § 210.45(C). In other words, once the Commission decides to review the decision of the ALJ, the Commission may conduct a review of the findings of fact and conclusions of law presented by the record under a de novo standard.

A. The ‘257 Patent

Claim 1 is the only independent claim. It is reproduced below with the disputed claim terms emphasized for clarity:

1. An end connector for connecting a coaxial cable to a system component, said end connector comprising:
   - a connector body comprising a tubular inner post extending from a front end to a rear end, and including an outer collar surrounding and fixed relative to said inner post at a location disposed rearwardly of said front end, said outer collar cooperating in a radially spaced relationship with said inner post to define an annular chamber with a rear opening;
   - fastener means at the front end of said inner post for attaching said end connector to said system component;
   - a tubular locking member protruding axially into said annular chamber through said rear opening; and
   - engagement means circumscribing the interior of said outer collar and the exterior of said locking member, said engagement means coacting in circular interengagement to inseparably couple said locking member to said connector body at a first position and to accommodate limited axial movement of said locking member relative to said connector body between
said first position and a second position, said locking member coacting in a first radially spaced relationship with said inner post when in said first position to accommodate insertion of the rear end of said inner post into an end of said cable, with a central core portion of said cable being received in said inner post through said rear end and an outer annular portion of said cable being received in said annular chamber through said rear opening and between said locking member and said inner post, and said locking member coacting in a second radially spaced relationship with said inner post when in said second position to grip the outer annular portion of said cable therebetween.


a. Claim Construction

Claim construction begins with the language of the claims themselves. Claims should be given their ordinary and customary meaning as understood by a person of ordinary skill in the art, viewing the claim terms in the context of the entire patent. See Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). The patent claim limitations at issue are drafted in means-plus-function format and are governed by 35 U.S.C. § 112, ¶ 6, which states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, ¶ 6. According to the Federal Circuit, “[t]he first step in construing a means-plus-function limitation is to identify the function explicitly recited in the claim.” Asyst Tech., Inc. v. Empak, Inc., 268 F.3d 1364, 1369-70 (Fed. Cir. 2001). The function may only include the limitations contained in the claim language. It is improper to narrow or broaden “the scope of the function beyond the claim language.” Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002).
The next step in the analysis of a means-plus-function claim limitation “is to identify the corresponding structure set forth in the written description that performs the particular function set forth in the claim.” *Asyst*, 268 F.3d at 1369-70. Corresponding structure “must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function.” *Cardiac Pacemakers*, 296 F.3d at 1113.

Section 112 paragraph 6 does not ‘permit incorporation of structure from the written description beyond that necessary to perform the claimed function.’ Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations.

*Asyst*, 268 F.3d at 1369-70 (citations omitted). For example, features that enable the pertinent structure to operate as intended are not the same as corresponding structures that actually perform the stated function. *Id.* at 1371. A means-plus-function analysis is “undertaken from the perspective of a person of ordinary skill in the art.” *Cardiac Pacemakers*, 296 F.3d at 1113. The other claims in a patent “may provide guidance and context for interpreting a disputed means-plus-function limitation, especially if they recite additional functions.” *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233-34 (Fed. Cir. 2001). If another claim in the patent recites a separate and distinct function, “the doctrine of claim differentiation indicates that these claims are presumptively different in scope.” *Id.* However, the Federal Circuit has explained that claim differentiation may not be used to circumvent the requirements of section 112, ¶ 6 but may still play a role during claim construction. *Id.* (internal citations omitted).

The term “fastener means” appears in the claim limitation “fastener means at the front end of said inner post for attaching said end connector to said system component.” The parties
do not dispute that the term “fastener means” is a means-plus-function limitation and that the function is “attaching the end connector to a system component.” ID at 30. The ALJ found that the corresponding structure is a “cylindrical . . . shape, internally threaded, rotatable, and secured to the post of the end connector by way of an inner circular shoulder seated in a circular groove in the outer surface of the post at a location adjacent to the post’s front end.” Id. (emphasis added). In reaching this conclusion, the ALJ reasoned that the “fastener must be able to rotate relative to the connector body so that it may accomplish its attaching function by threading with a reciprocal member of the system component while the connector is terminated to a cable.” ID at 33-34.

Although we agree that the ALJ properly identified the function as “attaching the end connector to a system component,” we find that he erroneously required the corresponding structure to be “rotatable, and secured to the post of the end connector by way of an inner circular shoulder seated in a circular groove in the outer surface of the post at a location adjacent to the post’s front end.” ID at 30.

The specification illustrates the connector 10 in Figure 1 as follows:
The connector 10 has a connector body 22 with a cylindrical fastener 24 at one end for engaging a system component and a tubular locking member 26 at the other end for engaging cable 12. ‘257 patent (JX-1), 3:30-48. The connector body 22 has a tubular inner post 28 with a front end 28a and a rear end 28b. ‘257 patent (JX-1), 3:49-53. The cylindrical fastener 24 is internally threaded at 40 and is provided with an inner circular shoulder 42 seated in a circular groove 44 in the outer surface of the inner post 28 at a location adjacent to the front end 28a to allow rotation of the fastener 24 relative to the inner post 28. ‘257 patent (JX-1), 4:3-9.

PPC argues that the corresponding structure is cylindrical as shown and internally threaded 40 as shown, but that the fastener 24 need not rotate relative to the connector body 22. We agree. As PPC points out, PPC Br. at 11, although it may be preferable to have rotation of the fastener 24 relative to the connector body 22, for example, to avoid twisting the cable 12 when the connector 10 is attached to the system component, it is not necessary to carry out the function of attaching the end connector 10 to the system component. Only the cylindrical internal threading 40 of the fastener 24 is necessary to perform the claimed attachment function. The inner circular shoulder 42 and the circular groove 44 in the outer surface of the inner post 28 allow the fastener 24 to rotate relative to the connector body 22, but do not perform the attachment function. Accordingly, they are not part of the claimed “fastener means.” See e.g., Acromed Corp. v. Sofamor Danek Group, 253 F.3d 1371, 1382-83 (Fed. Cir. 2001) (“Under 35 U.S.C. § 112, ¶ 6, a court may not import into the claim structural limitations from the written description that are unnecessary to perform the claimed function.”).
Moreover, the detailed description of the ‘257 patent clearly associates the internal threading 40 with the function of “attaching the end connector to a system component,” but does not associate the additional components. See ‘257 patent (JX-1), 3:46-49, 4:65-67, 4:3-9. For example, the ‘257 patent states that: “[t]he fastener 24 is internally threaded 40” and “may then be employed to attach the connector to a system component, typically a threaded port 63 or the like.” ‘257 patent (JX-1), 4:3-9, 65-67. Although the ‘257 patent states that the fastener 24 “is provided with” elements 42, 44, and 28 for rotation, there is no clear association between the attachment function and these rotational elements. Id. While the inner circular shoulder 42 and groove 44 may facilitate the attachment function; they do not perform the attachment function and therefore are not part of the corresponding structure.

The language of claim 1 also provides guidance. Claim 1 requires that the “fastener means” be located “at the front end of said inner post.” ‘257 patent (JX-1), 5:67. The ‘257 patent refers to the “front end” of the inner post using reference “28a.” The front end 28a of the inner post 28 is the end surface of the inner post 28 that faces the system component, as shown below:
The only component of the fastener 24 that is located at the front end 28a of the inner post 28 is the internal threading 40. Both the shoulder 42 and groove 44 are located behind the front end 28a of the inner post 28 and therefore do not form part of the claimed "fastener means." Accordingly, we find that the correct corresponding structure for the term "fastener means" is cylindrical in shape and internally threaded.

b. Infringement by the Active Respondents

An accused device literally infringes a patent claim if it contains each limitation recited in the claim exactly. Litton Sys., Inc. v. Honeywell, Inc., 140 F.3d 1449, 1454 (Fed. Cir. 1998). The determination of whether there is literal infringement with respect to a means-plus-function claim limitation consists of finding (i) "identity of claimed function" and (ii) "[e]quivalence between the accused structure and that set forth in the specification[.]"] Minks v. Polaris Indus., Inc., 546 F.3d 1364, 1378 (Fed. Cir. 2008). The function specified in the means-plus-function claim limitation and the corresponding function of the accused device must be identical. Id. "[O]nce identity of function is established, the test for infringement is whether the structure of the accused device performs in substantially the same way to achieve substantially the same result as the structure disclosed in the . . . patent." Id. at 1379. A difference in physical structure, by itself, is not determinative. Id. Indeed, "[e]vidence of known interchangeability between structure in the accused device and the disclosed structure has . . . been considered an important factor." Id.
At issue are all nine Fu-Ching (and Gem) connector types, including F-connectors, BNC connectors, and RCA connectors (male, female, and right angle male for each). All male connectors at issue have a cylindrical structure with a central conductor extending throughout. CPX-47; ‘257 patent (JX-1) Figure 5, element 14’. The central conductor is received by a female connector. CPX-47; ‘257 patent (JX-1) Figure 5, element 63. In all connector types at issue, the inner surface of the cylindrical structure of the male connector engages the outer surface of the female connector.

The ALJ found that only the F-connector male meets the claimed “fastener means” limitation, because it is internally threaded in the same manner as the corresponding structure. ID at 64. The ALJ found that all accused connector types meet the “identity of claimed function,” but that the F-connector female, BNC connector, and RCA connector types are different from the corresponding structure of the claimed “fastener means.” ID at 62-63. The ALJ further found that the accused connector types are not equivalent to the corresponding structure of the claimed “fastener means” because they do not perform the claimed function in the “same way” as the corresponding structure of the ‘257 patent. ID at 63. The ALJ based his determination on the fact that the F-connector female is externally threaded, as opposed to internally threaded like the corresponding structure in the ‘257 patent. Id. He found that the BNC and RCA connectors, which use fastening mechanisms other than threading, require a push or a push and partial twist lock motion to couple and therefore do not perform the function in the same way as the corresponding structure of the ‘257 patent. ID at 63. The Commission determined to review these findings.
The ALJ improperly required the allegedly equivalent fastener types to perform the claimed function in the same way as the corresponding structure from the ‘257 patent. All that is required for a structure to be equivalent for the purposes of literal infringement of a means-plus-function limitation, however, is that it perform the claimed function in substantially the same way as the claimed structure. Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 (Fed. Cir. 2006). In determining means-plus-function equivalence, “the context of the invention should be considered,” and “a rigid comparison of physical structure in a vacuum may be inappropriate . . . .” IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1436 (Fed. Cir. 2000); see also Utah Med. Prods., Inc. v. Graphic Controls Corp., 350 F.3d 1376, 1384 (Fed. Cir. 2003) (“[T]he equivalents analysis under section 112, paragraph 6, proceeds with reference to the context of the invention and the relevant field of art.”). Thus, we must consider whether the external threading of the F-connector female and the push/partial twist locks of the RCA and BNC connector types perform the “fastener means” function in substantially the same way as the internal threading 40 shown in the ‘257 patent.

In considering means-plus-function infringement, the Federal Circuit has held that “when in a claimed ‘means’ limitation the disclosed physical structure is of little or no importance to the claimed invention, there may be a broader range of equivalent structures than if the physical characteristics of the structure are critical in performing the claimed function.” IMS Tech., 206 F.3d at 1436. Citing IMS Tech., the Commission asked the parties in Question 2 of its review notice about the importance of the structure of the “fastener means” to the ‘257 invention. In response to this question, the active respondents and the IA focused on whether the claimed
“fastener means” itself is important to the ’257 invention. See e.g., Resp. Br. at 46 (“The fastener means plays a critical role in connecting the cable to a system component” and “comprises half of the claimed connector’s functionality.”); IA Br. at 15 (“[T]he record demonstrates that the fastener means is essential to the claimed invention”); IA Rep. Br. at 3-4. Our inquiry, however, was whether “there [is] evidence in the record that the structure of the disclosed ‘fastener means’ is important to the invention of claim 1 of the ’257 patent.” Commission Review Notice (Dec. 14, 2009) (emphasis added).

Based on an examination of the ’257 specification, we find that the structure of the claimed “fastener means” is not a focus of the ’257 patent. Indeed, the structure of the fastener 24 is not even mentioned in the “Summary of the Invention” section, and is identified only once throughout the text of the patent. See ’257 patent (JX-1), 4: 3-9. Elsewhere in the patent’s description, the structure is simply referred to generally as “fastener 24.” Moreover, none of the claims of the ’257 patent specify any structure for the “fastener means” or the “system component” to which it connects. Importantly, in at least two passages, the ’257 patent’s description of the “system component” to which the structure of the fastener 24 connects suggests that structures other than the cylindrical internal threading 40 are possible.

- “The fastener 24 may then be employed to attach the connector to a system component, typically a threaded port 63 or the like.” ’257 patent (JX-1), 4:65-67 (emphasis added).
- “The design of the fastener 24 can also be changed to suit differing applications.” ’257 patent (JX-1), 5:53-55.

The ’257 patent focuses on how the locking member 26 interacts with and engages the connector body 22, not how the connector body 22 is fastened to the system component. Accordingly, we
find that the structure of the claimed “fastener means” is of little or no importance to the ‘257 invention and is therefore entitled to a broader range of equivalents. See IMS Tech., 206 F.3d at 1436; see also Applied Med. Res., 448 F.3d at 1335.

Turning to the accused products, the parties do not dispute that each of the alleged equivalent fastener types perform the exact function claimed and achieve substantially the same result as found by the ALJ. ID at 64. The ALJ’s finding that the F-connector male has a structure identical to that of the “fastener means” is also not challenged by any party. Thus, we adopt this finding. The only disputed issue is whether structures of the F-connector female, BNC connector, and RCA connector types are equivalent to the structure disclosed in the ‘257 patent.

Before the ALJ, no one disputed that the F-connector female, BNC connector, and RCA connector types were known prior to the ‘257 invention. See e.g., Respondents’ Joint Proposed Findings of Fact (July 30, 2009) at ¶248-53. Indeed, the testimony of PPC’s technical expert, Dr. Eldering, and Gem’s vice president, Mr. O’Neil, indicates that these types of connectors were generally well-known and were known to be interchangeable prior to the ‘257 invention.6 Eldering Tr. at 1163:9-16, 1129:6-15, 1264:19-165:28; O’Neil Tr. at 1551:5-1553:3. Evidence of known interchangeability between the structure in the accused device and the disclosed structure is an important factor in deciding equivalence. See Al-Site Corp. v. VSI Int’l, Inc., 174
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F.3d 1308, 1315-17 (Fed. Cir. 1999). The broad scope of equivalents and the known interchangeability both suggest that at least some of these structures are equivalents.

We find that the difference between the external threading of the F-connector female and the internal threading of the structure in the '257 patent is insubstantial. Both structures are cylindrical. Moreover, they both attach the connector to a system component in substantially the same way by aligning the center conductor for receipt into the female connector and mechanically coupling complimentary threading through rotation. Eldering Tr. at 1254:9-1257:4. We therefore reverse the ALJ’s finding that the F-connector female is not an equivalent to the structure of the “fastener means.”

We find that the BNC connectors, male and female, are also equivalent to the structure corresponding to the claimed “fastener means” from the '257 patent. Unlike the corresponding structure of the “fastener means” which uses threading for the connection, the BNC connectors use complimentary slots and rails to effect the attachment. The rails on the outer surface of the female connector engage slots in the surface of the male connector. ID at 63; CPX-47 (Model Nos. 302-N2CSTP (Male), 302-2CSTP (Right Angle Male, and 351-2CSTP (Female)); Eldering Tr. at 1257:5-1261:14. Like the cylindrical threading in the '257 patent, the BNC connectors are cylindrical and align a center conductor for receipt into the female connector and require a rotational push to effect the mechanical engagement between the outer surface of the female connector and the inner surface of the male connector. Id. Thus, the structure of the BNC connectors performs the claimed function in substantially the same way as the structure disclosed in the '257 patent. We also find that the differences between the structure of the “fastener
means” and the BNC connectors are insubstantial in light of the similarities in their operation. This is especially true in light of the minimal importance of the structure of the “fastener means” to the ‘257 patent invention and the evidence that these connectors are interchangeable substitutes (discussed supra). We therefore reverse the ALJ’s determination that the BNC connectors do not meet the “fastener means” limitation.

Additionally, we note that claim 1 does not specify the structure of the system component to which the claimed “fastener means” attaches. Because various types of connectors, e.g., F-connectors and BNC connectors, were known and available at the time of invention, we find that one of ordinary skill in the art would have understood that the structure of the “fastener means” depends on the type of connection used by the system component. See Ai-Site, 174 F.3d at 1316 (“This . . . constitutes sufficient evidence . . . that persons of ordinary skill in the art consider glue an equivalent structure to those disclosed in the specification . . . .”). Thus, we find that the F-connector and BNC connector types (male, female, and right angle male) attach to a system component in substantially the same way (that is, a male connector with an internal coupling structure (e.g., internal threading or slots) is rotated onto a female connector with an external and complimentary coupling structure (e.g., external threading or rails) to maintain the attachment) to achieve the same result as the claimed “fastener means.”

We agree with ALJ, however, that the RCA connectors are not equivalent to the

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7 The ALJ found that a person of ordinary skill in the art would have a bachelor of science degree in engineering and at least three years of experience in the cable and telecommunications industry relating to the design, manufacture, and utilization of coaxial cable connectors in communications systems. ID at 27. We adopt this finding.
corresponding structure of the “fastener means.” Unlike the F-connector and BNC connector types and the structure disclosed in the ‘257 patent, the RCA connectors do not use mating complimentary structures, such as pins/slots or threading, for attachment. Eldering Tr. at 1261:15-1264:1. Nor do the RCA connectors require rotation to attach the mating connectors. Instead, the RCA connectors rely solely on friction between the outer surface of the female connector and the inner surface of the male connector to effect attachment. Eldering Tr. at 1262:1-15; CPX-47 (Model Nos. 100-2CSTP (Male), 101-2CSTP (Right Angle Male), and 125-2CSTP (Female)). Therefore, the mating RCA connectors can be attached solely by pushing them together in the axial direction. We find these differences between the RCA type of connection and the corresponding structure of the ‘257 patent to be substantial. We therefore affirm the ALJ’s determination that the RCA connectors do not meet the “fastener means” limitation because they do not perform the claimed attachment function in substantially the same way as the claimed “fastener means.”


a. Claim Construction

The term “engagement means” appears in the claimed limitation:

engagement means circumscribing the interior of said outer collar and the exterior of said locking member, said engagement means coacting in circular interengagement to inseparably couple said locking member to said connector body at a first position and to accommodate limited axial movement of said locking member relative to said connector body between said first position and a second position . . .

‘257 patent (JX-1), 6:4-24. The parties do not dispute that the claimed “engagement means” is a
means-plus-function limitation. Nor do they dispute that the function of the engagement means is to “to inseparably couple said locking member to said connector body at a first position and to accommodate limited axial movement of said locking member relative to said connector body between said first position and a second position,” as the ALJ found. ID at 35. The parties do, however, dispute the meaning of the term “inseparably couple.” In addition, they dispute whether the ALJ correctly identified the structure that corresponds to the “engagement means.”

i. “Inseparably Couple”

The ALJ construed “inseparably couple” to mean that the “locking member does not separate or detach from the connector body prior to and during installation.” ID at 48. The ALJ rejected a construction proposed by PPC and the IA that would give this term a meaning that only pertains to “normal and ordinary forces” that occur during shipping, handling, and installation. ID at 42-43. The ALJ found that various passages in the specification of the ‘257 patent indicate that the “inseparably couple” language is not restricted to “normal and ordinary forces.” ID at 43 (citing ‘257 patent (JX-1), 1:37-43, 2:7-11). The ALJ also cited the applicant’s amendment of “integrally couple” to “inseparably couple” during the prosecution of the ‘257 patent. ID at 48.8

8 The ALJ also found that collateral estoppel applies to the construction of “inseparably couple” because of a prior claim construction set forth in a Summary Judgment Order in John Mezzalingua Associates, Inc., d/b/a PPC v. Thomas & Betts Corporation, Case No. 01-CV-6752 in the Southern District of Florida. ID at 38-41 (citing Pfaff v. Wells Electronics, Inc., 5 F.3d 514, 518 (Fed. Cir. 1993)). The ALJ did not specify whether collateral estoppel applies against all parties in the investigation, including the IA, or just PPC. In the district court’s Summary Judgment Order, the judge construed “inseparably coupled” to mean “that the locking member is not completely removed or separated from the connector body prior to and during installation,” and found that the accused product does not infringe because its locking member is detachable from the connector body prior to and during installation. See Summary Judgment Order at 17.
We agree with the ALJ’s construction of “inseparably couple” to mean that “the locking member does not separate or detach from the connector body prior to and during installation” because it is consistent with the ordinary meaning of the claim language, the specification including the discussion of the prior art, and the prosecution history. The language of the claim does not require the qualifying language, “normal and ordinary forces.” The ‘257 specification states that: “an objective of the present invention is the provision of an improved radial compression type end connector wherein the outer sleeve component remains at all times integrally connected to the inner post, both prior to and during installation.” ‘257 patent (JX-1), 2:7-12 (emphasis added). The ALJ correctly concluded that this general characterization of the “present invention” does not support the inclusion of language limiting “inseparably” to normal and ordinary forces.

The IA argues that ALJ’s construction is incorrect, relying on a passage in the specification at column 5, lines 37-43:

In all cases, the coaction of shoulder 50a with groove 52 serves to retain the connector body and locking member in an assembled state during storage, handling, and installation on a cable end. This eliminates any danger of the locking member being dropped or otherwise mishandled during the assembly.

‘257 patent (JX-1), 5:37-43. We find that this passage actually contradicts the IA’s position by indicating that coupling is maintained “in all cases.” We agree with the ALJ that the language “in all cases” and “at all times” (‘257 patent (JX-1), 2:10) is inconsistent with the IA’s view that

This order was affirmed, per curiam, by the Federal Circuit in John Mezzalingua Associates, Inc. v. Thomas & Betts Corp., 54 Fed. Appx. 697, 2003 WL 136095 (Fed. Cir. 2003) (unpubl.).
the construction should be limited to normal and ordinary forces. In fact, the ‘257 specification does not suggest that it is even possible for the locking member 26 to be disengaged from the connector body 22.

The IA argues that the discussion of the problems associated with the prior art in the ‘257 patent suggests that the solution is to prevent disengagement of the locking member from the connector body during normal handling. The discussion of the prior art, however, does not suggest the types of forces under which coupling should be maintained. At most, the discussion of the prior art indicates that the problems of misplacing, losing, dropping, or mishandling components can be overcome by maintaining coupling prior to and during installation. See ‘257 patent (JX-1), 1:10-2:21. We find this description of the prior art to be wholly consistent with the ALJ’s construction of “inseparably couple.”

We agree with the ALJ that the prosecution history also supports his construction. During prosecution, the applicant for the ‘257 patent amended the claim language “integrally couple” to “inseparably couple” in response to a prior art rejection issued by the United States Patent and Trademark Office (“USPTO”) based on U.S. Patent No. 4,408,822 to Nikitas (“the Nikitas patent”). ‘257 prosecution history (JX-2) at 108, 136. In distinguishing the amended claim, the applicant explained that the Nikitas patent is plagued by the difficulties associated with detachable nut members which are frequently dropped and sometimes lost during assembly procedures and that the ‘257 “invention solves this problem by inseparably coupling tubular locking member 26 to the outer collar 30 of the connector body.” Id. at 129 (emphasis in original). Based upon this prosecution history, the ALJ was correct that the word “inseparably”
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requires “something more than” the word “integrally” and that this amendment emphasized that the claimed invention is a one-piece unit. ID at 48.

Finally, we note that the construction set forth by the ALJ is consistent with the construction set forth in a Summary Judgment Order in John Mezzalingua Associates, Inc., d/b/a PPC v. Thomas & Betts Corporation, Case No. 01-CV-6752, in the Southern District of Florida, which the Federal Circuit affirmed per curiam without an opinion. John Mezzalingua Assoc. v. Thomas & Betts Corp., 54 Fed. Appx. 697 (Fed. Cir. 2003). We find no reason to deviate from this claim construction.

ii. Structure of “Engagement Means”

The ALJ found that the structure corresponding to the “engagement means” is “a first radially protruding circular shoulder (50a) having a generally perpendicular rear face and an inclined ramp-like front face [that] circumscribes the exterior locking member (26) and coacts in circular interengagement with an internal groove (52) circumscribing the interior of the outer collar (30).” ID at 37-38. In reaching this conclusion, the ALJ found that the inclined face 54 of the first shoulder 50a, shown in the figure below, accommodates movement of the locking member 26 relative to the connector body 22, and the generally perpendicular face 56 resists movement, citing the ‘257 patent (JX-1) at 4:22-25, 5:52-54. ID at 37.
Addressing a construction proposed by the active respondents, the ALJ found that snap engagement is not necessary to “inseparably couple” or to “accommodate limited axial movement.” *Id.* The Commission determined to review the ALJ’s identification of the corresponding structure.

The engagement means (*i.e.*, 50a, 50b, and 52) is shown in the following portion of Figure 2, which shows the locking member 26 disengaged from the connector body 22, and Figure 4, which shows the locking member 26 engaged with the connector body 22:
The specification explains that:

Engagement means serve to integrally couple the locking member 26 to the connector body 22 for limited axial movement . . . between a first "open" position . . . and a second "clamped" position . . . [and] preferably comprises first and second radially protruding circular shoulders 50a, 50b on the locking member 26, each shoulder being configured and dimensioned to coact in snap engagement with an internal groove 52 . . .

'257 patent (JX-1), 4:12-31. The claimed function of the "engagement means," as correctly identified by the ALJ, is "to inseparably couple said locking member to said connector body at a first position and to accommodate limited axial movement of said locking member relative to said connector body between said first position and a second position." ID at 35.

We agree with the ALJ that the corresponding structure must include the shape of the first shoulder 50a as having a generally perpendicular rear face 56 and an inclined ramp-like front face 54, as shown in Figure 3 below, because the '257 specification clearly associates these shapes with the claimed functions.
For example, the ‘257 specification states that the “front faces 54 accommodate movement of the shoulders out of the groove 52 . . . whereas the rear faces 56 resist movement of the shoulders out of the groove 52 in a rearward axial direction.” ‘257 patent (JX-1), 4:30-31. The forward axial direction (F) and the rearward axial direction (R) are shown above in Figure 3.  

We find that the perpendicular face 56 of the shoulder 50a also inseparably couples the locking member 26 to the connector body 22 in the first “open” position (Figure 4), and the ramp-like inclined face 54 of the shoulder 50a accommodates axial movement of the locking member 26 relative to the connector body 22 in the forward direction (F) when in the first “open” position (Figure 4).

We are not persuaded by PPC’s argument that the function of the inclined ramp-like front face 54 is solely to allow movement of shoulder 50a out of the groove 52, but not to “accommodate . . . axial movement,” as claimed. These two functions undoubtedly overlap, and the inclined ramp-like front face 54 performs them both. In other words, by allowing movement

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9 The forward axial direction (F) points toward the end of the connector 10 that attaches to the system component, whereas the rearward axial direction (R) points toward the end that receives the cable 12.
of the first shoulder 50a out of the groove 52, the inclined ramp-like face 54 is accommodating axial movement of the locking member 26. Therefore, the ALJ’s identification of the inclined ramp-like front face 54 as part of the corresponding structure for the engagement means is correct.

However, the ALJ’s identification of corresponding structure is incomplete because it omits the second shoulder 50b. The ALJ’s construction correctly identifies the perpendicular rear face 56 of the first shoulder 50a for performing the “inseparably coupl[ing]” function and the ramp-like inclined surface 54 of the first shoulder 50a for performing the “accommodating . . . axial movement between the first position and a second position.” But the ALJ’s construction does not identify any structure that limits the “axial movement,” as required by the claim language, which recites “accommodate limited axial movement . . . between said first position and a second position.”

Figures 4 and 5 below show the claimed “first position” and “second position” of the locking member 26, respectively:
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The first shoulder 50a inseparably couples the locking member 26 and, by implication, does not allow for movement rearward (R) axial movement, i.e., to the right in Figure 4. The ‘257 patent describes axial movement in the forward direction (F), i.e., between first open position (Figure 4) and second clamped position (Figure 5). In our view, without the second shoulder 50b, the locking member 26 would be able to move in the forward axial direction (F) relative to the connector body 22 beyond the second position, until it contacts the end of the outer collar 30. See ‘257 patent (JX-1), Figure 5. In other words, without the second shoulder 50b, the structure would not “accommodate limited axial movement of said locking member relative to said connector body between said first position and a second connector body.”

We conclude that the second shoulder 50b is the structure that limits forward axial movement to the second position. Indeed, the second shoulder 50b is the only structure set forth in the ‘257 specification that does not render the claim term “limited” superfluous. Merck & Co., Inc. v. Teva Pharms. 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.”).
Moreover, the second shoulder 50b is associated with limiting axial movement of the locking member in the forward direction (F) in a number of passages:

- "Final locking in the clamped position occurs when the shoulder 50b coacts in snapped engagement with the groove 52." '257 patent (JX-1), 4:59-62.
- "The shoulder 50b coacts with groove 52 to retain the locking member in its final clamped position." Id. at 5:43-44.

We find that the “clamped position” is the second position of claim 1. Based on the description in the ‘257 specification as accompanied by the figures, we conclude that without the second shoulder 50b, axial movement of the locking member 26 in the forward direction (F) would not be “limited.” In fact, the specification describes the second “clamped” position by reference to “when the [second] shoulder 50b coacts in snapped engagement with the groove 52.” ‘257 patent (JX-1), 4:59-62. Thus, without the second shoulder 50b, the claimed connector would not have a “second position.”

We further conclude that the shape of the second shoulder 50b is not a required part of the corresponding structure. The second shoulder 50b does not engage the groove 52 until the locking member 26 is moved axially to the second “closed” position, at which point, the second shoulder 50b must only limit axial movement in the forward direction (F). Thus, we find that the only structural requirement of the second shoulder 50b is that it be a radially protruding circular shoulder on the locking member 26 spaced apart from the first shoulder 50a and be configured and dimensioned to coact in circular interengagement with an internal groove 52 circumscribing the interior of the outer collar 30.

Finally, we do not agree with the IA that inclusion of the second shoulder 50b effectively
imports a limitation from dependent claim 4. Claim 4 states that the “engagement means
additionally coacts to fix said locking member at said second position.” The functional language
of claim 4 incorporates additional structural limitations for the second shoulder 50b. While the
“engagement means” of claim 1 requires the second shoulder 50b to limit axial movement, which
can be done by a variety of shapes, the “engagement means” of claim 4 requires the locking
member to be fixed at the second position, which is done by the disclosed perpendicular face 56
of the second shoulder 50b. See ’257 patent (JX-1), 4:28-30 (“[T]he rear face 56 resist
movement of the shoulders out of the groove 52 in a rearward axial direction (arrow “R” in FIG.
3)” (emphasis added)). Thus, the difference between claims 1 and 4 is that claim 1 requires the
second shoulder 50b to stop or limit the movement of the locking member 26 in the forward axial
direction (F), but claim 4 additionally requires the second shoulder 50b to prevent the locking
member 26 from moving in the rearward axial direction (R) back toward the first open position.

For the reasons set forth above, we modify the ALJ’s determination relating to the
corresponding structure of the “engagement means” and conclude that it is: a first and second
axially spaced, radially protruding, circular shoulders 50a and 50b circumscribing the exterior of
the locking member 26, each shoulder being configured and dimensioned to coact in circular
interengagement with an internal groove circumscribing the interior of the outer collar 30, and
where the first radially protruding circular shoulder has a generally perpendicular rear face and an
inclined ramp-like front face.

b. **Infringement by the Active Respondents**

The ALJ found that the accused Fu-Ching/Gem connectors do not meet the “engagement
means” element. First, the ALJ found that the accused connectors have a different structure than what is required because the accused connectors do not have a “circular shoulder” that protrudes from the exterior or surface of the locking member with a “generally perpendicular face and an inclined ramp-like front face.” ID at 68-69. In addition, the ALJ also found that the accused connectors do not perform the claimed functions of (1) “inseparably coupl[ing]” the locking member to the connector body and (2) “accommodat[ing] limited axial movement of said locking member relative to said connector body between said first position and a second position.” ID at 76.

As to the first function, the ALJ found that the locking member of the accused connectors can be, and is, separated from the connector body under certain circumstances. ID at 73. The ID states that the accused connectors separate “inadvertently and occasionally under normal and ordinary forces during shipping and storage, and during installation . . .” Id. The ALJ also found that there is a lack of evidence that the accused connectors perform the claimed function “accommodat[ing] limited axial movement.” ID at 75-76 (citing Oswald, Tr. at 956-58, 979; Eldering, Tr. at 1089-1102). The Commission determined to review to consider inter alia whether “the normal intended use of the accused connectors of the active respondents involve separation of the locking member from the connector body” and whether this affects the infringement. Commission Review Notice (Dec. 14, 2009).

Upon review, we find the ALJ properly applied the correct construction of “inseperably couple” to the connectors of the active respondents. Although the normal intended use of the accused connectors does not typically involve separation of the locking member from the
connector body, we conclude that the locking member is nevertheless separably coupled to the connector body. We reject the arguments made by PPC and the IA because they read the term “inseparably” out of the claim. They argue that because separation is not reported in 99% of the accused connectors, the accused connectors meet the “inseparably couple” limitation 99% of the time. The fact that these accused connectors remain coupled, however, does not mean that they are “inseparably” coupled. On the contrary, the reported 1% of the accused connectors that separate under normal circumstances tends to show that, even if 99% of the accused connectors remain coupled, they are not “inseparably” coupled. The problem with the argument made by PPC and the IA is that it replaces a determination of whether the locking member is “inseparably couple[d]” to the connector body with a determination whether the connector is reported separated, i.e., whether it is coupled at all. This view renders the term “inseparably” superfluous.

The ALJ properly relied on the testimony of Gem’s vice president, William O’Neil, and Fu Ching’s vice president, Jessie Hsia, that the locking members of the accused connectors are separable from the connector body. See O’Neil Tr. at 1508-18, 1522; Hsia Tr. at 1357-59. Mr. O’Neil and Ms. Hsia both testified that these accused connectors can be manually separated and that these connectors separate by themselves during normal conditions, e.g., during shipping or installation, and that these locking members can be simply “popped” back on the connector bodies. O’Neil Tr. at 1508-10; Hsia Tr. at 1357-59. We find the ALJ’s conclusion to be consistent with Hilgraeve Corp. v. Symantec Corp., 265 F.3d 1336 (Fed. Cir. 2001), which requires that infringement be determined under normal operating conditions. Accordingly, we affirm the ALJ’s conclusion and adopt all of the ALJ’s findings on this issue.
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We further affirm the ALJ's findings that the accused connectors of the active respondents do not meet the "accommodating limited axial movement" language of the claim and do not have a structure identical or equivalent to the corresponding structure of the '257 patent for the reasons set forth in the ID. More specifically, these connectors lack the structure of 50a, i.e., (1) the protruding shoulder, (2) its generally perpendicular rear face, and (3) its inclined ramp-like face. Oswald, Tr. at 949, 955-56, 958-959, 976-81, 1003-05, 1013-14; CDX 37; CDX-38. Moreover, we agree with the ALJ that the accused products do not have an equivalent structure because the differences are substantial.¹⁰

Regarding the addition of the second shoulder 50b to the construction of "engagement means," the accused connectors also lack this structure or its equivalent for the same reasons that they lack the structure for the first shoulder 50a. That is, the outer surface of the structure of the accused connectors is entirely smooth without any protruding shoulders. ID 66-70; CDX-37; CDX-38. Thus, for this additional reason, we find no infringement by the active respondents.

c. Infringement of the '257 Patent by Defaulting Respondents

PPC argues that the defaulting respondents accused connectors (FY-039 and FY-040B) have a second shoulder, so the ALJ's findings that they infringe would not be affected by

¹⁰ We conclude that the ALJ's findings of non-infringement are sustainable under any of the constructions of "engagement means," including PPC's. Because the accused products do not perform the claimed function, i.e., they are not "inseparably" coupled and do not "accommodate limited axial movement," these products do not infringe. Moreover, even under PPC's identification of corresponding structure (e.g., PPC Pet. at 14), the accused products do not infringe because they lack the protruding circular shoulder 50a with the generally perpendicular rear face 56 and do not have an equivalent. ID 66-70; CDX-37; CDX-38; Oswald Tr. at 955-59, 976-77, 1002-05, 1014.
inclusion of the second shoulder 50b. PPC Br. at 38 (citing CDX-29; CPX-33, CPX-34; CPX35; CPX-36; CX-228; CX-229; CX-230; CX-231). We agree with PPC that the FY-039 and FY-040B accused connectors have a structure identical to the second shoulder 50b, and therefore infringe. CDX-29; CPX-33, CPX-34; CPX35; CPX-36; CX-228; CX-229; CX-230; CX-231. Moreover, the ALJ found that substantial, reliable, and probative evidence indicates that all other claim elements are met by the accused connectors of the defaulting respondents. ID at 77-80. We therefore find that substantial, reliable, and probative evidence exists in the record to find infringement, even with the modified construction of “engagement means.”


We agree with the ALJ that the active respondents failed to prove the asserted claims of the ‘257 patent invalid. The patent examiner’s reasons for allowance indicate that none of the prior art references teach “a connector for connecting a coaxial cable to a system component as claimed, particularly having engaging means circumscribing the interior of the outer collar and the exterior of the locking member, the engaging means coacting in circular interengagement.” ‘257 prosecution history (JX-2) at 138. We agree with the USPTO that these references do not teach the claimed “engagement means,” and we agree with the ALJ, the IA, and PPC that the active respondents have not proven otherwise.

The prior art Nikitas patent’s threaded collar 44 shown in Figures 1 through 5 does not meet the inseparably coupled “locking member” limitation. See ‘257 prosecution history (JX-2) at 102 (Figure 1 showing collar 44 separated from connector body during installation). Indeed, the Nikitas patent suggests that the threaded collar 44 is designed for frequent disconnection and
reconnection. *Id.* at 102 (column 1, lines 13-17). Because re-connection of the cable 12 is achieved, in part, by the connection of the collar 44 to the connector body, the collar 44 must not be “inseparably coupled.” The Nikitas patent also fails to teach the corresponding structure of the “engagement means.” *See Id.* at 102-03. Contrary to the structure of the ‘257 invention, the Nikitas patent uses the threading on the collar 44 to effect the engagement with the connector body, which is quite different from the asserted claims of the ‘257 invention. The Nikitas patent does not teach (1) a first radially protruding circular shoulder (2) having a generally perpendicular rear face (3) and an inclined ramp-like front face (4) that coacts in circular interengagement with an internal groove circumscribing the interior of the outer collar, and (5) a second radially protruding circular shoulder as required by claim 1. Neither U.S. Patent No. 4,614,390 (Baker) nor U.S. Patent No. 4,834,675 (Samchisen), teach this feature lacking from the Nikitas patent. Accordingly, we affirm the ALJ’s finding that the active respondents failed to prove invalidity of the asserted claims of the ‘257 patent.

4. Domestic Industry for the ‘257 Patent

In order to prove a violation of section 337 in a patent-based action, a complainant must demonstrate that a domestic industry exists or is in the process of being established. 19 U.S.C. § 1337(a)(2). *See Certain Microsphere Adhesives, Process For Making Same, And Prods. Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, USITC Pub. 2949, Comm’n. Op. at 8 (Jan. 1996). The domestic industry requirement is set forth in its entirety in sections 337(a)(2) and (3):
(2) Subparagraphs (B), (C), (D), and (E) of paragraph (1) apply only if an industry in the United States, with respect to the articles protected by the patent, copyright, trademark, maskwork, or design concerned, exists or is in the process of being established.

(3) An industry in the United States shall be considered to exist if there is in the United States, with respect to articles protected by the patent . . . concerned —

(A) significant investment in plant and equipment;

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(2) and (3). The Commission has divided the domestic industry requirement into an economic prong (which requires certain activities) and a technical prong (which requires that these activities relate to the intellectual property being protected). 19 U.S.C. §1337(a)(2) and (a)(3); see, e.g., Certain Variable Speed Wind Turbines and Components Thereof, Inv. No. 337-TA-376, USITC Pub. 3003, Comm’n Op. at 14-17 (Nov. 1996).

In light of our modified claim construction for the term “engagement means,” we consider whether complainant PPC’s product meets the technical prong of the domestic industry requirement for the ‘257 patent. As set forth above, the correct structure for the “engagement means” is: a first and second axially spaced, radially protruding, circular shoulders 50a and 50b circumscribing the exterior of the locking member 26, each shoulder being configured and dimensioned to coact in circular interengagement with an internal groove circumscribing the interior of the outer collar 30, and where the first radially protruding circular shoulder has a generally perpendicular rear face and an inclined ramp-like front face. In its notice of review, the
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Commission asked the parties: “[i]f the second shoulder 50b is part of the corresponding structure [of the ‘engagement means’], how does this affect the ALJ’s finding[] on the issue[] of . . . domestic industry . . . ?” PPC argues that “additional evidence [would be required] to support the ALJ’s finding on domestic industry.” PPC Br. at 38. PPC admits that its CMP connector does not have a structure identical to the second shoulder 50b, but that it would prove the CMP connector has an equivalent structure. Id. Initially, the active respondents acknowledged that PPC’s domestic industry product, i.e., the CMP connector, includes the second shoulder 50b. Resp. Br. at 64. More recently, however, the active respondents stated that they were “mistaken” and that the CMP connector “has a smooth surface where the second shoulder should be.” Resp. Rep. Br. at 19 (citing CX-226).

As an initial matter, we note that the Commission gave PPC ample notice that we were considering whether to add the second shoulder 50b to the corresponding structure of the “engagement means” and specifically asked PPC to address domestic industry under this modified claim construction. Besides the mere allegation that PPC would prove that its connector has an equivalent structure, PPC failed to put forth any argument or evidence regarding what the alleged equivalent is and failed to explain what evidence or testimony it would provide if the record were reopened. PPC’s generalized assertion is insufficient to warrant remand.

Further, we find sufficient evidence in the record to conclude that the PPC’s CMP connector does not have a structural equivalent of the second shoulder 50b. CX-12; CX-226; CPX-45; CPX-31; CX-211. Complainant PPC’s CMP connector has a first shoulder that is axially spaced apart from a stop that engages the end of the connector body when the cable is
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attached. Id.; CPX-97. Both the first shoulder and the end stop protrude radially from the outer surface of the locking member. CX-226. There are several ridges formed in the surface of the locking member between the first shoulder and the end stop. Id. The purpose of these ridges is to “eliminate moisture leakage that can cause failures.” CX-12 at 15. When the locking member of the CMP is moved to the second closed position, the first shoulder is moved out of the groove in the connector body and the ridges are moved axially into the connector body beyond the groove. CPX 97; CX-211; CX-226. The ridges do not engage the groove when the locking member is in the second position. Nor does the end stop engage the groove or coact in circular engagement. The end stop contacts the end of the connector body. The groove in the connector body is not engaged by any structure on the locking member when in the second position. Id.

Moreover, as the active respondents point out in their recent submission, the evidence cited by PPC “demonstrates that the surface of the CMP locking member at the second shoulder location is entirely smooth.” Resp. Rep. Br. at 19. We agree that there is an absence of structure on the exterior of the locking member where the groove is located when the locking member is in the second position and thus there is no “circular interengagement,” as required by the claim language. Because (1) the groove on the connector body is not engaged by any structure of the locking member when in the second position and (2) the locking member is entirely smooth where the claim requires a second protruding shoulder, we find that there is no structure to consider as an equivalent to the second shoulder 50b of the ‘257 patent. In other words, the CMP connector does not contain a structure identical or equivalent to the ‘257 patent’s “engagement means.” We therefore reverse the ALJ’s finding that PPC meets the domestic industry
requirement for the ‘257 patent. Because PPC does not meet the domestic industry requirement, we find no violation of section 337 with respect to the ‘257 patent by any of the respondents.

B. The ‘539 Patent: Domestic Industry

We also examine whether PPC has satisfied the domestic industry requirement with respect to the ‘539 design patent. As noted above, the statute includes technical and economic prongs. The evidence and argument PPC presented on the economic prong raise an important issue of statutory interpretation, as explained below.

The ALJ found that complainant PPC meets the technical prong of the domestic industry requirement for the ‘539 design patent, because PPC’s licensee, [[ ]] makes a product called the [[ ]] that practices the ‘539 design patent. ID/RD at 109-10. The ALJ also found that PPC receives royalties from [[ ]] connector sales pursuant to its license agreement with [[ ]]. ID/RD at 110 (citing Malak, Tr. at 185:20-186:1, 190:1-192:13). No party petitioned for review of these findings.

The ALJ also found that complainant PPC satisfied the economic prong of the domestic industry requirement. ID/RD at 114. In reaching this conclusion, the ALJ found that the “evidence shows PPC has made a substantial investment in enforcement of the ‘539 design patent, as well as some investment in research and development and licensing.” ID/RD at 113. Specifically, he relied on evidence relating to PPC’s [[ ]] in litigation expenses directed to enforcing the ‘539 design patent against [[ ]]. ID/RD at 112-13. The ALJ also “inferred that at least some portion of Mr. Noah Montena’s [the
inventor of the '539 design patent] salary, plus his time, effort and use of PPC’s equipment and facilities, is attributable to his development of the design that became the ‘539 [design] patent.”

Id. (citing Montena, Tr. at 395, 400).

The IA petitioned for review of the ALJ’s findings with respect to the economic prong. No other party sought review, because the ‘539 design patent was only asserted against defaulting respondents. The IA argued that the only activity related to the ‘539 design patent is PPC’s litigation with [] and that this is insufficient to meet the economic prong of the domestic industry requirement. Recognizing the importance of the issue, the Commission determined to review and asked both the parties and the public to address a series of questions bearing on the domestic industry requirement and the meaning of the statute.\footnote{11}

To establish the economic prong of the domestic industry requirement, PPC relies predominantly on its litigation with [ ]]. PPC admits that it did not present evidence that it produces connectors that satisfy the technical prong for the ‘539 design patent. PPC Br. at 47. PPC further admits that it does not rely on its investment in plant and equipment or its employment of labor or capital to satisfy the economic prong for the ‘539 design patent. Id. Moreover, PPC admits that it did not present any evidence relating to its licensee [] investment in plant and equipment or employment of labor or capital in the United States with respect to the licensed [] connector. Id. Instead, PPC relies solely on its own activities to satisfy the economic prong, arguing that the expenses

\footnote{11 As noted above, the Commission received responses from the parties and the public, representing a number of viewpoints and proposing a range of approaches to the issue.}
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associated with the [[ ] ] litigation constitute a substantial investment in the exploitation of the ‘539 design patent through licensing under section 337(a)(3)(C).

PPC sued [[ ] ] for patent infringement [[ ]], after the parties conducted discovery and a full trial, the jury returned a verdict for PPC that [[ ] ] infringed the ‘539 design patent and that the patent was not invalid. Judgment was entered and damages in the amount of $1,350,000 were awarded, and, [[ ] ], a permanent injunction was entered against [[ ] ]. See Complaint, Appendix I. According to testimony presented by PPC, it spent [[ ] ] in litigation expenses directed to enforcing the ‘539 design patent against [[ ] ]. ID/RD at 112-13.

1. Licensing Activities Under Section 337(a)(3)(C)12

PPC’s licensing argument raises the question of whether litigation activities can constitute “exploitation” under section 337(a)(3)(C). We conclude that patent infringement litigation activities alone, i.e., patent infringement litigation activities that are not related to

12 Commissioners Okun finds that the plain language of the statute contemplates that “exploitation” could include activities beyond engineering, research and development, and licensing. However, the facts of this case only present the issue of whether PPC’s litigation activities are related to licensing, and therefore she declines to place limits on what might constitute “substantial investment in [the] exploitation” of a patent under other factual scenarios.
engineering, research and development, or licensing, do not satisfy the requirements of section 337(a)(3)(C). However, litigation activities (including patent infringement lawsuits) may satisfy these requirements if a complainant can prove that these activities are related to licensing and pertain to the patent at issue, and can document the associated costs.\textsuperscript{13} The same holds true for other types of activities that are allegedly related to licensing.

Our discussion begins with the text of section 337 because ultimately the Commission is a creature of statute and may not venture beyond its statutory authority. \textit{VastFame Camera, Ltd. v. Int'l Trade Comm'n}, 386 F.3d 1108, 1112 (Fed. Cir. 2004); \textit{Farrel Corp. v. U.S. Int'l Trade Comm'n}, 949 F.2d 1147, 1151-53 (Fed. Cir. 1991), \textit{superceded by statute}, 19 U.S.C. § 1337(c); \textit{Hughes Aircraft Co. v. Jacobson}, 525 U.S. 432, 438 (1999). Section 337(a)(3)(C) states that “an industry in the United States shall be considered to exist if there is in the United States ... substantial investment in ... exploitation [of the patent], including engineering, research and development, or licensing.” Notably, the provision does not specifically mention litigation. Nor does the text define the term “exploitation.”

Although Congress did not define the term “exploitation,” the design of the statute provides substantial guidance in determining what constitutes “exploitation” under section 337(a)(3)(C). \textit{See K Mart Corp. v. Cartier, Inc.}, 486 U.S. 281, 291 (1988) (“In ascertaining the plain meaning of the statute, the court must look to the particular statutory language at issue, as

\textsuperscript{13} We do not address litigation activities related to engineering or research and development.
well as the language and design of the statute as a whole.”). Congress specifically identified
three types of activities in section 337(a)(3)(C) - engineering, research and development, and
licensing - that constitute exploitation. Patent infringement litigation was not among them. We
understand that by using the term “including” and the conjunction “or” in section 337(a)(3)(C),
Congress indicated that engineering, research and development, and licensing are examples of
exploitation and they do not form an exhaustive list of what can constitute “exploitation.”
Nevertheless, we decline at this time to venture beyond these three examples because we are not
convinced that patent infringement litigation activities unrelated to engineering, research and
development, or licensing constitute “exploitation” for purposes of the statute. We find support
in the fact that, in listing these three examples of “exploitation,” Congress could have easily
included patent infringement litigation, but did not.

Furthermore, a determination that patent infringement litigation activities taken alone
constitute “exploitation” would render the domestic industry requirement a nullity. See Dodd v.
U.S., 545 U.S. 353, 371 (2005) (“It is, of course, a basic canon of statutory construction that we
will not interpret a congressional statute in such a manner as to effectively nullify an entire
section. . . . [or] allowing [it] to have virtually no real world application.”). Congress clearly
stated that it did not intend mere patent ownership to constitute a domestic industry:

The mere ownership of a patent or other form of intellectual property
rights would not be sufficient to satisfy this test. The owner of the
property right must be actively engaged in steps leading to the exploitation
of the intellectual property, including application engineering, design
work, or other such activities.
S. Rep. No. 100-71 at 130. Filing a patent infringement lawsuit is no more than a small step beyond mere ownership. Any patent owner can file a patent infringement action in the district courts of the United States under 35 U.S.C. § 271. Allowing patent infringement litigation activities alone to constitute a domestic industry would place the bar for establishing a domestic industry so low as to effectively render it meaningless. Congress nowhere indicated that it intended that result. Thus, we conclude that patent infringement litigation activities alone do not constitute “exploitation” under section 337(a)(3)(C).

On the other hand, licensing is an activity that is clearly within the realm of “exploitation” as contemplated by section 337(a)(3)(C). Thus, the question before the Commission is whether litigation activities that are related to licensing may be considered exploitation. As noted, the Commission sought comments on the issue not only from the parties but also from members of the public. Several of the submissions we received were at sharp variance with one another. On the one hand, some suggested that litigation activities can never constitute exploitation of an intellectual property right no matter how closely linked to licensing. In contrast, others asserted that litigation activities, regardless of whether they are connected with licensing, should always be considered by the Commission in determining the existence of a domestic industry. Based on our analysis, we cannot embrace either of the opposing views.

Turning to the design of section 337(a)(3)(C) as a whole, the first two statutory examples of “exploitation” are “engineering” and “research and development.” The terms “engineering” and “research and development” may inform the interpretation of “licensing” because they are all placed together in the same list. See United States v. Williams, 128 S. Ct. 1830, 1839 (2008)
("[T]he common sense canon of *noscitur a sociis* . . . counsels that a word is given more precise content by the neighboring words with which it is associated."). Thus, we understand the word "licensing" in section 337(a)(3)(C) to suggest the “exploitation” of a patent in a manner similar to “engineering” and “research and development.” Investments in engineering as well as in research and development represent efforts to facilitate and/or hasten the practical application of the invention by, for example, bringing it to market. This suggests that Congress intended for the Commission to consider at least licensing activities related to the practical application of the invention.

The legislative history also provides guidance as to the type of licensing activities that Congress contemplated would satisfy section 337(a)(3)(C) when the provision was incorporated. For instance, Congress contemplated that the domestic industry requirement would cover entities such as “universities and other intellectual property owners who engage in extensive licensing of their [patent] rights to *manufacturers.*” H. Rep. 100-40 at 157; S. Rep. No. 100-71 at 129 (emphasis added). Further, Congress contemplated that the requirement would cover small companies, such as biotech startups, that license their patents in order to generate sufficient capital to manufacture a product in the future:

For those who make substantial investments in research, there should be a remedy. For those who make substantial investments in the creation of intellectual property and then license creations, there should be a remedy. Let me give one example, there’s a start-up biotech firm in my state. Its product is its patents. *It hasn’t reached the stage of manufacture. It doesn’t have the money. But it will reach that point, by licensing its patents to others.* Should we deny that firm the right to exclude the work of pirates? Our legislation would say no. A party could get relief if it has made significant investment in R & D, engineering, or licensing.
In addition, we note that the licensing provision was added to the domestic industry requirement in 1988 in order to overturn the Commission’s Gremlins decision. Certain Products with Gremlin Character Descriptions, Inv. No. 337-TA-201, Comm’n Op. (1986) (“Gremlins”); 132 Cong. R. H1782 (Apr. 10, 1986). In the Gremlins case, Warner Brothers Inc. Licensing Company of America (“Warner Brothers”) was engaged in extensive market research, sales, sales promotion, graphics services, financial control, quality control, and strategy in connection with licensing its copyrights; the company alleged injury to its business promoting merchandise bearing registered Gremlins copyrights. Although a domestic industry existed based on domestic manufacture by Warner Brothers’ licensees, the Commission found that Warner Brothers itself could not meet the then-existing injury requirement. 14 Id. at 12. The Commission also reversed part of the ALJ’s final ID that Warner Brothers’ licensing division constituted a domestic industry because, at that time, licensing could not form the basis of a domestic industry. Id. at 9-11. Shortly after the Gremlins investigation, Representative Kastenmeier called for an amendment to section 337 to “avoid unfortunate results which have occurred in some recent cases, such as Gremlins.” 132 Cong. R. H1782 (Apr. 10, 1986).

14 Prior to the 1988 amendments to section 337(a), a complainant was required to show that there was an unfair act “the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States, or to prevent the establishment of such an industry . . . .”
The examples mentioned in the legislative history – the university and start-up company licensing their inventions to manufacturers, and the *Gremlins* case – share a common thread; namely, the intellectual property right holder is taking steps to foster propagation or use of the underlying intellectual property, be it a copyrighted image or a patented invention. To the extent the examples contained in the legislative history may be understood to convey an intent of Congress, they identify instances in which licensing activities encourage practical applications of the invention or bring the patented technology to the market.

Although the statutory design of section 337(a)(3)(C) and the legislative history may allow such a reading, the overriding consideration is that the plain language of the statute does not limit the types of licensing activities that the Commission can consider. *See Garcia v. United States*, 469 U.S. 70, 75 (1984) (“[O]nly the most extraordinary showing of contrary intentions from [the legislative history] would justify a limitation on the ‘plain meaning’ of the statutory language.”). Congress simply provided that an industry exists if there is “substantial investment in ... exploitation [of the patent], including ... licensing.” 19 U.S.C. § 1337(a)(3)(C). The dictionary definition of the term “exploit” is (1) “to put to a productive use” and (2) “to take advantage of.” *Webster’s Ninth* at 438; cf. *Merriam Webster’s New International Dictionary* (3d. ed. 1981) at 801. Thus, in ordinary usage, the term “exploitation” would cover licensing activities that “put [the patent] to a productive use”, *i.e.*, bring a patented technology to market, as well as licensing activities that “take advantage of” the patent, *i.e.*, solely derive
revenue.\footnote{We note that the Federal Circuit has used the term “exploitation” in the context of the patent statute, 35 U.S.C. § 271, to mean commercial implementation, putting a patented invention into practice, or intellectual property development. See e.g., Ethicon, Inc. v. U.S. Surgical Corp., 135 F.3d 1456, 1458 (Fed. Cir. 1998); Rite-Hite Corp. v. Kelly Co., Inc., 56 F.3d 1538, 1569 (Fed. Cir. 1995); Propat Int’l Corp. v. Rpost, Inc., 473 F.3d 1187, 1191 (Fed. Cir. 2007); Inamed Corp. v. Kuzmak, 249 F.3d 1356, 1362 (Fed. Cir. 2001).} Congress’s use of the term “licensing” therefore also covers both types of licensing activities. Accordingly, in assessing whether the domestic industry requirement has been met, we will also consider licensing activities for which the sole purpose is to derive revenue from existing production.

Because we have determined that litigation costs taken alone do not constitute investment in exploitation but that litigation costs related to licensing may, it follows that, in order to establish that a substantial investment in exploitation of the patent has occurred through licensing, a complainant must prove that each asserted activity is related to licensing. A complainant must also show that licensing activities pertain to the particular patent(s) at issue. Depending on the circumstances, such activities may include, among other things, drafting and sending cease and desist letters, filing and conducting a patent infringement litigation, conducting settlement negotiations, and negotiating, drafting, and executing a license. The mere fact, however, that a license is executed does not mean that a complainant can necessarily capture
all prior expenditures to establish a substantial investment in the exploitation of the patent.\textsuperscript{16} A complainant must clearly link each activity to licensing efforts concerning the asserted patent.\textsuperscript{17}

Even where the complainant establishes that certain acts are properly treated as investment in the exploitation of the patent, we must still determine whether that investment in exploitation is "substantial." That inquiry is a factual one that the Commission can undertake only after the parties present their facts and arguments, including evidence of the actual costs associated with each activity. The Commission may take into account, among other things, the type of activity, the relationship between the activity, licensing, and the patent at issue, and the amount of the investment. The Commission may also consider whether the activity is of a type that Congress explicitly indicated may establish a domestic industry; namely, activities that serve to encourage practical applications of the invention or bring the patented technology to the market. In weighing the evidence, the Commission has previously indicated that whether an investment is substantial "will depend on the industry in question, and the complainant's relative size." \textit{Certain Stringed Musical Instruments and Components Thereof}, Inv. No. 337-TA-586, Comm'n Op. at 25 (May 2008).

\textsuperscript{16} Conversely, the mere fact that a patent holder's efforts to obtain a license are unsuccessful does not \textit{per se} mean that expenses associated with any related activities are not investments in the exploitation of the patent through licensing.

\textsuperscript{17} We note that only activities that occurred before the filing of a complaint with the Commission are relevant to whether a domestic industry exists or is in the process of being established under sections 337(a)(2)-(3). \textit{See Bally/Midway Mfg. Co. v. U.S. Int'l Trade Comm'n}, 714 F.2d 1117, 1121 (Fed. Cir. 1983).
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2. Remand Is Necessary to Determine Whether Complainant PPC Can Show that a Domestic Industry Exists or Is In the Process of Being Established.18

PPC asks the Commission to consider five activities when addressing the domestic industry requirement: (1) research and development; (2) its EX connector-related activities; (3) its [ ]; (4) its Corning Gilbert litigation; and (5) its cease-and-desist letters. PPC Br. at 47-48; PPC Rep. Br. at 131. We address each in turn.

Although PPC relied predominantly on its license with [ ] to show a domestic industry, the ALJ “inferred that at least some portion of Mr. Noah Montena’s [the inventor of the ‘539 design patent] salary, plus his time, effort and use of PPC’s equipment and facilities, is attributable to his development of the design that became the ‘539 [design] patent.” ID/RD at 121 (citing Montena Tr. at 395, 400). This inference is not warranted here. PPC presented no evidence of any investment in research and development related to the ‘539 design patent. The ‘539 design patent is a continuation of U.S. utility patent application number 08/910,509 (“the ‘509 application”), which is also the parent application of the asserted ‘194 patent. See ‘194 patent (CX-2). The ‘509 utility application, the ‘194 patent, and the ‘539 design patent all contain the exact same figures. Compare Figures 21 and 22 of the ‘194 patent (CX-2) and ‘539 design patent (CX-3). Without a showing to the contrary, we find that Mr. Montena’s salary, time, effort, and use of PPC’s equipment and facilities are more likely attributable to his

18 Commissioner Lane finds that Complainant, PPC, did not establish a domestic industry in relation to the ‘539 patent. She finds that PPC’s expenses associated with the [ ] litigation do not constitute a substantial investment in exploitation of the ‘539 patent through licensing under section 337(a)(3)(C). Thus, Commissioner Lane would reverse the ALJ’s determination, and terminate the investigation as to the ‘539 patent with a finding of no violation.
development of the structural and functional design of the connector embodied in the ‘509 utility application and the ‘194 patent, than to his development of the ornamental design embodied in the ‘539 design patent. Moreover, PPC admits that it has not made a product covered by the ‘539 design patent. Accordingly, we conclude that any time and resources spent by PPC in researching or developing the ornamental design of the ‘539 design patent, even if they could be considered investments, are minimal and do not themselves constitute the “substantial” investment required by section 337(a)(3)(C).19

We decline to consider PPC’s expenses related to its EX connectors because those connectors are covered by the ‘194 patent, not the ‘539 design patent. Although the ‘194 patent is in the same family as the ‘539 design patent, our statute specifically requires PPC to show a substantial investment in the exploitation of the patent at issue. PPC Rep. Br. at 135-36. Accordingly, we reject PPC’s reliance on its EX connectors.

PPC further claims that its patent infringement litigation with [[ ]] should be considered an exploitation of the ‘539 design patent through licensing, because it resulted in a license covering the [[ ]] connector. As discussed above, however, we find that patent infringement litigation activities and their associated costs are not inherently related to licensing. A patent gives the patent holder a right to exclude others from infringing the patent. 35 U.S.C. § 271(a). When the patent holder files a patent infringement lawsuit, the patentee is simply exercising that right. PPC provided little if any evidence that it was seeking a license from [[ ]] rather than the

19 We do not address the issue of whether and to what extent activities to develop a patented invention can be considered “exploitation” under the statute.
permanent injunction it actually sought and received from the district court. The generalized testimony of PPC’s former Vice President and General Counsel, Stephen Malak, that PPC always tried to resolve infringement issues through other means before engaging in litigation, is not sufficient on its own to make this showing. Malak Tr. 153:21-154:9; 157:12-158:9. Moreover, the link between the litigation and licensing is particularly attenuated here because the subject license relied upon issued more than two years after the litigation terminated.

However, PPC’s litigation activities and costs, including any relevant costs associated with conducting settlement negotiations and drafting and negotiating the license, may be related to licensing if, for instance, the patentee and accused infringer were in licensing negotiations before the suit was filed or while it was ongoing, if the patentee made a concerted effort to license the patent, or if the patentee has an established licensing program. The record is not fully developed on these points. Therefore, we vacate the ALJ’s determination that PPC met the domestic industry requirement for the ’539 design patent and remand for further proceedings consistent with this opinion.

On remand, PPC must show that each asserted litigation activity is related to licensing. In addition, PPC must show that these activities are related to the ’539 design patent. For example, although the [[ ]] litigation was clearly connected to the ’539 design patent, the license makes no mention of the patent. And finally, PPC must document the costs incurred for each activity. PPC cannot rely on its broad allegation that it spent [[ ]] on its litigation with [[ ]] and that this is a substantial investment in the patent’s exploitation through licensing. Litigation activities may need to be broken down into their constituent parts. The ALJ may presume that
license drafting and execution are associated with licensing, but PPC must still prove that the license is related to the patent at issue and what the related costs were. As described above, the ALJ may also consider the presence and number of licenses and the presence of documents or activities soliciting licenses as well as any other relevant evidence to determine whether there has been "substantial" investment in exploitation through licensing.

Before the ALJ, PPC relied on its litigation with Corning Gilbert Inc. ("Corning Gilbert") and the ALJ relied on it in his decision as well. ID at 122. PPC sued Corning Gilbert for patent infringement of the '539 design patent on August 21, 2001, only months after filing suit against [[ ], in the United States District Court for the District of Arizona. See Malak Tr. at 190:24-191:9. This case was dismissed on February 25, 2004 based on a settlement agreement. Id. PPC has not shown that a license issued, nor has PPC asserted that this litigation was in pursuit of a license. Because we concluded above that patent infringement litigation activities alone cannot form the basis of a domestic industry, we do not consider PPC's Corning Gilbert litigation in determining whether there has been a substantial investment in the exploitation of the '539 design patent. In addition, PPC does not appear to renew its arguments relating to the Corning Gilbert litigation before the Commission. Accordingly, we do not believe remand is necessary to determine if this litigation is related to licensing.

Finally, PPC asks the Commission to consider several cease-and-desist letters. Cease-and-desist letters are not inherently related to licensing, as they may simply instruct the recipient to cease the infringing activity. On the other hand, they may be related to licensing if, for example, they offer the recipient the option of taking a license or they form part of a concerted
licensing program or effort. If PPC wishes to rely on these letters, it must show on remand that the cease-and-desist letters are related to licensing, and are related to the '539 design patent. PPC must also establish the costs of drafting and sending those letters.

The Commission has determined to extend the target date to allow the ALJ time to set a schedule and a new target date to accommodate the remand proceedings.

IV. REMEDY

Section 337 provides that, “[i]f the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States . . . .” 19 U.S.C. § 1337(d)(1). The Commission issues two types of exclusion orders under this provision, a “limited exclusion order” and a “general exclusion order.” See Kyocera Wireless Corp. v. Int’l Trade Comm’n, 545 F.3d 1340, 1356 (Fed. Cir. 2008). When a violation is established, a limited exclusion order is typically appropriate unless under section 337(d)(2), a complainant shows that “(A) a general exclusion from entry of articles is necessary to prevent circumvention of an exclusion order limited to products of named persons; or (B) there is a pattern of violation of this section and it is difficult to identify the source of infringing goods.” 19 U.S.C. § 1337(d)(2). “Because of its considerable impact on international trade, potentially extending beyond the parties and articles involved in the investigation, more than just the interests of the parties is involved. Therefore, the Commission exercises caution in issuing general exclusion orders . . . .” Certain Agricultural Tractors Under 50 Power Takeoff Horsepower, Inv. No. 337-TA-380, Comm’n. Op. at 21 (Mar. 12, 1997).

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PPC has requested that the Commission issue a general exclusion order based on a finding that the defaulting respondents have violated section 337 with respect to the '539, '076, '257, and '194 patents. When complainant requests a limited exclusion order against defaulting respondents, "the Commission shall presume the facts alleged in the complaint to be true." 19 C.F.R. § 210.16(c)(1). This presumption does not apply when general exclusion orders are sought, because such orders "are directed to goods from all sources, including future and unknown current importers." Certain Plastic Molding Machines With Control Systems Having Programmable Operator Interfaces Incorporating General Purpose Computers, and Components Thereof, Inv. No. 337-TA-462, Comm'n. Op. at 6 (Apr. 2, 2003). Instead, to issue a general exclusion order based on a violation of section 337 by defaulting respondents, complainant must establish that a violation has occurred by "substantial, reliable, and probative evidence . . . ." 19 U.S.C. § 1337(g)(2)(B). Only then will the Commission consider whether to issue a general exclusion order.

The ALJ recommended a general exclusion order for the '194 and '076 patents. For both patents, he found that a general exclusion order "is necessary to prevent circumvention of a limited exclusion order" under section 337(d)(2)(A). The ALJ found a likelihood of circumvention based on evidence that defaulting respondents Yangzhou ZE, Yangzhou FTC, and ZE are alter egos for another defaulting respondent, Fei Yu, all of which are involved in the sale and importation of the accused connectors. He also based his conclusion on "the ease with which individual(s) operating these entities could establish new companies and continue to sell
infringing compression connectors for importation if barred by a limited exclusion order.” ID at 129-30 (citations omitted).

In connection with the '194 patent, but not the '076 patent, the ALJ also found that “there is a pattern of violation of this section and it is difficult to identify the source of infringing goods” under section 337(d)(2)(B). He based this finding on (1) infringement by the defaulting respondents; (2) infringement by respondents Edali and Aska who were terminated from this investigation based on a consent order (Order No. 5); (3) testimony regarding two prior lawsuits that resulted in favorable verdicts that the '194 patent is valid and infringed; and (4) testimony regarding two more lawsuits that resulted in licenses to practice the '194 patent. Id. at 132. The ALJ credited PPC’s evidence of “certain non-respondents selling for importation, importing, or selling after importation coaxial cable connectors alleged to infringe claims 1 and 2 of the '194 patent.” Id. at 133 (citing Complainant PPC’s Findings of Fact at III.C.5.1-20, III.C.8.1-IIIC.12.20, III.C.16.1-20, and III.C.19.1-20).

The ALJ found that it is difficult to identify the source of the products that infringe the '194 patent based on testimony of PPC’s witnesses, Mr. Malak, Mr. White, and Mr. Noll, regarding several instances in which alleged infringers refused to name their suppliers (Malak Tr. at 156:3-23), the widespread availability of allegedly infringing connectors on the Internet and the difficulty Mr. White had in identifying the source of these connectors (White Tr. at 622:20-625:22), and Mr. Noll’s experiences with foreign companies concealing their connector manufacturing activity from PPC by restricting access to their facilities, failing to provide
identity markings on their connectors, and mismarking their connectors with PPC's name (Noll Tr. at 1449:9-1451:17; 1468:1-7). ID at 132-34; CX-307.

A. Remedy for the '194 Patent

The evidence shows that, with respect to the '194 patent, "there is a pattern of violation of this section and it is difficult to identify the source of infringing goods" as required by section 337(d)(2)(B). Thus, we find the appropriate remedy for the section 337 violation is a general exclusion order. We agree with the ALJ that the section 337 violations by respondents Edali and Aska, who were terminated by consent order, as well as the violations by the defaulting respondents are all probative of a pattern of violation. ID at 132-133. Although an infringement finding by a district court does not necessarily indicate that a violation of section 337 has occurred, we find PPC's successful assertions of the '194 patent probative of a pattern of violation because they show that there were numerous sources of infringing goods. See Malak Tr. at 181:12-183:21, 192:17-193:11. We agree with the ALJ that PPC's cease-and-desist campaign against alleged infringement by non-respondents also tends to show a pattern of violation with respect to the '194 patent. ID at 133-34. Indeed, some of the addressees of the cease-and-desist letters in the record are located abroad and PPC suspected them of importing their coaxial cable connectors into the United States. See CX-90C.

We further agree with the ALJ that PPC has established that it is difficult to identify the source of the infringing products. ID at 134-35. The evidence shows that distributors of allegedly infringing connectors refuse to identify their suppliers. Malak Tr. at 156:3-23; ID at 134-35. Moreover, the allegedly infringing cable connectors are widely available for sale on the
Internet but, in most cases, the source of these connectors cannot be identified. White Tr. at 622:20-625:22; ID at 135-36. In some cases, foreign companies have even concealed their connector manufacturing activity from PPC by restricting access to their facilities, failing to provide identifying markings on their connectors, or mismark their connectors with PPC’s name. Noll Tr. at 1449:9-1451:17; 1468:1-7; CX-307; ID at 135-56. We find that the lack of clarity regarding the relationship between defaulting respondents ZE, Yangzhou ZE, and Yangzhou FTC with Fei Yu also suggests that it is difficult to identify the source of infringing connectors.

We reject, however, PPC’s argument that, under section 337(d)(2)(A), “a general exclusion order is necessary to prevent circumvention of a limited exclusion order” covering the ‘194 patent. We find that PPC’s lack of knowledge about the relationship between the defaulting respondents is insufficient to infer an intent to circumvent the Commission’s remedial order. Nevertheless, based on section 337(d)(2)(B) and the evidence of a pattern of violation and unknown sources, we have determined to issue a general exclusion order to remedy the violation of section 337 that has occurred in connection with the ‘194 patent.

**B. Remedy for the ‘076 Patent**

The appropriate remedy for the section 337 violation with respect to the ‘076 patent is a limited exclusion order because PPC has not met the requirements of section 337(d)(2)(A) or (B). We find that infringement by the defaulting respondents and two other non-respondents is insufficient to establish a “pattern of violation” under section 337(d)(2)(B). Moreover, PPC has not shown that a general exclusion order is necessary to prevent circumvention in this case. The
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Commission’s limited exclusion order excludes products found to infringe that are manufactured or imported by or on behalf of the defaulting respondents, as well as their “affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns.” Thus, even if the defaulting respondents were to form new entities, their actions would be covered by the Commission’s limited exclusion order. See Ground Fault Circuit Interrupters and Products Containing Same, Inv. No. 337-TA-615, Comm’n. Op. at 26 (Mar. 26, 2009). Accordingly, we have determined to issue a limited exclusion order to remedy the violation of section 337 that has occurred with respect to the ‘076 patent. Based upon the language of this order, CBP should exclude only the covered products of the defaulting respondents, Hanjiang Fei Yu Electronics Equipment Factory of China, Zhongguang Electronics of China, Yangzhou Zhongguang Electronics Co. of China, and Yangzhou Zhongguang Foreign Trade Co. Ltd. of China and their “affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns.”

V. THE PUBLIC INTEREST

When determining whether to issue remedial orders for a violation of section 337, the Commission weighs the effect of the orders on four public interest factors: (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) the production of like or directly competitive articles in the U.S., and (4) U.S. consumers. 19 U.S.C. § 1337(d). The IA does not believe there are any public interest concerns that would preclude issuance of the exclusion orders. IA Br. at 40. In the IA’s view, there are no major public health and welfare implications and there is no evidence that U.S. demand for coaxial cable connectors cannot be
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met by other entities, including PPC. Id. PPC agrees with the IA. PPC Br. at 85-86. No one argues otherwise.

We agree with the IA and PPC that the exclusion orders do not implicate any of the statutory “public interest” factors. Thus, having considered the submissions of the parties in light of the statutory factors set forth in 19 U.S.C. § 1337(d), we find that the public interest does not preclude issuance of the exclusion orders.

VI. BOND

When the Commission issues an exclusion order, infringing products are nonetheless entitled to entry under bond during the Presidential review period. 19 U.S.C. § 1337(j). The Commission must set the amount of the bond at a level sufficient to protect complainants from injury. Id. When reliable pricing information is available, the Commission has often set the bond amount at a level that would eliminate the differential between the domestic product and the imported, infringing product. See Certain Microsphere Adhesives, Processes for Making Same, and Products Containing Same, Including Self-stick Repositionable Notes, Inv. No. 337-TA-366, USITC Pub. 2949, Comm’n. Op., 1996 ITC LEXIS 280, at *44 (1996). It is Complainant’s burden to present evidence to support its recommended bond and the failure to do so may result in no bond being set. Certain Liquid Crystal Display Devices, Inv. 337-TA-631, Commission Op. at 27-28 (2009) (failure to present price differential evidence precluded a bond); Certain Rubber Antidegradants, Inv. No. 337-TA-533 Commisscn Op. at 40 (2006) (rejecting request for a 100% bond, and stating that “[i]n our view, the complainant has the burden of supporting any proposition it advances, including the amount of bond.”).
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Here, the ALJ recommended a bond of 13 cents per infringing article. ID at 161-63. The ALJ based his recommendation on the testimony of PPC’s Vice President of Sales regarding a price differential between its EX connector and “offshore products or knockoffs.” Id. at 162 (quoting White Tr. at 634:15-635:1).

The ALJ credited the testimony from PPC’s witness that the price differential is about 13 cents per connector, although ALJ acknowledged that this testimony was an estimate. ID at 148-51. Complainant was not able to obtain the necessary discovery from the defaulting respondents because of their failure to participate in the investigation. PPC should not be penalized for this. Therefore, we have determined to set a bond of 13 cents for products of the defaulting respondents covered by the limited exclusion order. As to the general exclusion order, however, we have determined to apply the 13 cent bond only against the covered products of the defaulting respondents, but because this evidence is an estimate, we have determined to set a zero bond amount for all other products covered by the general exclusion order.

VII. CONCLUSION

The Commission determined not to review the ALJ’s determination that the defaulting respondents violated section 337 with respect to the ‘194 and ‘076 patents and has determined to issue a general exclusion order covering articles that infringe the asserted claims of the ‘194 patent and a limited exclusion order directed to the articles of the defaulting respondents found to infringe the claim of the ‘076 design patent. We find that these remedies are not precluded by consideration of the statutory public interest factors. For the Presidential review period, we determine to set a bond amount of 13 cents per unit for defaulting respondents’ products covered...
by either the general or limited exclusion orders, and zero bond for any other products covered by
the general exclusion order.

The Commission has further determined to modify the ALJ’s construction of two claim
terms found in claim 1 of the ‘257 patent and to affirm the ALJ’s determination that the accused
products of the active respondents Fu-Ching and Gem do not infringe claim 1 of the ‘257 patent
for modified reasons, but reverse his conclusion that complainant PPC’s product meets the
technical prong of the domestic industry requirement and that the four defaulting respondents
violate section 337 with respect to the ‘257 patent. Finally, the Commission has determined to
vacate the ALJ’s finding that a domestic industry exists under section 337(a)(3)(C) with respect
to the ‘539 patent and remand to the ALJ for further proceedings.

By order of the Commission.

Marilyn R. Abbott
Secretary to the Commission

Issued: April 14, 2010
CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached COMMISSION OPINION has been served by hand upon the Commission Investigative Attorney, Kevin Baer, Esq., and the following parties as indicated on April 14, 2010.

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