

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIRAC, INC.
Petitioner,

v.

ECOFASTEN SOLAR, LLC
Patent Owner.

U.S. Patent No. 10,763,777
Issue Date: September 1, 2020
Title: Roof Mounting System

Inter Partes Review No.: IPR2021-00532

**DECLARATION OF PHILIP D. DREGGER IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 10,763,777**

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iv.	[6c] “a bracket supportable on the flashing, the bracket including a planar first end, a first arm, a second arm, and a planar second end, the planar first end defining a third aperture, the third aperture including a first aperture portion having a first cylindrical shape and defining a first diameter and a second aperture portion having a second cylindrical shape and defining a second diameter that is less than	

the first diameter, the bracket defining a bracket aperture bound by the planar first end, the first arm, the second arm, and the planar second end;” 87

v. [6d] “a washer including a polymeric compression portion and a rigid backing portion and defining a fourth aperture; and88

vi. [6e] “a screw including a head and extending through the first aperture, the cylindrical second aperture, the third aperture, and the fourth aperture to secure the bracket and the flashing and to couple the bracket, the preformed rubber seal and the flashing as an assembly, and to inhibit fluid flow through the first aperture.”88

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I. Introduction

1. I am over the age of eighteen (18) and otherwise competent to make this declaration.

2. I have been retained by Unirac, Inc. (Petitioner) as an independent expert consultant in this proceeding before the United States Patent and Trademark Office (“USPTO”). Although I am being compensated at my rate of \$395 per hour for the time I spent on preparation of this declaration, no part of my compensation depends on the outcome of this proceeding, and I have no other interest in this proceeding. To the best of my knowledge, I have no financial interest in Unirac, Inc.

3. This Petition for inter partes review involves U.S. Patent No. 10,763,777 (“the ‘777 Patent”) (EX-1001). The ‘777 Patent is entitled “Roof Mounting System” and lists Brian Cecil Stearns, and Douglas Timothy Lounsbury as the inventors.

4. For the purposes of this *inter partes* review as discussed later, I have been instructed to assume that the effective filing date of the Claims of the ‘777 Patent challenged by the Petitioner in this *inter partes* review is no earlier than March 19, 2009, the filing date of provisional application No. 61/161,668, filed on March 19, 2009.

5. I understand that according to USPTO records, the ‘777 Patent is currently assigned to Ecofasten Solar, LLC. (“Ecofasten” or “Patent Owner”).

6. The ‘777 Patent is generally directed to a “roof mount assembly” and, in particular, to “roofing systems and roof-mounted fixtures and methods for assembling and installing the same.” I am familiar with the technology described in the ‘777 Patent as of the earliest possible priority date of March 19, 2009.

7. In preparing this Declaration, I have reviewed the ‘777 Patent (EX-1001), the file history of the ‘777 Patent (EX-1002), and each of the documents cited herein, and I have considered these documents in light of the general knowledge in the art as of March 2009. In formulating my opinions, I have relied upon my experience in the relevant art. I have also considered the viewpoint of a person of ordinary skill in the art (“POSA”) in the field, as of March 2009.

8. I have been asked to provide my technical expertise, analysis, insights and opinions regarding the ‘777 Patent and relevant references that form the basis of the grounds of rejection set forth in the accompanying Petition for *inter partes* review of the ‘777 Patent. As described in detail below, I offer the following opinion in this Declaration:

- A POSA would have found Claims 1-5 and 10-14 of the ‘777 Patent to be obvious over Wentworth in view of Thaler and Glicksman, in

that Wentworth in view of Thaler and Glicksman teaches each element of Claims 1-5 and 10-14 to a POSA and a POSA would have been motivated to combine the teachings of these references.

- A POSA would have found Claims 6-9 and 16-24 of the ‘777 Patent to be obvious over Wentworth in view of Thaler, Glicksman, and Ullman, in that Wentworth in view of Thaler, Glicksman, and Ullman teaches each element of Claims 6-9 and 16-24 to a POSA and a POSA would have been motivated to combine the teachings of these references.

II. List of Documents I Considered in Forming My Opinions

9. In formulating my opinions, I have considered and relied on statements in the documents identified below. These documents include patents, patent Applications, learned treatises, periodicals, pamphlets and other publications. I consider each of the references below as a reliable authority for the statements on which I rely.

<i>Exhibit #</i>	<i>Description</i>
1001	U.S. Pat. No. 10,763,777 (the “’777 Patent”)
1002	Prosecution History of the ’777 Patent (“File History”)
1004	Curriculum Vitae of Philip Dregger, P.E.
1005	U.S. Pat. No. 7,762,027 (“Wentworth”)

<i>Exhibit #</i>	<i>Description</i>
1006	U.S. Pat. No. 6,185,885 (“Thaler”)
1007	U.S. Pat. No. 3,168,321 (“Glicksman”)
1008	U.S. Pub. No. 2003/0177706 (“Ullman”)
1009	<i>McGraw-Hill Dictionary of Scientific and Technical Terms</i> (5 th ed. 1994)
1010	U.S. Pat. No. 4,321,745 (“Ford”)
1011	U.S. Pat. No. 6,526,701 (“Stearns”)
1012	U.S. Pat. No. 7,600,349 (“Liebendorfer”)
1013	U.S. Pat. No. 4,010,578 (“Logsdon I”)
1014	U.S. Pat. No. 4,160,347 (“Logsdon II”)
1015	U.S. Pat. No. 4,265,058 (“Langdon”)
1016	U.S. Pat. No. 7,861,485 (“Wentworth”)
1017	U.S. Pat. No. 4,526,407 (“Kifer”)
1018	U.S. Pat. No. 5,222,334 (“Hasty”)
1019	U.S. Pub. No. 2007/0199561 (“Soucy”)
1020	U.S. Pat. No. 7,797,883 (“Tarbell”)
1021	U.S. Pat. No. 8,151,522 (the “’522 Patent”)

III. My Background and Qualifications

10. My qualifications for forming the opinions set forth in this declaration are summarized here and explained in more detail in my curriculum vitae, which is included as part of EX-1004. EX-1004 also includes a list of my publications and the cases in which I have testified at deposition, hearing, or trial during the past four years.

11. I received a Master of Science in Civil Engineering in 1978 and a Bachelor of Science in Civil Engineering with high distinction in 1976, both from the University of Minnesota – Minneapolis.

12. I am a Professional Engineer licensed in California, Nevada, and Minnesota and have provided investigatory, analytical, and consulting services regarding roof and waterproofing systems for more than 30 years. I have been a Registered Roof Consultant since 1993.

13. Currently, I am Vice-President of Technical Roof Services, Inc. (TRS) a Salas O'Brien Company, located in Concord, California. In this role, I help provide a full range of consulting services relating to roof structures, waterproofing, building envelope, and solar photovoltaic systems. These services include, among other things, condition evaluations, failure investigations, defect inspections, condensation analyses, and moisture surveys relating to roofs and buildings. I have led TRS since 1991.

14. Prior to TRS, I held several technical positions in the roofing and construction industries. Specifically, I served as Senior Engineer with Wiss Janney Elstner Associates, Inc. in Emeryville, California from 1989-1991, performing condition studies of exterior building envelopes and investigating roofing and waterproofing issues. From 1981-1989, I held a variety of positions with Twin City

Testing Corporation in St. Paul, Minnesota. These included different engineering roles in the Soils and Geology Department and Supervisor, Roofing Department.

15. I have received several accolades for my work in the roofing industry. For example, I am a Fellow in the Roof Consultants Institute (RCI). In 2018, I was awarded the William C. Cullen Award by the ASTM International Committee D08.

16. I have been active in a number of professional organizations and conferences in the roofing industry. For example, I have served as a Director (1990-1993) and on the Education Task Force (1992-1997) of the Roof Consultants Institute. I also served on the Board of Directors from 2010-2018 for the Cool Roof Rating Council (CRRC) and on the Board of Directors from 2010 to the present of the Special Interest Group for Dynamic Evaluation of Roofing Systems (SIGDERS). I also have held leadership positions with the Roofing Industry Committee on Weather Issues (RICOWI) and the Roof Industry Educational Institute (RIEI).

17. I have authored dozens of articles and papers relating to technical issues in the roofing industry. Details of these publications are included in my curriculum vitae in EX-1004.

18. I have also made dozens of presentations to industry professionals relating to technical issues in the roofing industry. Details of these publications are included in my curriculum vitae in EX-1004.

19. I have no financial interest in either party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis, for all tasks involved. My compensation is not dependent in any manner on the outcome of these proceedings or on the content of my opinions.

20. I am being paid for my time, regardless of the facts I know or discover and regardless of the conclusions or opinions that I reach and express. My compensation is not contingent on my opinions or conclusion in this matter, the outcome of any issue in this case or the ultimate of the case, or the fact or opinions expressed at any deposition or any trial related to this matter. I have no financial interest in the outcome of this proceeding.

IV. Person of Ordinary Skill in the Art (POSA)

21. I am familiar with the knowledge and capabilities of one of ordinary skill in the art. Unless otherwise stated, my testimony below refers to and applies the knowledge of one of ordinary skill in the art as of March 19, 2009, the earliest possible effective filing date of the '777 Patent.

22. I have been informed and understand that a Person of Ordinary Skill in the Art (“POSA”) is a hypothetical person who is presumed to be aware of all pertinent prior art, thinks along conventional wisdom in the art, and is a person of ordinary creativity.

23. With respect to the ’777 Patent, a POSA in March 2009 would have had a Bachelor of Science degree in a relevant engineering discipline, such as mechanical, structural, civil, or industrial engineering, and a couple of years experience. Alternatively, rather than an engineering degree, the person of ordinary skill in the art would have at least several years of experience designing, investigating, repairing, or installing roof mounting systems or roof assembly systems. Higher levels of education may substitute for less experience, and more experience may substitute for the specified level of education. A POSA would also have knowledge, experience, and been familiar with construction and a wide range of roofing concepts including general waterproofing concepts such as techniques for flashing, sealing, fastening, and adjusting mounting systems.

V. Relevant Legal Standards

24. I am not a lawyer and will not provide any legal opinions. Although I am not a lawyer, I have been informed and understand that certain legal standards

are to be applied by technical experts in forming opinions regarding the meaning and validity of patent claims.

25. I have been informed that a patent includes a specification, one or more drawings, and one or more claims. I have been informed that the specification provides a written description of the patented invention, the drawings illustrate the invention, and the claims define the scope of the invention. I understand that the file history includes the back and forth communication between a patent applicant and the USPTO during the application process, including the application itself, as well as office actions filed by the USPTO examiner and responses filed by the applicant. I have been informed that the claims are interpreted in light of the specification and the file history.

26. I have been asked to provide my opinions regarding whether the claims of the '777 Patent are anticipated or would have been obvious to a person having ordinary skill in the art at the time of the alleged invention, in light of the prior art.

27. I have been informed that, to anticipate a claim under 35 U.S.C. § 102, a reference must teach or disclose every element of the claim either expressly or inherently to a person having ordinary skill in the relevant art.

28. Further, I have been informed that a patent claim is not patentable under 35 U.S.C. § 103 if the differences between the patent claim and the prior art are such that the claimed subject matter as a whole would have been obvious at the time the claimed invention was made to a person having ordinary skill in the relevant art. Obviousness, as I have been informed and understand, is based on the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art, and, to the extent that they exist, certain objective indicia of non-obviousness.

29. I have been informed that objective indicia can be important evidence regarding whether a patent is obvious or nonobvious, if it has an appropriate nexus to the claimed invention, i.e., is a result of the merits of a claimed invention (rather than the result of design needs or market-pressure advertising or similar activities). Such indicia include: commercial success of products covered by the patent claims; a long-felt need for the invention; failed attempts by others to make the invention; copying of the invention by others in the field; unexpected results achieved by the invention as compared to the closest prior art; praise of the invention by the infringer or others in the field; the taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at

the making of the invention; and the patentee proceeded contrary to the accepted wisdom of the prior art.

30. I have been informed that whether there are any relevant differences between the prior art and the claimed invention is to be analyzed from the view of a person of ordinary skill in the relevant art at the time of the invention. As such, my opinions below as to a person of ordinary skill in the art are as of the time of the invention, even if not expressly stated as such; for example, even if stated in the present tense.

31. In analyzing the relevance of the differences between the claimed invention and the prior art, I have been informed that I must consider the impact, if any, of such differences on the obviousness or non-obviousness of the invention as a whole, not merely some portion of it. The person of ordinary skill faced with a problem is able to apply his or her experience and ability to solve the problem and also look to any available prior art to help solve the problem.

32. I have been informed that a precise teaching in the prior art directed to the subject matter (directed to?) of the claimed invention is not needed. I have been informed that one may take into account the inferences and creative steps that a person of ordinary skill in the art would have employed in reviewing the prior art at the time of the invention. For example, if the claimed invention combined

elements known in the prior art and the combination yielded results that were predictable to a person of ordinary skill in the art at the time of the invention, then this evidence would make it more likely that the claim was obvious. On the other hand, if the combination of known elements yielded unexpected or unpredictable results, or if the prior art teaches away from combining the known elements, then this evidence would make it more likely that the claim that successfully combined those elements was not obvious.

33. I have been informed that there are recognized, exemplary, rationales for combining or modifying references to show obviousness of claimed subject matter. Some of the rationales include the following: combining prior art elements according to known methods to yield predictable results; simple substitution of one known element for another to yield predictable results; use of a known technique to improve a similar device (method or product) in the same way; applying a known technique to a known device (method or product) ready for improvement to yield predictable results; choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; and some teaching, suggestion, or

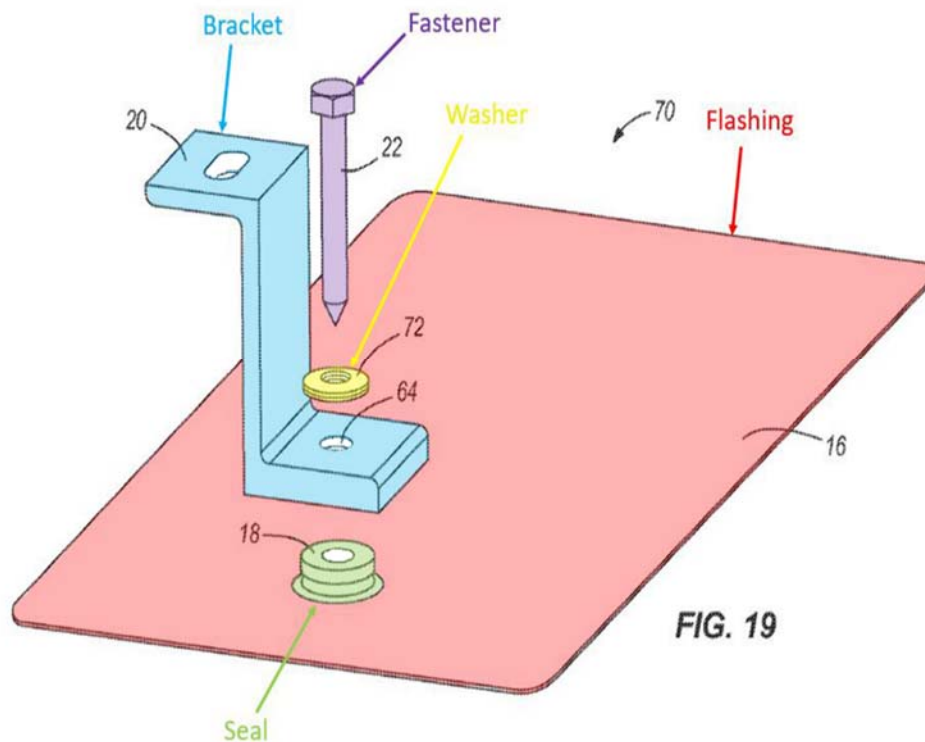
motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art teachings to arrive at the claimed invention.

VI. The '777 Patent

A. Summary

34. The '777 Patent is directed to a “roof mount assembly” and, in particular, to “roofing systems and roof-mounted fixtures and methods for assembling and installing the same.” EX-1001, Abstract, 2:60-62.

35. While the '777 Patent describes a number of different embodiments for its roof mount assembly (shown in more than 100 drawing figures), all Challenged Claims recite an assembly with the same basic components or elements of a “flashing,” “seal,” “bracket,” “washer,” and “screw”/“fastener.” EX-1001. One embodiment of the assembly, which is exemplary, is shown in FIG. 19 with a flashing 16 (red), a seal 18 (green), a bracket 20 (blue), one fastener 22 (purple), and a washer 72 (yellow):



EX-1001, FIG. 19 (annotated with color and labels)

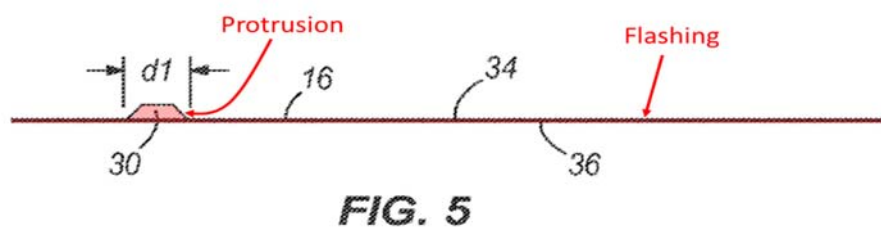
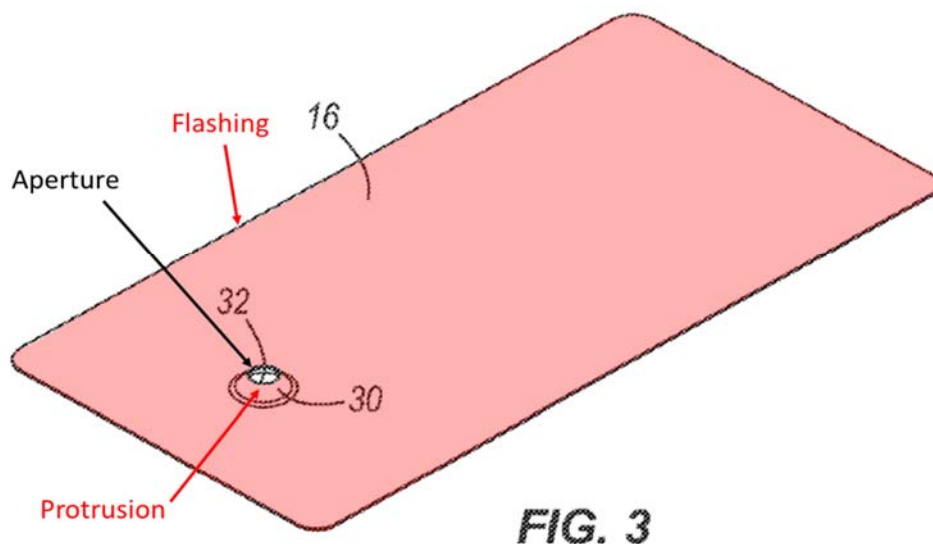
36. The '777 Patent describes that in one embodiment the washer 72 can be a polymeric compression washer to provide a substantially water-tight seal between the fastener 22 and the bracket aperture 64, and in other embodiments, the washer 72 can be omitted or can be replaced by an o-ring or an applied sealant, such as caulk, and alternatively or in addition, the washer 72 can include a stiffening element, such as, for example, a rigid backing, to provide additional support. EX-1001, 11:13-25.

37. Likewise, the '777 Patent explains that “[e]ven though the illustrated fasteners are bolts, other fasteners, such as screws, studs, nails, and other removable and non-removable fasteners, can be used.” EX-1001 11:25-34.

38. Further, the '777 Patent admits that the shape of the bracket is not critical to the invention, as “[t]he illustrated brackets...are shown by way of example only. Any suitable brackets can be utilized, such as any of the brackets shown and described herein” and the claimed L-shaped bracket is provided “by way of example only.” EX-1001, 24:6-9; 33:14-15.

39. The '777 Patent does not clearly explain how its roof mount assembly is different or better than what came before. EX-1001.

40. The Abstract, specification, and claims indicate that the ultimate purpose of the claimed roof mount assembly is to “inhibit flow of fluid through the aperture” formed in an upwardly extending projection in the flashing. EX-1001, Abstract, 33:31-36:34. One embodiment of the flashing is shown in FIGS. 3 and 5, where the flashing includes an “upwardly extending protrusion 30 (red) [that] defines an aperture 32.” EX-1001, 3:32-4:8, 6:52-11:41, FIGS. 1-19.



EX-1001, FIGS. 19, 3, 5 (annotated with color and labels)

41. The specification states: “The roofing system 10 inhibits leakage of fluids through the flashing 16...” EX-1001, 7:20-21. This is accomplished with the “seal...sized to form a water-tight seal with the aperture” in the flashing. EX-1001, Abstract. The ’777 Patent explains:

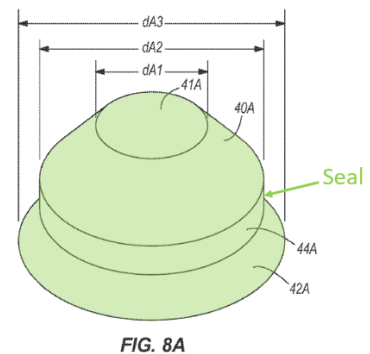
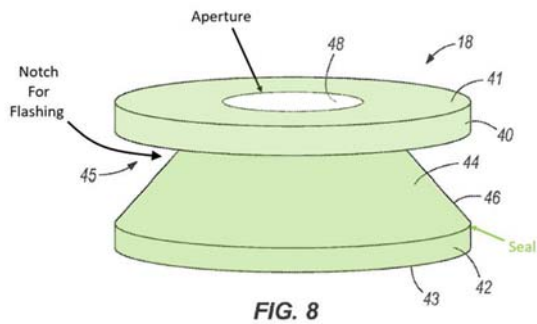
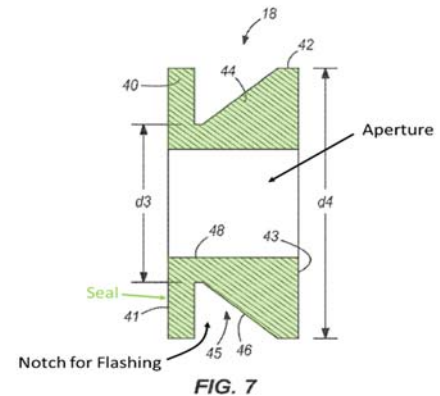
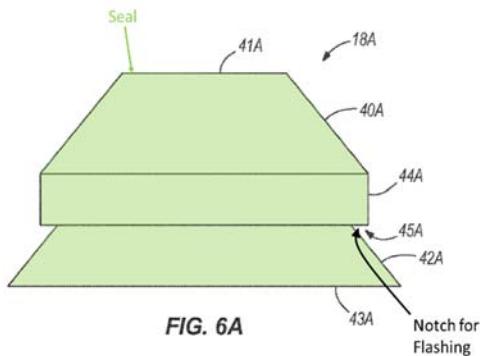
The seal 18 is insertable into the aperture 32 to couple the seal 18 to the flashing 16, as illustrated in FIGS. 9-12. The notch 45 is sized to receive the flashing 16 therein. The seal 18 is operable to form a compression

seal by being held against the concave interior side 26 of the flashing 16. The seal 18 can be factory-installed in the flashing aperture 32 or can be inserted by on-site at a customer's building. A fixture for a punch press can be sized to install the seals 18 into the respective apertures 32. In some embodiments, the punch press can be utilized to form the projection 30 and the aperture 32 in flashing 16, at the same time. In some embodiments, the punch press can form the projection 30 and the aperture 32 in the flashing 16 and then insert the seal 18 into the aperture 32, either during the same operation or during a separate operation.

EX-1001, 8:44-58.

42. The '777 Patent describes that the seal can be formed from a variety of materials (“any suitable resilient sealing or elastomeric material such as polymers, rubbers, plastics, and the like”) and shapes (as shown in FIGS. 6, 6A, 7, 7A, 8, and 8A)—e.g., with or without apertures, and with or without notches. EX-1001, 8:6-10:2. The '777 Patent describes that the various sizes and shapes of seals 18 are insertable into the aperture 32 to couple the seal 18 to the flashing 16. EX-1001 9:8-10:2. In some embodiments, the seal includes a notch 45, sized to receive the flashing 16 therein, to form a compression seal by being held against

the concave interior side 26 of the flashing 16. EX-1001 8:44-48. Various seals having differing shapes and forms are disclosed by the '777 Patent and are illustrated below:



EX-1001, FIGS. 6A, 7, 8, 8A (annotated with colors and labels)

43. Although the '777 Patent describes that “[t]he washer 72 and the seal 18 work together to prevent or inhibit entry of water or other fluid into the aperture,” the '777 Patent does not provide any details of how the washer and seal work together, nor does it identify which of the various disclosed seals work better or worse than others.

44. The '777 Patent describes well-known components, each component being used for its intended purpose with no attempt by the inventor to explain the benefit achieved over prior art combinations of the same components. The Challenged Claims recite the basic elements of flashing, seal, bracket, fastener or screw, and washer, configured or formed in particular ways. EX-1001, __.

Independent Claim 1 is representative:

1. A roof mount assembly comprising:

a flashing including a top surface, a bottom surface, and an upwardly extending projection with the flashing defining a first aperture extending through the upwardly extending projection between the top surface and the bottom surface:

a preformed rubber seal including a first end portion forming a first circular disk having a first planar end surface, a second end portion forming a second circular disk having a second planar end surface, and a central portion between the first end portion and the second end portion, the preformed rubber seal defining a cylindrical second aperture centrally located in the preformed rubber seal and extending from the first planar end surface to the second planar end surface;

an L-shaped bracket supportable on the flashing, the L-shaped bracket including an elongate body portion defining a third aperture and a flange defining a fourth aperture sized to receive the preformed rubber seal and the upwardly extending projection, the fourth aperture including a first aperture portion having a first cylindrical shape and defining a first diameter and a second aperture portion having a second cylindrical shape and defining a second diameter that is less than the first diameter;

a washer including a polymeric compression portion and a rigid backing portion and defining a fifth aperture; and

a screw including a head and extending through the first aperture, the cylindrical second aperture, the fourth aperture, and the fifth aperture, to secure the L-shaped bracket and the flashing and inhibit fluid flow through the first aperture.

EX-1001, 33:32-64.

B. Prosecution History

45. The application for the '777 Patent was filed on January 26, 2020.

EX-1001, cover.

46. I have been informed that the Challenged Claims were first added in an Amendment filed March 31, 2020, and some were subsequently amended on April 1, 2020. EX-1002, pp. 168-176.

47. I have been informed that the only prior art rejection made against the Challenged Claims was for non-statutory double patenting, in particular, as being unpatentable over claims 22-33 of U.S. Pat. No. 8,151,522 (the “’522 Patent”). EX-1002 (Office Action dated June 10, 2020) pp. 42-49. While claims 22-33 of the ’522 Patent also recite the same basic elements of “flashing,” “bracket,” “seal,” “fastener,” and “washer,” I have been informed that the Examiner noted that the ’522 Patent “lacks the specific seal and washer material, and bracket and fasteners used.” EX-1021, 23:22-24:62; EX-1002, pp. 42-49. It is my further understanding that the Examiner stated, “*Applicant’s disclosure lends no criticality to the specific seal and washer material and fastener used...*”¹ *Id.* Indeed, according to the Examiner: “*The specific seal, fastener and washer used are considered features best determined by a skilled artisan.*” *Id.*

¹ Unless otherwise indicated, all ***bold italic*** emphasis herein has been added. Claim language is quoted in *italics* throughout this petition to distinguish it from other quoted material.

C. Claim Construction

48. I have been informed and understand that in order to properly evaluate the '777 Patent, the terms of the claims must first be interpreted. I have also been informed and understand that claim terms are given their plain and ordinary meaning as would be understood by one of ordinary skill in the relevant art unless the inventor, has set forth a special meaning for a term.

49. In order to understand the meaning of the claims, I have reviewed the entirety of the '777 Patent (EX-1001) and its prosecution history (EX-1002). Consistent with these standards, in my opinion, no specific construction of any claim term is required because the prior art that I rely on in my Declaration meets or discloses each of the claim terms under any reasonable construction.

D. Priority Date of Claims

50. For the purposes of this *Inter Partes* Review, I have been instructed to assume that the effective filing date of each of the Challenged Claims is no earlier than March 19, 2009

E. State of the Art

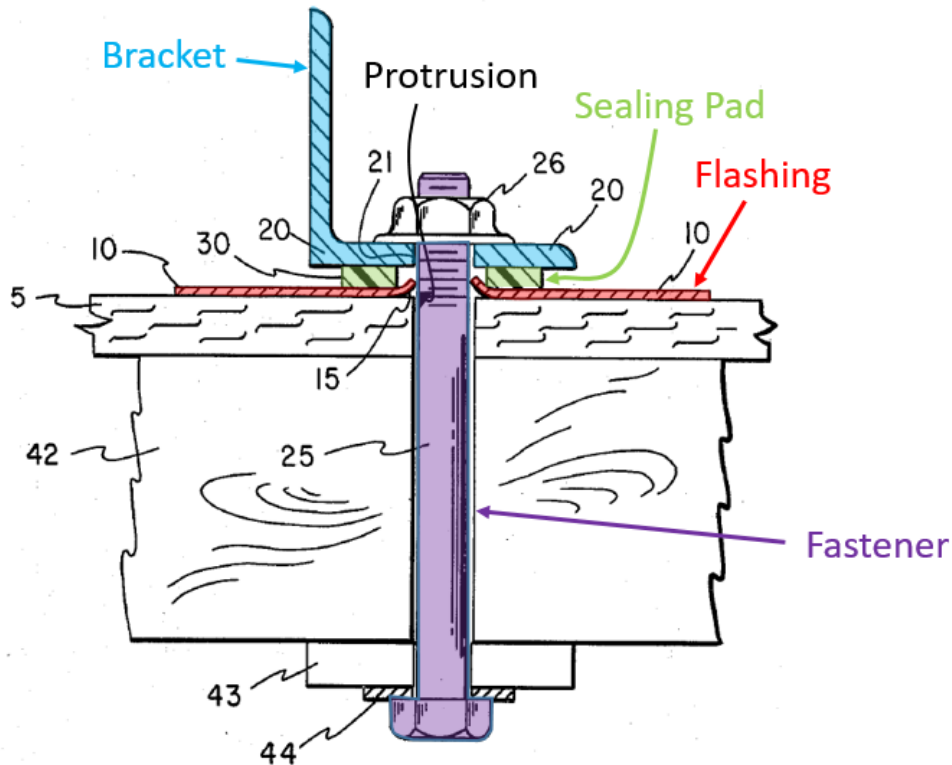
51. The following section describes the state of the art for systems for mounting various structures onto roofs as of March 2009, the earliest effective filing date for claims of the '777 Patent. The prior art references, and the discussions of what was known to a POSA, provide the factual support for the

general description of the state of the art at the time of the invention and provide additional motivation to modify or combine the references.

52. By March 2009, systems for mounting various structures—such as antennas, solar panels, railings, snow rails, billboards, electrical service conduits, satellite dishes, etc.—onto roofs were well developed.

53. A known recurring problem in roof mounting systems is leaking. Typically, a mounting support is connected to a roof structure by securing a bolt through roof flashing. The hole through which bolt secures the mount to the roof provides an opportunity for water penetration which can cause damage to underlying roof structure or interior of the structure. Various types of flashing, seals and sealers have been used to minimize or prevent water leakage.

54. For example, a known prior art roof mounting system included an L-shaped mounting bracket 20 (blue) which is fastened and sealed to a roof surface 5 using a mounting bolt 25 (purple) that is inserted through a hole in the flashing 10 (red) which was surrounded by a sealing pad 30 (green) and engages a nut 26. EX-1010, 1:61-2:55, FIG.



EX-1010, FIG. (annotated with color and labels).

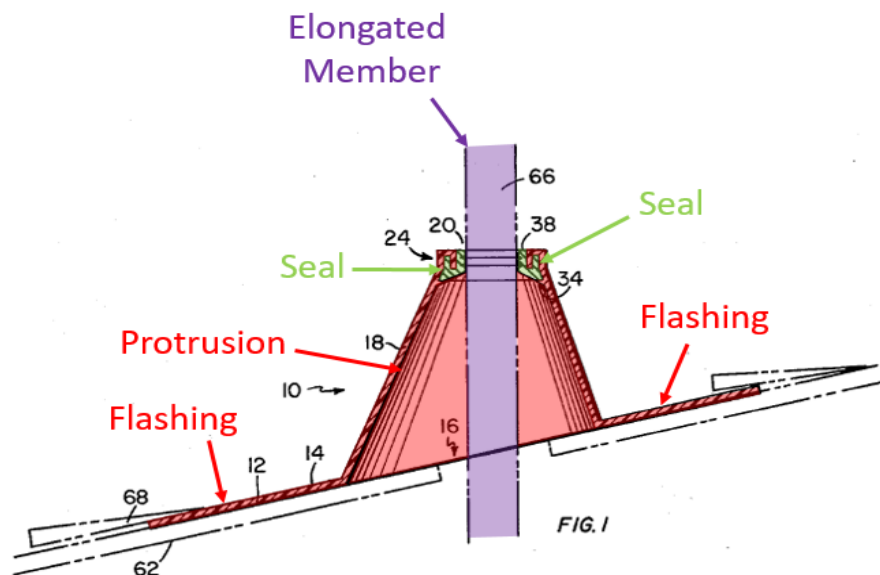
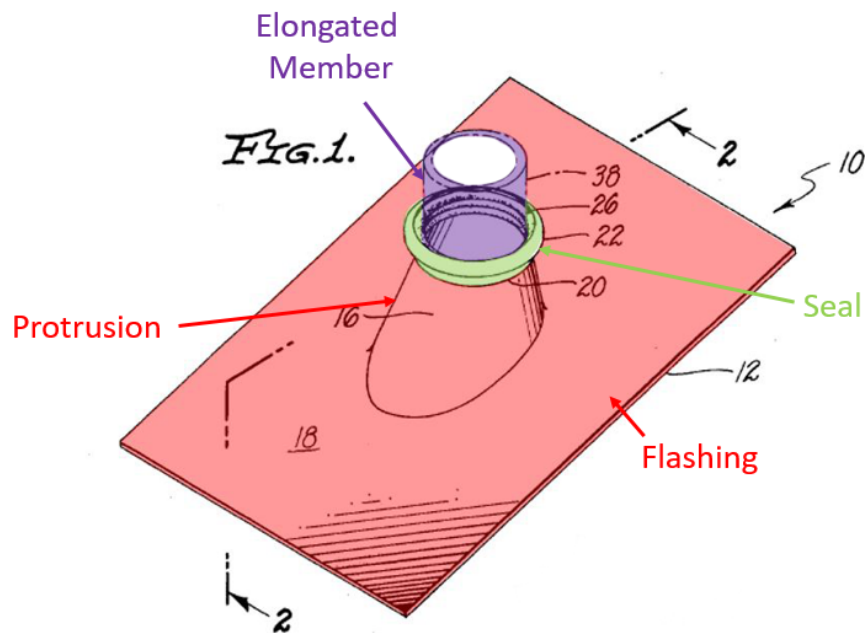
55. The flashing included a protrusion which is described as an upwardly directed flared hole 15. EX-1010, 2:3-25. The upward-flared surface (walls of the hole) were described as “the primary barrier against water penetration” because “[i]t provides a mechanical means to prevent water travel into the bolt hole, *e.g.*, because water must travel upward, against gravity, in order to gain access to the hole.” *Id.*

56. A mounting pad 30 (green) was applied to the roof flashing over the upwardly flared hole 15 to act as a seal. *Id.*, 1:38-47. The bolt 25 “engages the mounting support and the underside of the roof element so as to secure the

mounting support to the roof surface with the pad and the flashing pressed therebetween [to provide] a reliable, water-tight seal.” *Id.* Additionally, in a belts and suspenders approach, a sealant could be applied to the bolt and to the flashing, as an additional barrier against water penetration.

57. It was also well-known to a POSA that such flashing structure would be improved by inserting a preformed seal in such protrusion. The seal would be formed in a variety of shapes and configurations, as appropriate for the particular situation. EX-1006 (Thaler), FIGS. 1, 5, 6, 7; EX-1010, 1:5-2:60, FIG.; EX-1013, 1:5-4:9, FIGS. 1-3; EX-1014, 1:10-4:27, FIGS. 1-4; EX-1015, 1:15-4:57, FIGS. 1-3; EX-1016, FIGS. 2-7, 10, 11, 14-21; EX-1017, FIG. 1; EX-1018 , FIGS. 1-8. EX-1019. The figures below (annotated with colors and labels) demonstrate that it was known to place a seal (green) at the aperture formed by a flashing protrusion (red) to form a water-tight seal with an elongated member (purple) extending through the aperture to protect the integrity of the roof:

FLASHING PROTRUSIONS AND SEALS



EX-1014, FIG. 1; EX-1017 FIG. 1.

58. A POSA also understood that roof mounting systems used a variety of conventional components for construction, such as flashings, tiles, brackets, bases,

seals, fasteners, washers, formed or configured in various ways. A POSA understood that the conventional components for roof mounting systems, in their various forms and configurations, would be combined in different ways, as appropriate or most suitable for a particular mounting situation, addressing the specific problems encountered for the specific environment in which it was used. For example, depending on the type of roof (e.g., flat, shingled, tiled), design and mounting considerations (e.g., low-profile, angle of sun), etc., it was well-known that a bracket for attaching a structure could be formed in a variety of shapes and configurations, including bases in solid or “U” shapes with threaded portions extending upwardly or holes to receive fasteners vertically; mounts with extensions formed in “L” or “Z” shapes for attachment with clamps or fasteners horizontally; stanchions integral to, or separate from, a base or other mount to provide, e.g., stand-off from the roof surface. EX-1008, FIGS. 3-4, 7-8; EX-1010, 1:5-2:60, FIG.; EX-1011, 1:9-2:24, 3:1-6:30 (“[b]ase member 12 and mount 14 can take various shapes”), FIGS. 1-15; EX-1012, 1:30-2:40, 3:9-5:60, FIGS. 1-13; EX-1020, FIGS. 2A-7. The figures below (annotated with colors and labels) demonstrate that it was known to use a variety of configurations and shapes of brackets or stanchions (blue) affixed to a roof with fasteners (purple) to provide support for structures attached to roofs:

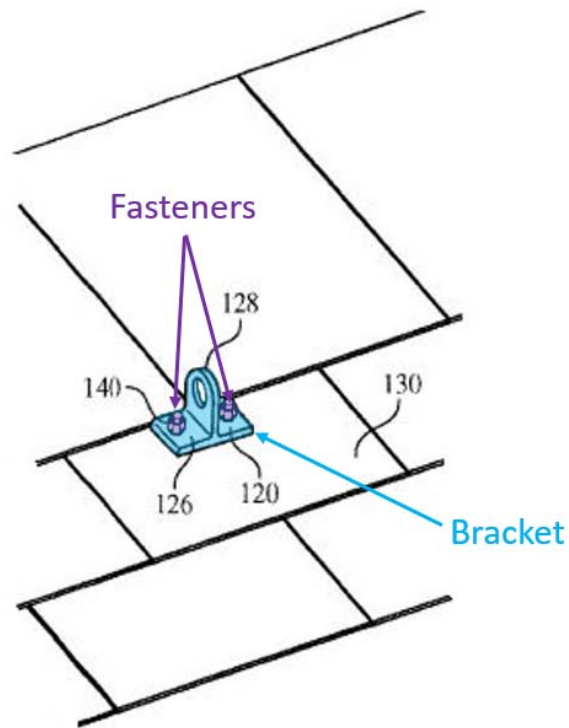
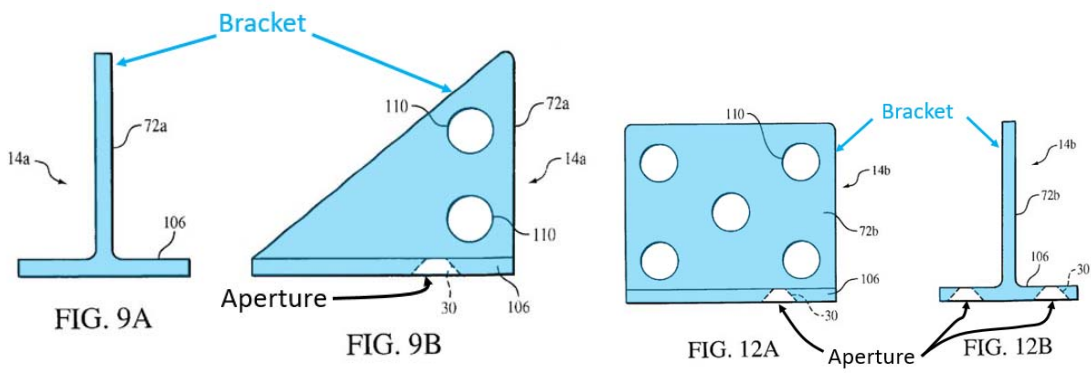
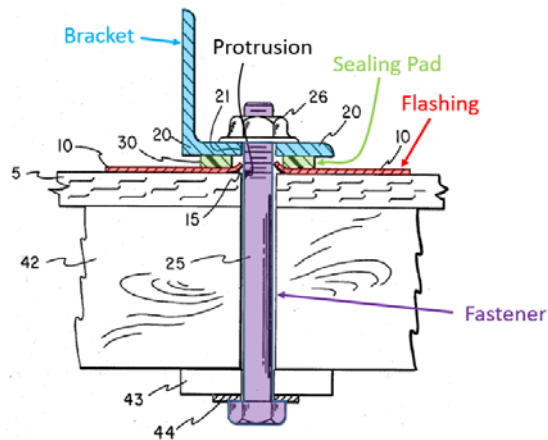
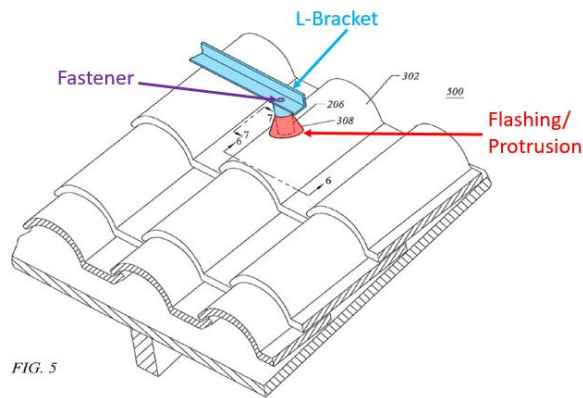
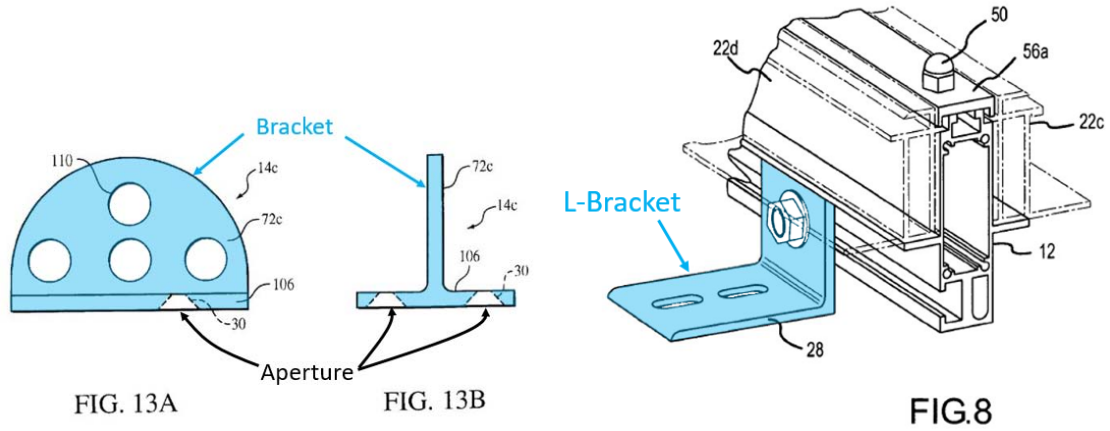


FIG. 15





EX-1010, FIG. 1; EX-1011, FIGS. 9A, 9B, 12A, 12B, 13A, 13B, 15; EX-1012
FIG. 8; EX-1020, FIG. 5.

VII. Challenges

A. Challenge 1: Claims 10-14 and 1-5 are unpatentable over Wentworth, Thaler, and Glicksman.

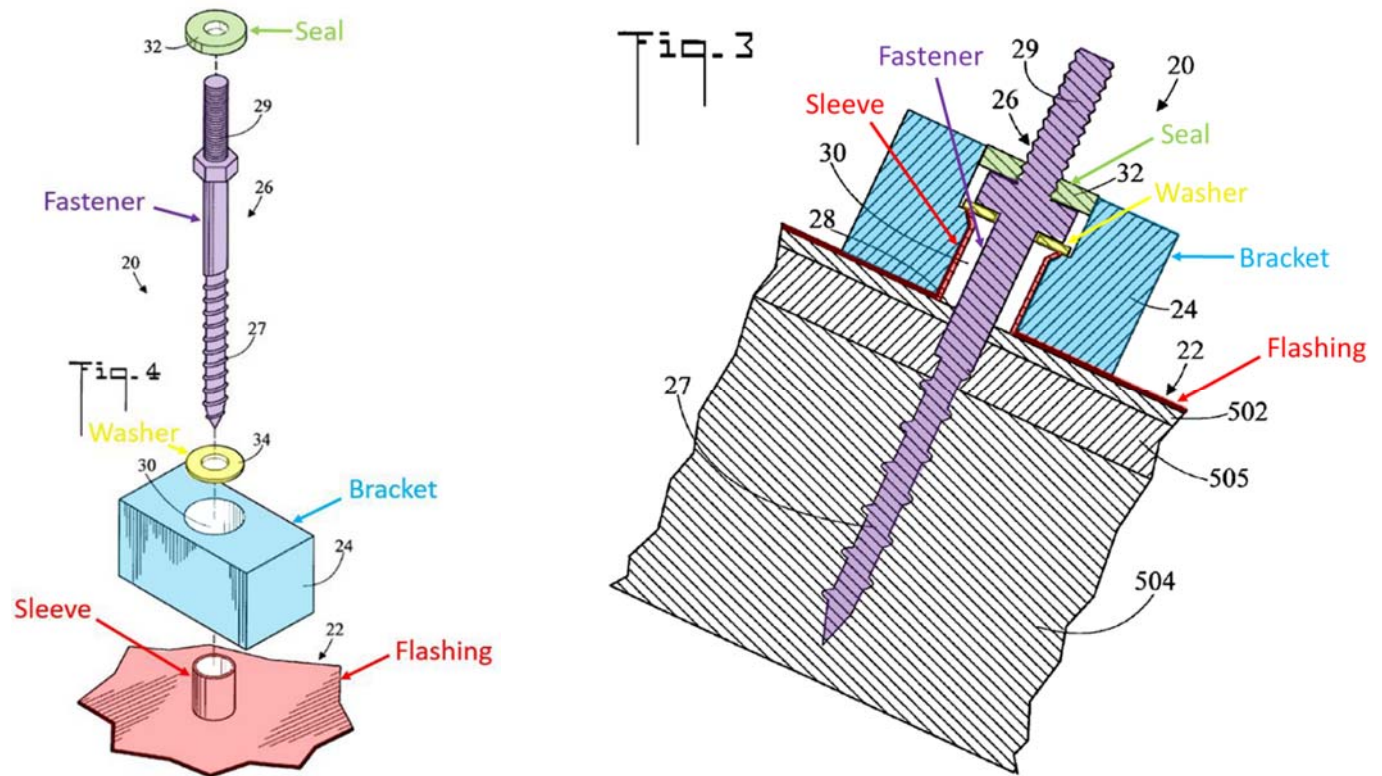
1. The Wentworth Reference

59. U.S. Pat. No. 7,762,027 (“Wentworth,” EX-1005), titled “System for Attaching an Article To a Roof and Method of Use,” issued on July 27, 2010 from an application filed on September 28, 2006, and as such, it is my understanding that this reference qualifies as prior art. While Wentworth is cited on the face of the ’777 Patent, it is one of hundreds of references so cited. EX-1001, cover. It is my understanding that Wentworth was not discussed by the examiner nor was it used to reject any claims during prosecution of that patent.

60. Wentworth is analogous prior art for the ’777 Patent, as it is in the same field of endeavor—i.e., roof mounting or attachment systems directed to the same problem and providing the same solution, e.g., “[t]o minimize the possibility of water leaks, it is desirable to both minimize the number of roof penetrations and to ensure that the penetrations are water tight.” EX-1005, Title, Abstract, 1:21-24.

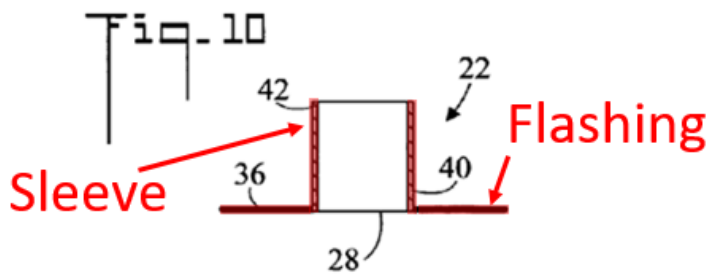
61. Wentworth generally relates a “system for attaching an article to a roof having shingles disposed on top of a structural member includes a flashing member....” EX-1005, Abstract. Wentworth’s system or assembly includes the basic components of the ’777 Patent’s claims—i.e., a flashing 22 (red), a seal 32

(green), a stanchion or bracket 24 (blue), a washer 34 (yellow), and a fastener 26 (purple). EX-1005, 3:6-4:29, FIGS. 2-21.



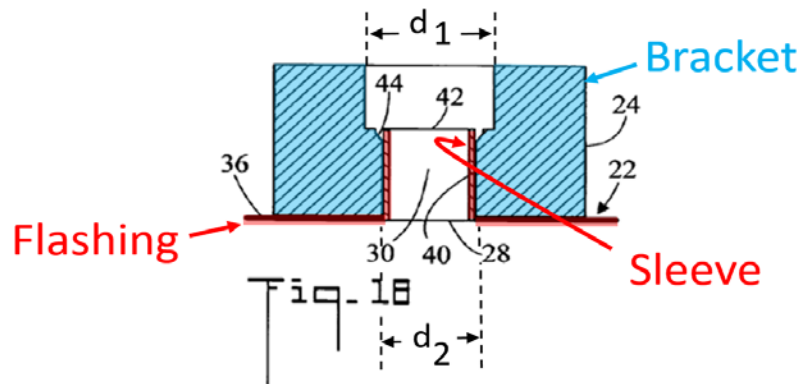
EX-1005, FIGS. 3, 4 (annotated with color and labels).

62. Wentworth's flashing 22 (red) includes an upstanding sleeve or protrusion 40 (red) which surrounds an aperture 28 in the flashing, as shown in FIG 10. EX-1005, 3:35-50.



EX-1005, FIG. 10 (annotated with color and labels).

63. The stanchion or bracket 24 is used in conjunction with the flashing member to attach an article (such as a solar panel) to the roof. EX-1005, 1:13-36, 4:30-64, FIGS. 1-5, 20-22. The bracket (blue), with a height that “may be varied to accommodate various article installation needs,” includes an aperture or hole 30 which is “shaped and dimensioned to receive sleeve 40” (red) of the flashing member (red) as shown in FIG. 18. EX-1005, 3:51-4:19.



EX-1005, FIG. 18 (annotated with color and labels).

2. The Thaler Reference

64. U.S. Pat. No. 6,185,885 (“Thaler,” EX-1006), titled “Roof Flashing Assembly,” issued on February 13, 2001 from an application filed on January 8, 1999. It is my understanding that as such, Thaler qualifies as prior art, and was not cited or applied by the examiner during the ’777 Patent prosecution.

65. Thaler is analogous prior art for the ’777 Patent, as it is in the same field of roofing systems and directed to the same problem and proposes the same solution, e.g., “[i]n other applications, including support members for roof mounted apparatus, it is critical to provide a long lasting, water tight seal of any gap that exists between the flashing and the projecting member. EX-1006, Title, Abstract, 1:24-29.

66. Thaler discloses an assembly comprising a flashing with a base portion 32 (red), a projection or boss portion 34 (red) extending from the base portion, and a resilient grommet 40 (green) insertable in the boss portion 34 “in resilient sealing engagement” with the elongated member 26 (purple). EX-1006, 4:55-5:11, 6:48-7:15, FIGS. 3-5.

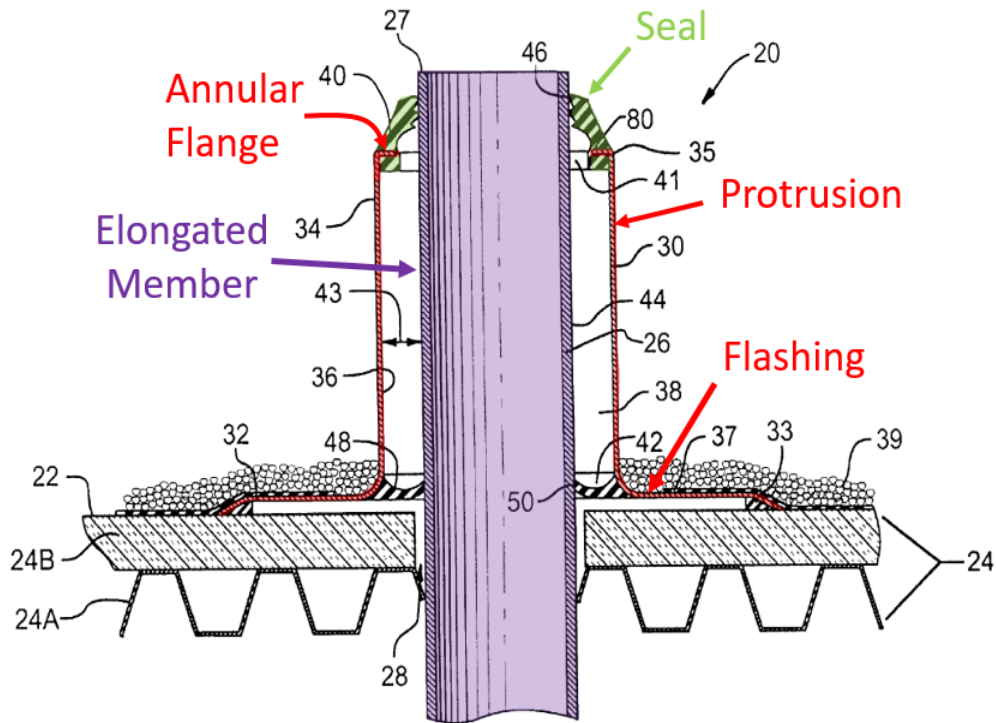
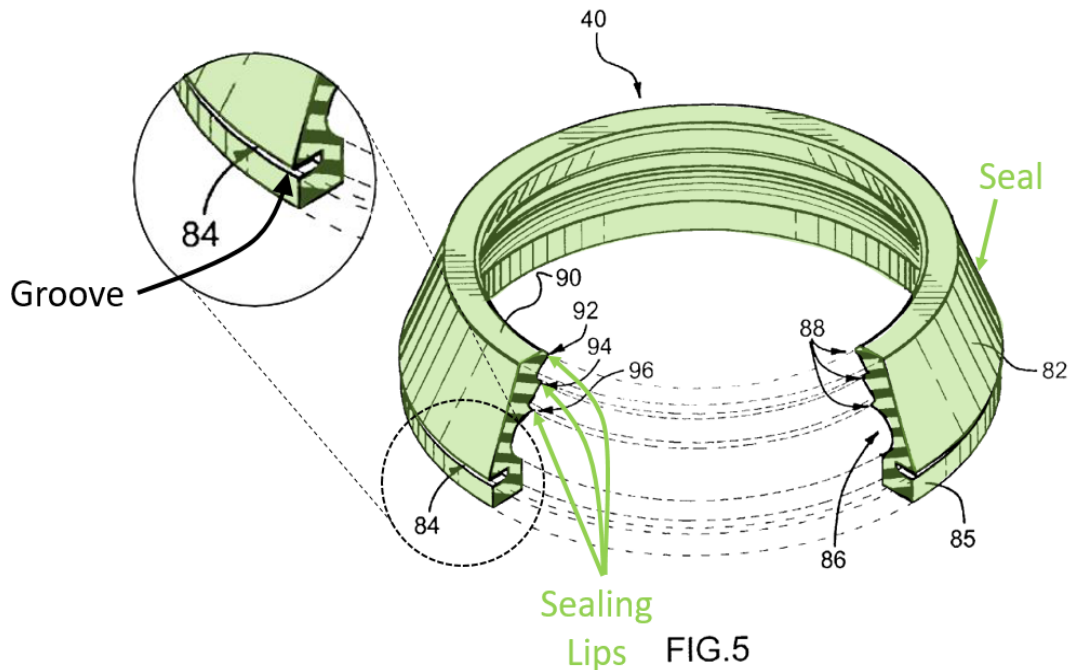


FIG.1

EX-1006, FIG. 1 (annotated with color and labels).

67. Like the seal in the '777 Patent that is inserted into the aperture of the flashing and uses a notch 45 sized to receive the flashing, Thaler discloses that its grommet seal is inserted in the aperture at the boss portion of the flashing with a groove 84 sized to be in “sealing engagement with the annular flange portion of the roof flashing member.” EX-1006 3:56-59.



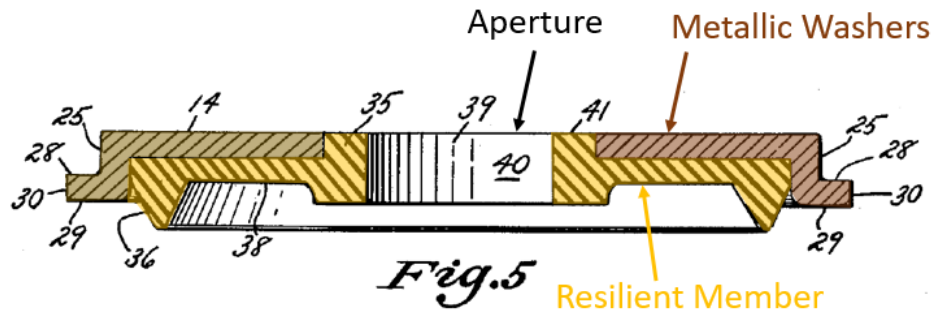
EX-1006, FIG. 5 (annotated with color and labels, with portion expanded).

68. Further, like the seal in the '777 Patent, Thaler discloses that the sealing lips 88, 92, 94 96 positioned on the interior grommet surface resiliently seal against the outer perimeter surface of the elongate member. EX-1006, 3:59-63.

3. The Glicksman Reference

69. U.S. Pat. No. 3,168,321 ("Glicksman," EX-1007), titled "Composite Washer Construction," issued on February 2, 1965 from an application filed on February 18, 1964. It is my understanding that as such, Glicksman qualifies as prior art, and was not cited or applied by the examiner during the '777 Patent prosecution. Glicksman discloses a composite washer comprising "a metallic

washer element 11 (brown) and a resilient washer element 12 (tan),” as seen in FIGS. 3-5. EX-1007, 2:1-4.



EX-1007, FIG. 5 (annotated with color and labels).

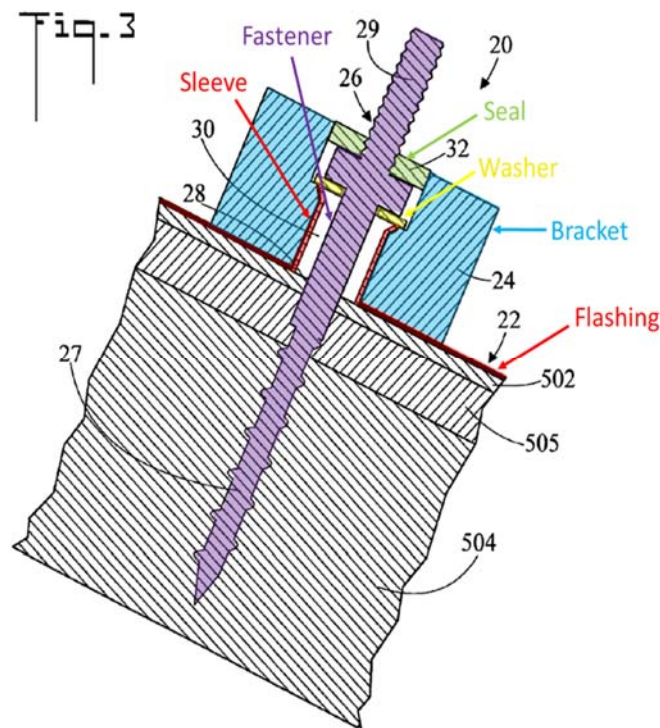
70. Glicksman describes that these types of composite washers are known in the art as “sealing washers” which are designed to be “disposed beneath a screw head or similar fastening structure, and to be pressed against the flat surface of a sheet metal body or casing to effect a hermetic seal.” EX-1007 1:8-13.

4. Motivation To Combine Wentworth, Thaler, and Glicksman

71. A POSA would have found it obvious, and indeed would have been motivated, to combine the teachings of Wentworth, Thaler, and Glicksman for multiple reasons, including to follow the express teachings in the references themselves. Doing so would involve no more than the use of prior art elements according to known methods to yield predictable results.

72. All of these references are in the field of construction and are concerned with preventing leaks. EX-1005, Abstract, 1:6-2:24; EX-1006, Abstract, 1:4-4:13; EX-1007, 1:7-2:69.

73. Wentworth's system "includes a weatherproof flashing member which is...connected to an upright mounting stanchion." EX-1005, 1:30-34. The flashing 22 has an upstanding sleeve 40 which surrounds an aperture, and the stanchion or bracket 24 includes a hole 30 that is "shaped and dimensioned to receive [the] sleeve 40." EX-1005, 3:36-4:19; FIGS. 2-21.



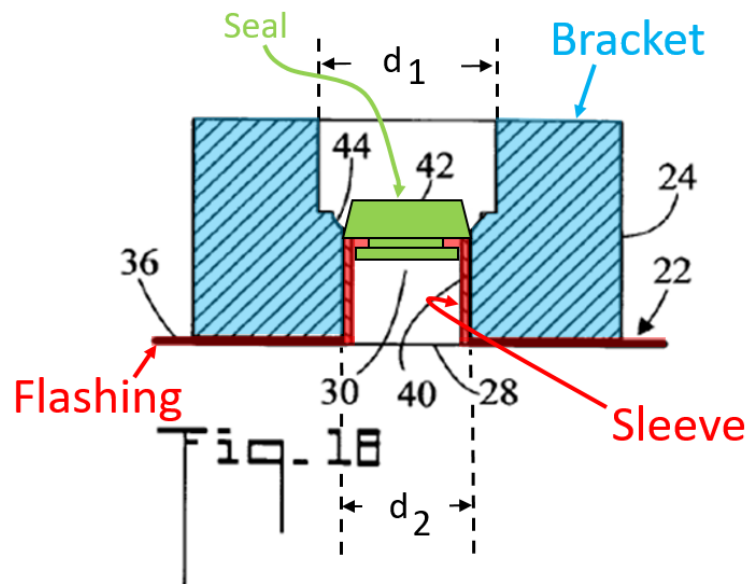
EX-1005, FIG. 3 (annotated with color and labels).

74. Wentworth's assembly discloses a seal 32 to prevent water from leaking into the hole 30 of stanchion, and further through the aperture of the flashing 22. The seal 32 is located at the top of the stanchion, and is not held in place by the compressive force of the fastener, but instead is located external to the fastener, uncovered and potentially exposed to the elements, and thus may deteriorate, degrade or loosen over time such that water is able to leak through the hole in the flashing projection.

75. Thaler teaches a solution—inserting a grommet or seal “in resilient sealing engagement” into a projection or boss portion of a flashing to prevent water leak: “resilient grommet 40 being assembled on the upper end 35 of the boss portion 34 in resilient sealing engagement with the annular flange portion 80 of the body member 30.” EX-1006, 1:47-67, 6:48-7:15. Using a grommet seal taught by Thaler at the aperture at the upper end of sleeve 40 of Wentworth would advantageously place the grommet seal under the compressive force of the fastener and tend to hold the grommet in place to resiliently seal the outer perimeter of the fastener. EX-1006 3:59-63. Moreover, Wentworth teaches that the aperture of the stanchion accepts the sleeve and thus it would be sized to accept the seal inserted at the top of the sleeve and held in place by the fastener. EX-1005, 3:50-58. Further, Thaler teaches that its grommet seal can include a groove to receive the flashing at

the top of the sleeve of Wentworth so that the grommet is “in resilient sealing engagement” with the flashing projection as shown with reference to Fig. 18 of Wentworth as annotated in the figure below. EX-1006 3:56-59.

“Modified to include seal inserted into aperture at top of sleeve”



EX-1005, FIG. 18 (annotated with color and labels).

76. A POSA would thus be motivated to add Thaler’s grommet in resilient engagement in the projection or sleeve of Wentworth’s flashing to prevent water from leaking through the flashing aperture because doing so would have been the mere application of a known technique to a piece of prior art ready for improvement. EX-1006, 1:47-67 (“It is known in the prior art for grommet seals to be utilized to seal gaps between pipes or stacks and flashing”). Similar type seals

inserted into the aperture formed by a flashing protrusion were known as discussed in the State of the Art above. EX-1014, FIG. 1; EX-1017, FIG. 1.

77. Further, Wentworth teaches the use of a “washer” with the fastener, and although not expressly stated in Wentworth, a POSA understood that a “sealing washer” of the type taught by Glicksman could be used. Indeed, Glicksman teaches that “the cost of fabrication [of its sealing washer] may be of a reasonably low order, thereby permitting consequent wide sale, distribution and use.” EX-1007, 1:37-42. A POSA understood that it would be appropriate to use a sealing washer as taught by Glicksman because the sealing washer would also provide a boundary to prevent leakage around the fastener and through an aperture. A POSA in March 2009 further understood that the various techniques to address leaking in roof mounting systems would not be mutually exclusive. Instead, given the criticality of this problem, a POSA would be motivated to use multiple measures (“belt and suspenders”) to prevent leaking, including using the sealing washer of Glicksman as the washer 34 of the Wentworth assembly, as modified by the teachings of Thaler. The use of the Glicksman washer could improve the sealing properties because, as would be understood by a POSA, an interface of resilient material to resilient material would be more resistant to water penetration as compared to an interface of resilient material to a rigid material (that is

unbonded). EX-1007, 2:22-23. A POSA would also understand that the Glicksman washer would provide a uniform downward compressive force caused by tightening the fastener, spread evenly over the seal disposed beneath the washer and cause the seal to spread laterally and come into contact with the sidewall of the aperture in the to seal the opening in the bracket adjacent the flashing. While use of the washer provides benefits in sealing, the use of a washer, and type of washer, would have been simply a matter of design choice to a POSA, as even the '777 Patent admits that the washer can be “omitted.” EX-1001, 6:66-67, 11:13-25. Indeed, as recognized by the Examiner during prosecution of the '777 Patent, in a roof mounting assembly of the kind described in the patent, “[t]he specific seal, fastener and washer used are considered features best determined by a skilled artisan.” EX-1002, pp. 42-49.

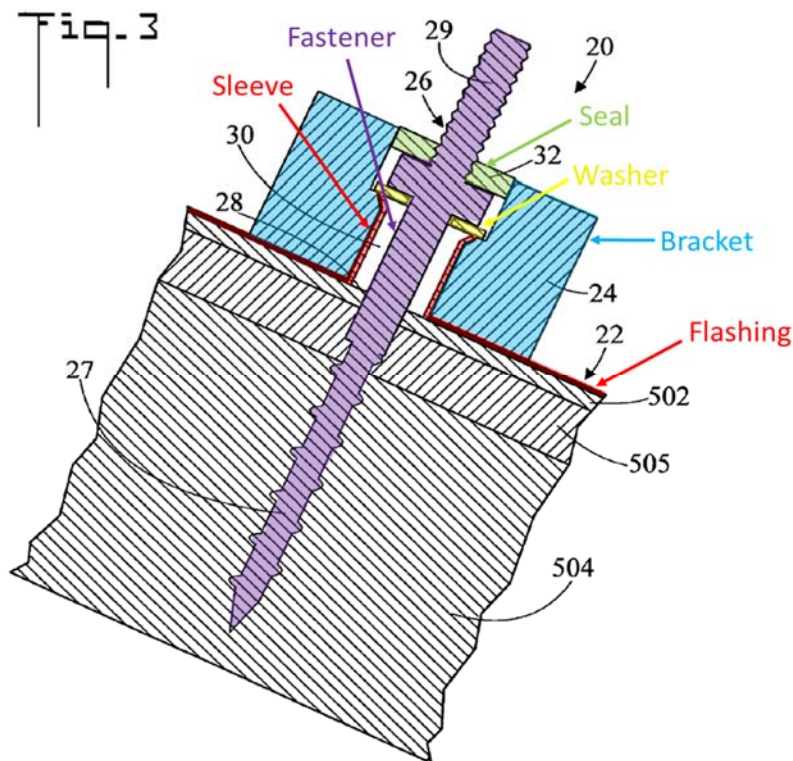
78. Combining the teachings of Wentworth, Thaler, and Glicksman in this way would have been no more than the combination of prior art elements for their intended purposes according to known methods to yield predictable results. Additional reasons for combining the references are provided below.

5. Detailed Invalidity Analysis

a. Claim 10

i. [10pre] “A roof mount assembly comprising:”

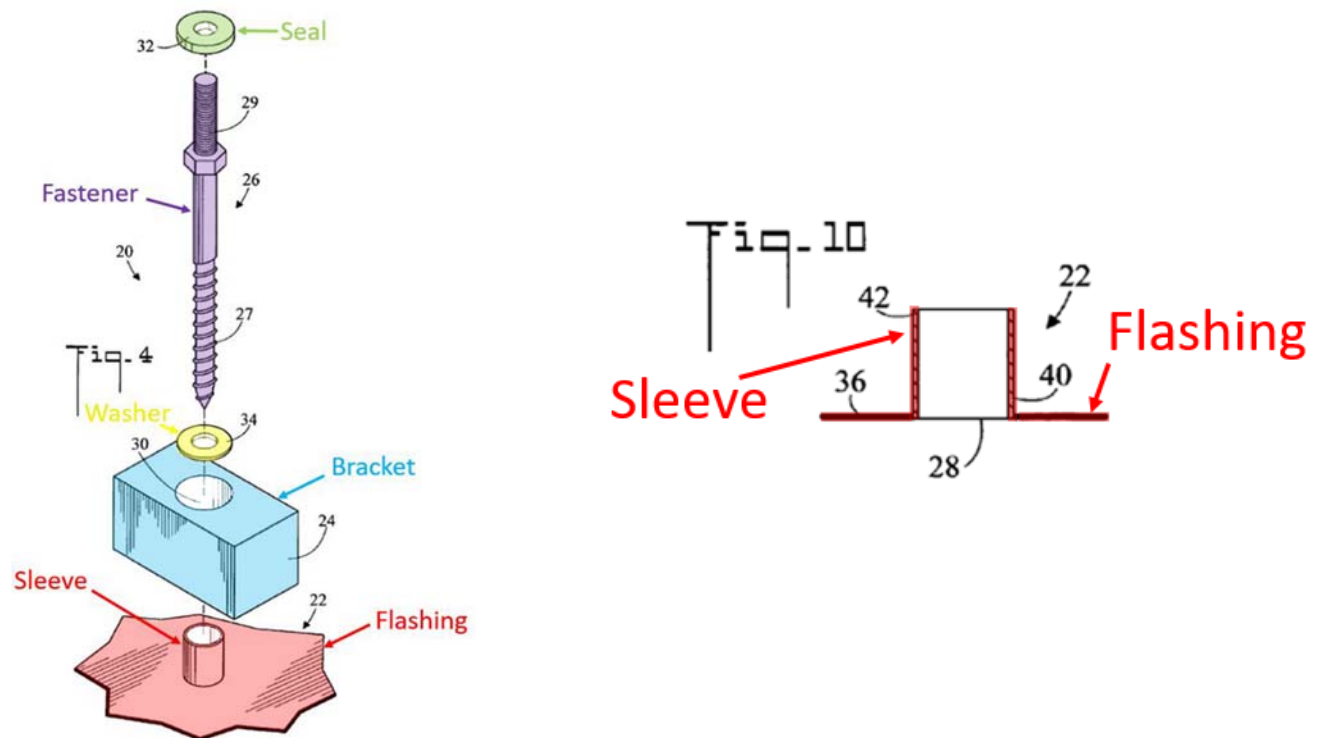
79. Wentworth discloses a “roof mount assembly.” EX-1005, Abstract, 1:27-2:24, 3:6-4:49, FIGS. 2-21. For example, Wentworth states: “*The present invention is directed to a system for attaching articles such as photovoltaic panels to a roof....*” EX-1005, 1:27-36. This system “*includes a weatherproof flashing member which is rotatably connected to a upright mounting stanchion. A single lag bolt attaches the system to the structural member of the roof.*” *Id.*



EX-1005, FIG. 3 (annotated with color and labels).

- ii. [10a] “a flashing including a top surface, a bottom surface, and an upwardly extending projection defining a first aperture;”

80. Wentworth discloses “a flashing including a top surface [and] a bottom surface” in that Wentworth’s assembly includes a “**flashing member 22**” with a top surface facing away from the roof, a bottom surface facing towards the roof. EX-1005, Abstract, 3:6-50, FIGS. 3, 6, 7. Wentworth further discloses that the flashing includes “an upwardly extending projection defining a first aperture” in the form of an “**upstanding sleeve 40 which surrounds aperture 28.**” *Id.* Thus, Wentworth discloses this element.



EX-1005, FIGS 4, 10 (annotated with color and labels).

- iii. [10b] “a rubber seal including a first end portion, a second end portion and a central portion between the first and second end portions, the rubber seal defining a cylindrical second aperture

through the first end portion, the second end portion, and the central portion, the cylindrical second aperture being normal to a first outside surface of the first end portion and a second end surface of a second end portion;”

81. The combination of Wentworth, Thaler, and the knowledge of a POSA teaches or renders obvious this element.

82. Wentworth discloses “*seal*” in the form of a “*plug 32 made of rubber or the like...for sealing hole 30 to prevent water leaks,*” where such rubber seal (plug 32) has cylindrical aperture for sealing around the fastener or bolt 26. EX-1005, 3:28-30. For the reasons discussed in the Motivation to Combine Section, a POSA would be motivated to use the sealing grommet taught by Thaler with the teachings of Wentworth.

83. Thaler teaches using a sealing grommet inserted into a flashing protrusion to make a watertight seal against an elongate member passing through the aperture. Thaler discloses a “*rubber seal*” in the form of a “*resilient grommet 40.*” EX-1006, 6:54-7:15, FIGS. 1, 5. Thaler teaches that such resilient material can be an “*elastomeric material, such as rubber or polyurethane, such materials being relatively inexpensive, easily moulded to the desired shape, and capable of providing long-lasting resilient waterproof and weather resistant seals.*” EX-1006, 6:32-36.

84. With respect to annotated FIG. 5 below, Thaler discloses that its grommet has a top surface 90 at a top end (*“first end portion”*), a bottom portion having a surface (*“second end portion”*) and central portion between the top and bottom portions (*“central portion”*), and an interior grommet surface 86 (*“cylindrical second aperture”*) through the first end portion, the second end portion, and the central portion. EX-1006, 6:63-66, FIG. 5. As such, Thaler discloses its seal or grommet *“including a first end portion, a second end portion and a central portion between the first and second end portions.”* EX-1006, 6:54-62, FIG. 5. Thaler discloses *“the rubber seal defining a...third aperture through the first end portion, the second end portion and the central portion,”* because its resilient grommet has a circular aperture extending through all three portions. EX-1007, FIGS. 1, 5.

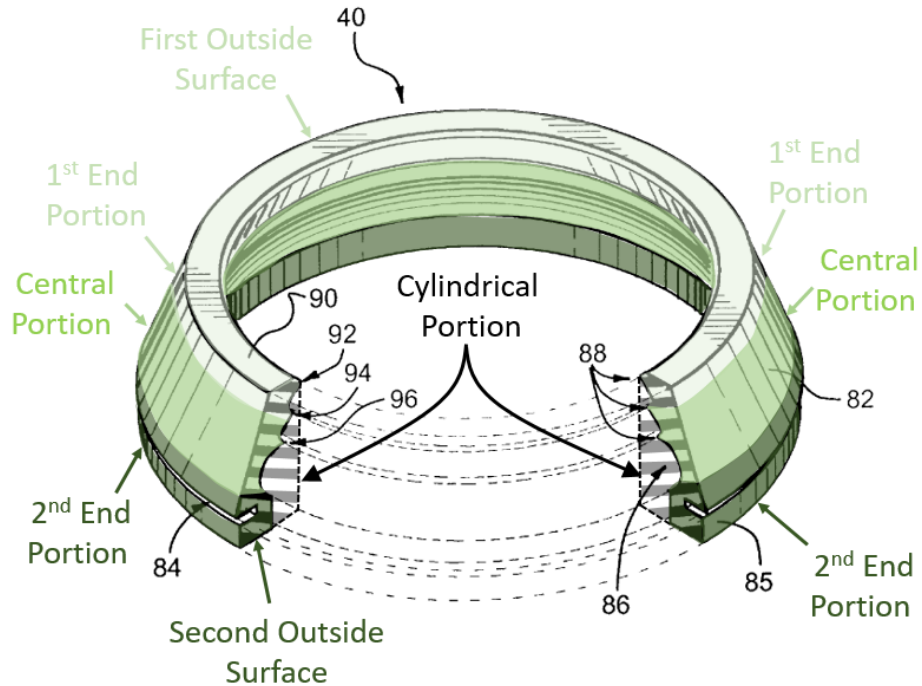


FIG.5

EX-1006, FIG. 5 (modified to show cylindrical internal grommet surface and annotated with color and labels).

85. Although the interior surface of the resilient grommet in Thaler is not “cylindrical,” it would have been obvious considering the Wentworth rubber seal (32), and indeed, a POSA would have been motivated to modify Thaler’s resilient grommet so that its interior grommet surface 86 is “*cylindrical*” in shape (as illustrated in the figure above), where “*the cylindrical second aperture being normal to a first outside surface of the first end portion and a second end surface of a second end portion*” for the reasons stated below.

86. Thaler already teaches the basic principle of the '777 Patent at which the Challenged Claim are directed—i.e., to “inhibit flow of fluid through the aperture” formed in a flashing projection with a “seal...sized to form a water-tight seal with the aperture” in the flashing. EX-1006, 6:48-7:15, FIGS. 1-5; EX-1001, Abstract, 8:44-58, 33:31-36:34. Thaler states, for example, that its “resilient grommet 40 being assembled on the upper end 35 of the boss portion 34 in resilient sealing engagement with the annular flange portion 80 of the body member 30.” EX-1006, 6:57-60. While Thaler depicts one grommet configuration which seals a hole in a flashing protrusion associated with pipes, Thaler teaches that the grommet can be shaped in other forms as appropriate for other situations. EX-1006, 1:30-2:21, 5:26-42, 6:48-7:15.

87. For the particular situation of Wentworth, the aperture in the flashing projection is associated with a fastener, as opposed to a pipe, and as such, is smaller. Thus, when forming Thaler’s grommet seal for Wentworth’s assembly, the grommet would be made smaller as compared to an application for pipes.

88. Given the difference in size, the need for structural integrity of the grommet, and the shape of the flashing projection in Wentworth, a POSA would not simply reduce the scale of the grommet embodiment depicted in the figures of Thaler for use in the Wentworth assembly; other changes or adjustments would be

necessary or desirable. For example, Thaler's sample grommet configuration has an aperture that has an interior surface that is frustoconical in shape having three sealing lips 88. EX-1006, FIGS. 1, 5. However, Thaler teaches that the frustoconical interior shape of the grommet is for the purpose of universally accommodating elongate members having "differing external diameters." EX-1006 2:5-7. A POSA understood that manufacturing a grommet with multiple internal sealing lips is more complex and costly than a grommet having a single cylindrical aperture. Thus, a grommet sized to fit the intended fastener, just like washers are sized to fit their intended fasteners, would be simpler to manufacture and less costly. Moreover, the frustoconical-shaped aperture, when scaled for the Wentworth application, would result in less contact between an individual sealing lip and the fastener extending therethrough, thus jeopardizing or reducing sealing effect. *Id.* With such modifications, the aperture of the grommet would have smooth internal surface sidewalls extending straight down, giving the grommet more structural integrity and allowing the grommet to fill in more of the void in the flashing aperture as shown in the FIG. 5 of Thaler as modified above. *Id.* Indeed, sealing grommets of this form or shape were known in the art. EX-1019, FIGS. 3c, 3d.

89. Such modification of Thaler's grommet seal for use in Wentworth's mounting system would simply be a matter of design choice for a POSA, as the Examiner recognized in prosecution of the '777 Patent that the "*specific seal*" is "*considered [a] feature[] best determined by a skilled artisan,*" and "*Applicant's disclosure lends no criticality to the specific seal...used.*" EX-1002, pp. 42-49.

90. In this arrangement, the aperture of Thaler's grommet, as modified for the Wentworth system, has a "*cylindrical*" shape, as opposed to frustoconical. Furthermore, the axis of the cylindrical aperture extends through the center of the grommet (in alignment with the center of Wentworth's flashing protrusion or sleeve 40), with such axis being perpendicular to the outside surfaces of both disk-shaped end portions, and thus, teaches "*the cylindrical second aperture being normal to a first outside surface of the first end portion and a second end surface of a second end portion.*"

91. A POSA would have had a reasonable expectation of success for combining the teachings of Wentworth and Thaler, because the use of Thaler's rubber grommet would have been a common, straightforward solution for the problem of Wentworth's assembly (sealing an opening in a flashing projection with an object extending therethrough), well within the skill of a POSA and with a

high degree of expected success. Thus, Thaler and the understanding of a POSA teach or render obvious this limitation.

- iv. [10c] ***“a bracket including a body portion and a flange portion, the flange portion defining a third aperture sized to receive the rubber seal and the upwardly extending projection”***

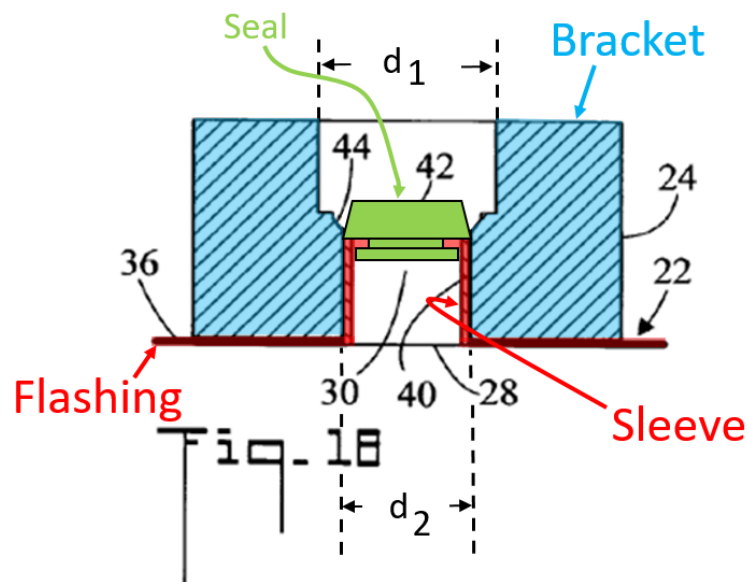
92. The combination of Wentworth, Thaler, and the knowledge of a POSA makes this element obvious.

93. As described above with respect to [10a] and [10b], Wentworth discloses a “*flashing*” having an upstanding sleeve (“*upwardly extending projection*”), and Thaler disclose a resilient grommet (“*rubber seal*”) that may be inserted into the hole of Wentworth’s flashing projection to prevent leaks.

94. Wentworth discloses or teaches “*a bracket including...a flange portion, the flange portion defining a third aperture*” in the form of “***stanchion 24***” with a portion projecting around the flashing protrusion, such flange portion having a “***hole 30***.” EX-1005, 3:20-67, FIGS. 2-5, 12-21. Wentworth explains: “***Stanchion 24 has a hole 30 for receiving sleeve 40 of flashing member 22 (refer to FIGS. 6-11).***” EX-1005, 3:60-67. Wentworth further describes that “***hole 30 in stanchion 24 is shaped and dimensioned to receive sleeve 40.***” EX-1005, 50-51. Wentworth further explains that the sleeve 40 functions as a “***coupler [that] connects the stanchion to the flashing member,***” and as such, the flashing

supports the bracket. EX-1005, 2:1-10, 3:36-67. With Thaler’s resilient grommet inserted into the hole of Wentworth’s flashing projection, as already discussed, Wentworth and Thaler thus teach or render obvious that the hole or aperture of the stanchion is “*sized to receive the rubber seal and the upwardly extending projection.*”

“Modified to include seal inserted into aperture at top of sleeve”



EX-1005, FIG. 18 (annotated with color and labels).

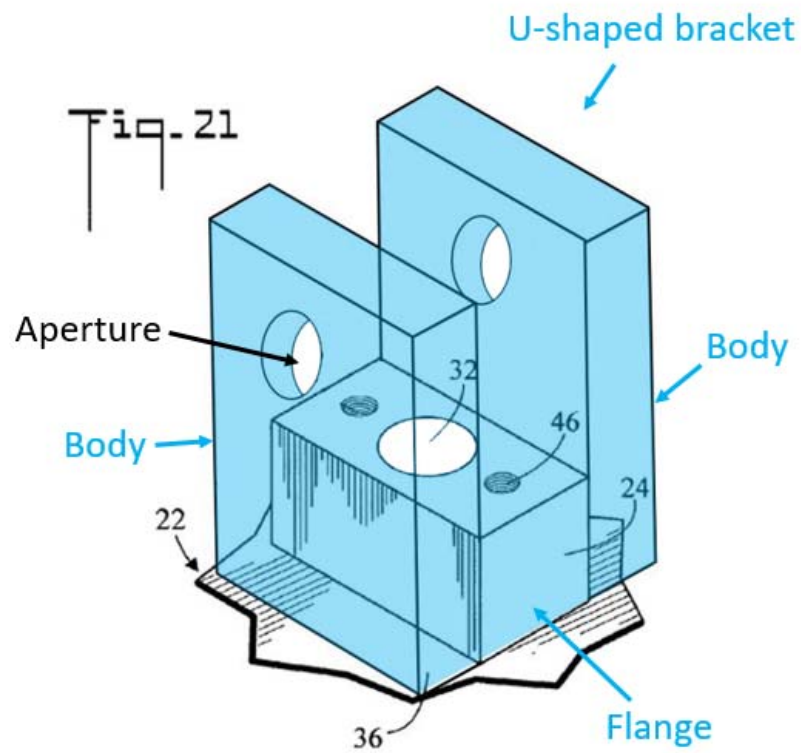
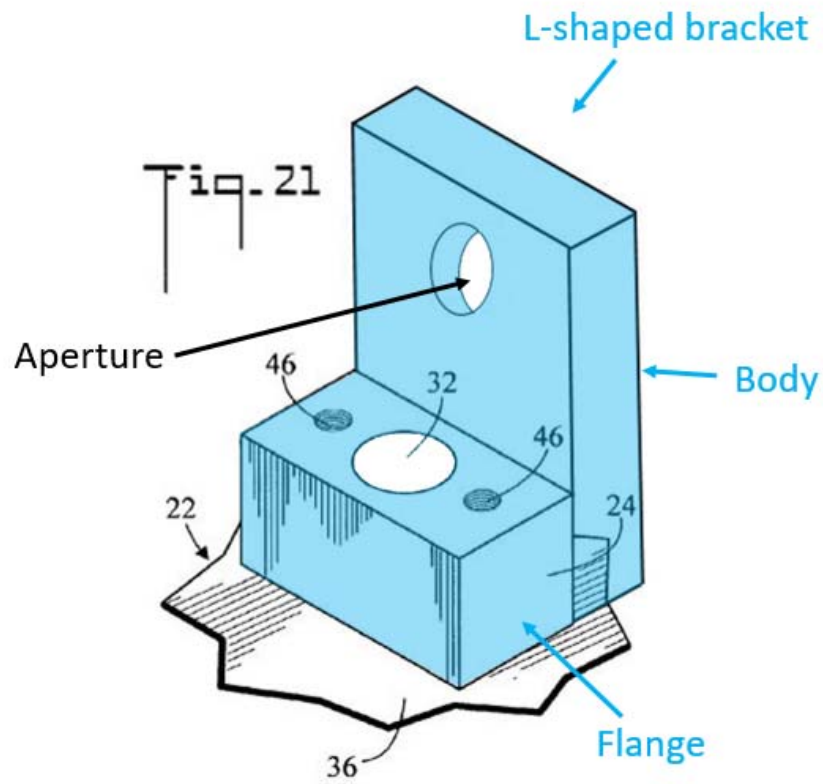
95. While Wentworth does not expressly disclose that its stanchion or bracket has a “*body portion,*” it would have been obvious to a POSA to modify the bracket to add one. Wentworth teaches that its “system 20 [is] for attaching an article to a roof 500.” EX-1005, 3:6-19. In the preferred embodiments, to

accomplish this, Wentworth's system uses a threaded post portion 29 (FIGS. 2-5) or threaded holes 46 (FIGS. 20-21) in its stanchion "for receiving hardware to attach the article to a roof." EX-1005, 3:32-34, 4:26-27, FIGS. 2, 21.

96. As admitted by the '777 Patent, the shape of the bracket is not critical to the invention, as "[t]he illustrated brackets...are shown by way of example only. Any suitable brackets can be utilized, such as any of the brackets shown and described herein" and the claimed L-shaped bracket is provided "by way of example only." EX-1001, 24:6-9, 33:14-15. A POSA understood that Wentworth's teachings, likewise, did not only apply to the disclosed stanchion, but would be useful with well-known brackets such as the L-brackets. EX-1005, 5:21-26. As described in the State of the Art section it was known to use brackets of various configurations and shapes with a body portion that extends away from the flange portion attached to the roof, such body portion elongated to have one or more apertures to receive fasteners to attach the article. EX-1010, FIG. 1; EX-1011, FIGS. 9A, 9B, 12A, 12B, 13A, 13B, 15; EX-1012 FIG. 8; EX-1020 FIG. 5.

97. A POSA would be motivated to form Wentworth's stanchion or bracket with a body portion extending away from the roof to allow for applications requiring a fastener to be positioned horizontally in the mounting assembly as demonstrated by the brackets shown in the State of the Art section. Indeed,

Wentworth itself teaches that modifications to the bracket are well within the skill of a POSA and expressly states that “the height of stanchion 24, that is the distance it extends above the plane of the roofs shingles 502 (refer to FIG. 2), may be varied to accommodate various article installation needs,” and that “[t]he preferred embodiments of the invention described herein are exemplary and numerous modifications, variations, and rearrangements can be readily envisioned to achieve an equivalent result.” EX-1005, 3:60-67, 5:22-26. In this configuration, Wentworth’s stanchion comprises a “*flange portion*.” As shown below with reference to Wentworth FIG. 21, a POSA understood how to apply the teaching of Wentworth to make a L-shaped bracket or a U-shaped bracket having a body and flange:



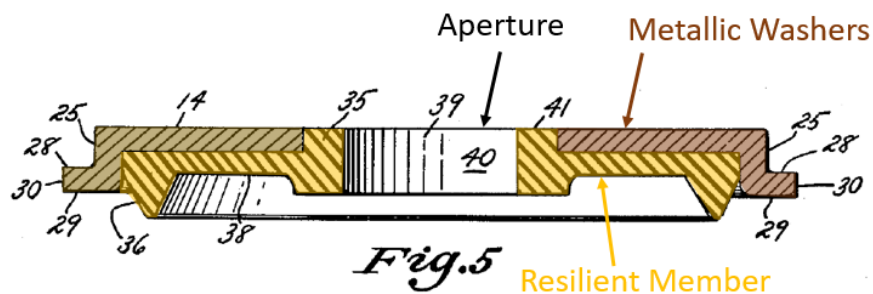
EX-1005, FIG. 21 (as modified and annotated with color and labels).

- v. [10d] *“a washer including a polymeric portion and a rigid backing portion and defining a fourth aperture; and”*

98. Wentworth discloses a “*washer 34*,” which a POSA understood could be a well-known sealing washer. EX-1005, 3:34-35, FIGS. 2-4.

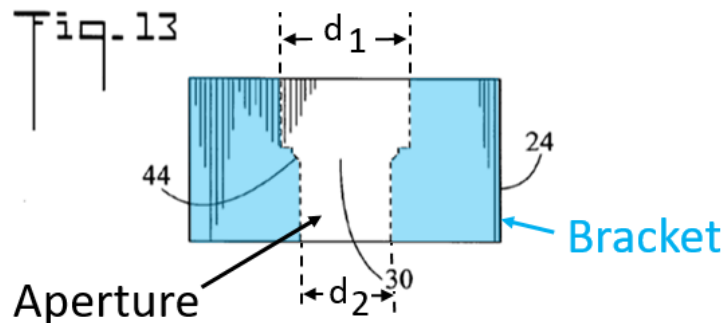
99. To the extent that the Patent Owner argues that Wentworth does not expressly disclose that washer 34 is a sealing washer, Glicksman discloses or teaches a sealing washer which is designed to be “disposed beneath a screw head or similar fastening structure, and to be pressed against the flat surface of a sheet metal body or casing to effect a hermetic seal.” EX-1007 1:8-13. Specifically, Glicksman discloses “*a washer including a polymeric compression portion and a rigid backing portion and defining [an] aperture.*” EX-1007, 1:22-42, 2:1-4. In particular, Glicksman discloses a “*composite washer*” comprising “*a metallic washer element...and a resilient washer element.*” EX-1007, 1:22-42, 2:1-4. Glicksman describes that its washer is subjected to “continuous compressive force” when installed to “effect a hermetic seal.” EX-1007, 2:45-64. A POSA understood that it was common to use elastomeric materials such as rubber or polyurethane as the resilient material because such materials are relatively inexpensive, easily molded to the desired shape, and capable of providing long-lasting resilient

waterproof and weather resistant seals. EX-1006 6:33-36. The '777 Patent acknowledges that resilient sealing materials include “polymer, rubbers, plastics and the like.” EX-1001, 8:4-42-43. Thus, a POSA understood that the resilient washer element is formed of a polymer, such as rubber, plastic, or elastomer which was a common sealing material used in the prior art, and thus constitutes a “*polymeric compression portion.*” EX-1009 (elastomer, rubber, and plastics defined as polymers). The metallic washer element may be formed of “sheet steel, brass, aluminum or stainless steel,” which a POSA understood to be a “*rigid,*” as opposed to the “*resilient*” material of the other washer element to which it is “bonded” for backing to protect the same against damage; as such, a POSA understood that the metallic washer element serves as a “*rigid backing portion.*” EX-1007, 1:48-51, 2:5-22. Glicksman’s washer “*defines a centrally disposed opening,*” and as such “*defin[e]s a fourth aperture.*” EX-1007, 2:33-36.



EX-1007, FIG. 5 (annotated with color and labels).

100. As discussed in the Motivation to Combine section, a POSA would be motivated to use Glicksman's composite washer in Wentworth's system to enhance or increase the protection against leaks. Indeed, Glicksman expressly teaches that its composite washer is designed to be "disposed beneath a screw head or similar fastening structure, and to be pressed against the flat surface of a sheet metal body or casing to effect a hermetic seal." EX-1007 1:8-13. As such Glicksman teaches that the sealing washer should be dimensioned with a diameter of d_1 to fit in the aperture and be disposed beneath the fastener head and to be pressed against the casing of the bracket where the diameter of the aperture changes to d_2 to effect a hermetic seal:



EX-1005, FIG. 13 (annotated with color and labels).

101. A POSA would also understand that the Glicksman washer would provide a uniform downward compressive force caused by tightening the fastener, spread evenly over the seal disposed beneath the washer and cause the seal to

spread laterally and come into contact with the sidewall of the aperture in the bracket to seal the opening in the bracket adjacent the flashing. Thus, use of a sealing washer as taught by Glicksman with Wentworth's system would have been the mere application of a known technique to a piece of prior art ready for improvement.

- vi. [10e] *“a fastener extending through the first aperture, the cylindrical second aperture, the third aperture, and the fourth aperture to couple the bracket, the rubber seal, and the flashing as an assembly, wherein the assembly inhibits flow of fluid through the first aperture.”*

102. The combination of Wentworth, Thaler, and Glicksman makes this element obvious.

103. As described above with respect to [10a]-[10d], Wentworth in combination with Thaler and Glicksman discloses or teach a *“first aperture”* formed in a *“flashing,”* a *“second aperture”* formed in a resilient grommet (*“rubber seal”*), a *“third aperture”* formed in the stanchion (*“bracket”*), and a *“fourth aperture”* in a composite *“washer.”*

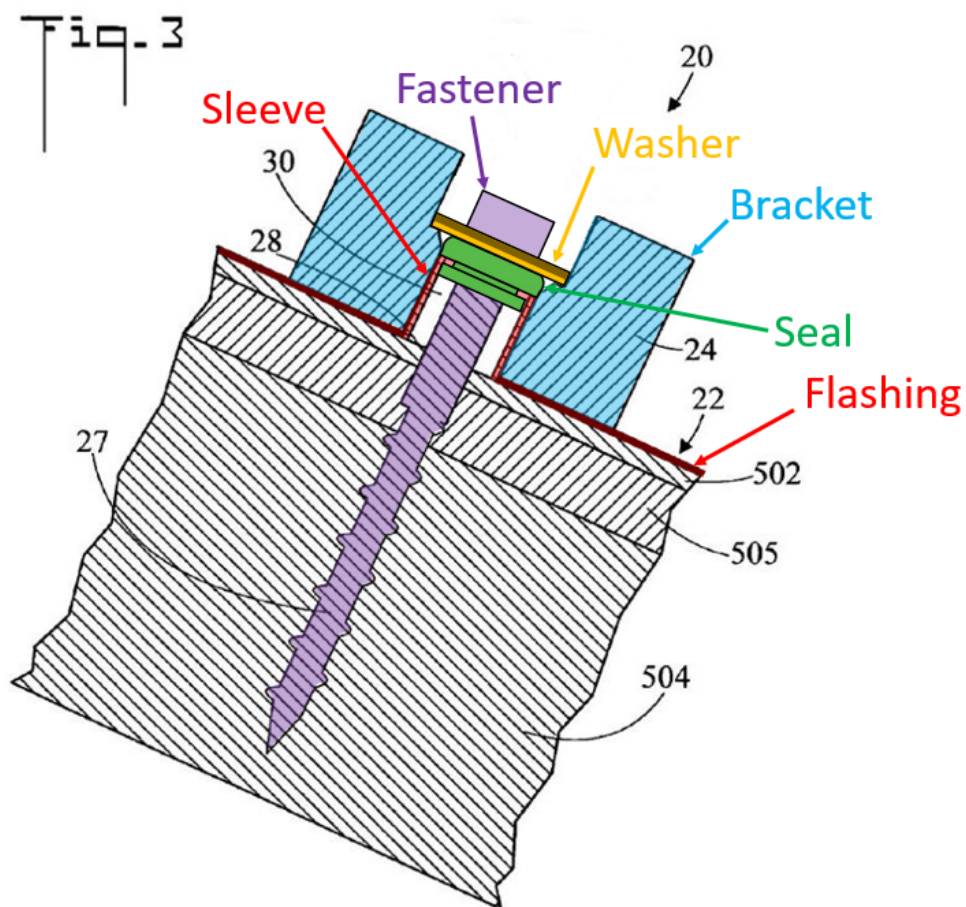
104. Wentworth discloses a *“fastener”* in the form of a screw or ***“bolt 26 for attaching system 20 to structural member 504 (such as a rafter) of roof 500.”***

EX-1005, 3:20-35, FIGS. 2-4, 20. This bolt has a head at which force can be applied to screw the bolt into the roof. EX-1005, FIGS. 2-4.

105. In the assembly of Wentworth, as modified according to Thaler and Glicksman, the apertures in the various components are aligned and the mounting bolt or screw “*extends[s] through*” those apertures to secure or “*couple the bracket, the rubber seal, and the flashing as an assembly, wherein the assembly inhibits flow of fluid through the first aperture.*” EX-1005, 1:13-2:25, 3:6-4:49, FIGS. 2-5. Wentworth discloses, for example, that a “*single lag bolt attaches the system to the structural member of the roof, thereby minimizing the possibility of leaks.*” EX-1005, 1:28-35. In the modified system of Wentworth, the position of stanchion 24 and flashing sleeve 40 diverts water away from the aperture in the flashing, and thereby “*effects a water tight seal*”; the resilient grommet of Thaler prevents water leak by being inserted in “*resilient sealing engagement*” in the flashing sleeve 40; and Glicksman’s composite washer “*effect[s] a hermetic seal.*” EX-1005, 4:20-22; EX-1006, 6:54-61, EX-1007, 2:45-64.

106. The following figure is a pictorial representation of the teachings of Wentworth modified by the teachings of Thaler to include a seal at the top of the sleeve and to include the washer as taught by Glicksman, all with reference to FIG. 3 in Wentworth:

“Modified to include seal inserted into aperture at top of sleeve”



EX-1005, FIG. 3 (annotated with color and labels).

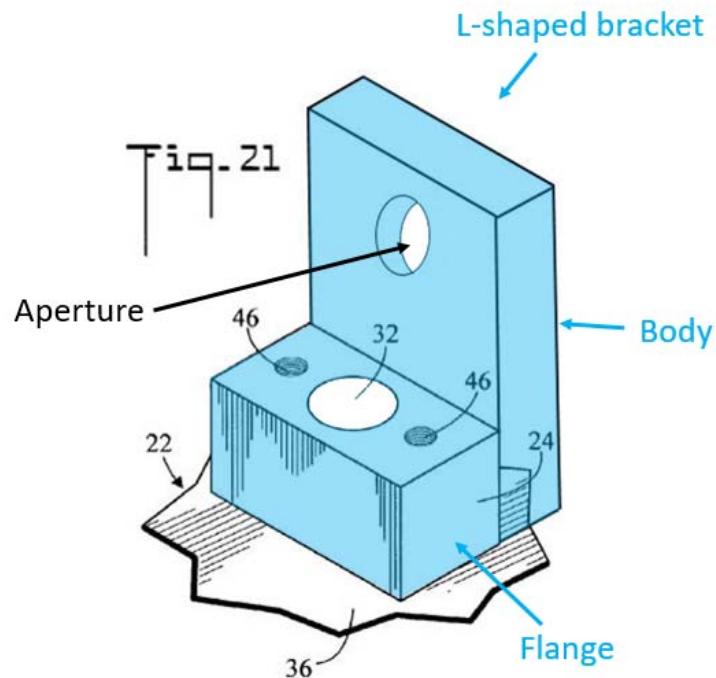
b. Claim 11

- i. [11] “The roof mount assembly of claim 10, wherein the body portion of the bracket includes a fifth aperture sized to receive a second fastener to support a solar panel.”*

107. Wentworth discloses that its system “support[s] a solar panel”: “*The present invention pertains to attaching articles such as photovoltaic panels to the*

roof of a structure, and more particularly to a system which is installed on the roof to serve as an anchor for the articles.” EX-1005, 1:6-9, 1:28-30, FIGS. 1, 22.

108. As discussed above with respect to [10c], Wentworth discloses a stanchion (“*bracket*”), which a POSA would be motivated to modify to include a “*body portion*” extending away from the roof, such body portion having one or more apertures to receive fasteners to attach or support the solar panel. EX-1010, FIG. 1; EX-1011, FIGS. 9A, 9B, 12A, 12B, 13A, 13B, 15; EX-1012 FIG. 8; EX-1020 FIG. 5.



EX-1005, FIG. 21 (as modified and annotated with color and labels).

109. Thus, Wentworth and the knowledge of a POSA teach or render obvious “*wherein the body portion of the bracket includes a fifth aperture sized to receive a second fastener to support a solar panel.*”

c. Claim 12

- i. [12] “*The roof mount assembly of claim 10, wherein the polymeric portion is compressed between the fastener and the bracket.*”**

110. As discussed above with respect to [10c]-[10e], Glicksman teaches a composite washer with a resilient washer portion (“*polymeric compression portion*”) and Wentworth discloses or teaches a bolt or screw (“*fastener*”) and a stanchion (“*bracket*”).

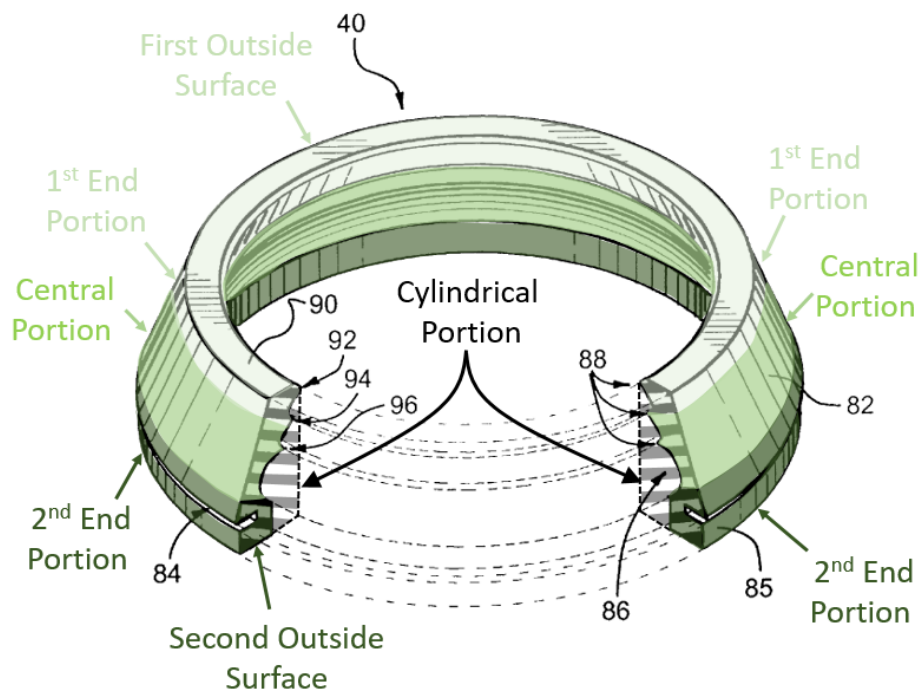
111. As discussed above in [10d], when Glicksman’s composite washer is used to provide additional protection against leaking in the Wentworth assembly, the washer would be located between the head of the bolt or screw (“*fastener*”) and the stanchion (“*bracket*”) on top of the sealing grommet inserted in sleeve 40. Indeed, Glicksman states: “This invention relates generally to the field of *sealing washers, of a type adapted to be disposed beneath a screw head or similar fastening structure, and to be pressed against the flat surface of a sheet metal body or casing to effect a hermetic seal.*” EX-1008, 1:7-13. Glicksman teaches that when the fastener is tightened, “*continuous compressive force*” distorts the

flange [of the resilient washer element] to effect a hermetic seal.” EX-1008, 2:21-60. As such, the combination of Wentworth and Glicksman teaches or renders obvious “*wherein the polymeric portion is compressed between the fastener and the bracket.*”

d. Claim 13

- i. [13] “The roof mount assembly of claim 10, wherein the first end portion of the rubber seal forms a circular disc.”**

112. As discussed above with respect to [10b], with reference to FIG. 5, Thaler discloses a resilient grommet (“*rubber seal*”) having a top surface 90 (*first end portion*”). The top surface 90 forms a circular disc:

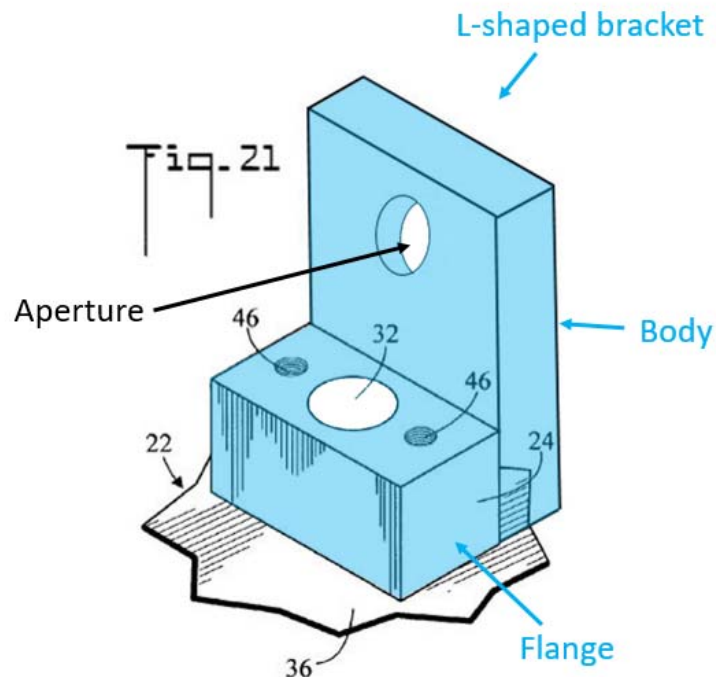


EX-1006, FIG. 5 (as modified to show a cylindrical internal grommet surface, and annotated with color and labels).

e. Claim 14

i. [14] “The roof mount assembly of claim 10, wherein the bracket is L-shaped.”

113. As discussed above with respect to [10c], Wentworth discloses a stanchion (“*bracket*”), which a POSA would be motivated to modify to include a “*body portion*” extending away from the roof, such body portion having one or more apertures to receive fasteners to attach an article in which the “*bracket is L-shaped.*”



EX-1005, FIG. 21 (as modified and annotated with color and labels).

114. As such, the combination of Wentworth and the understanding of a POSA teaches or renders obvious this limitation.

f. Claim 1

i. [1pre] “*A roof mount assembly comprising:*”

115. Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10pre].

ii. [1a] “*a flashing including a top surface, a bottom surface, and an upwardly extending projection with the flashing defining a first aperture extending through the upwardly extending projection between the top surface and the bottom surface;*”

116. For at least the reasons discussed with respect to limitation [10a], Wentworth discloses “*a flashing including a top surface, a bottom surface, and an upwardly extending projection*” in the form of a “***flashing member 22***” with a top surface facing away from the roof, a bottom surface facing towards the roof, and an upwardly directed projection or “***sleeve 40***.”

117. Wentworth further discloses “*the flashing defining a first aperture extending through the upwardly extending projection between the top surface and the bottom surface*” in that it describes that “***upstanding sleeve 40...surrounds aperture 28***.” EX-1005, 3:6-50, FIGS. 3, 6, 7.

iii. [1b] “*a preformed rubber seal including a first end portion forming a first circular disk having a*

first planar end surface, a second end portion forming a second circular disk having a second planar end surface, and a central portion between the first end portion and the second end portion, the preformed rubber seal defining a cylindrical second aperture centrally located in the preformed rubber seal and extending from the first planar end surface to the second planar end surface;

118. Wentworth and Thaler discloses this limitation for the same reasons as discussed with respect to limitation [10b].

119. Thaler discloses that top surface 90 (“*first end portion*”) is “planar” and circular in shape and thus a “*first circular disk*,” and a bottom surface that is likewise “*planar*” and circular in shape and thus a “*second circular disk*.”

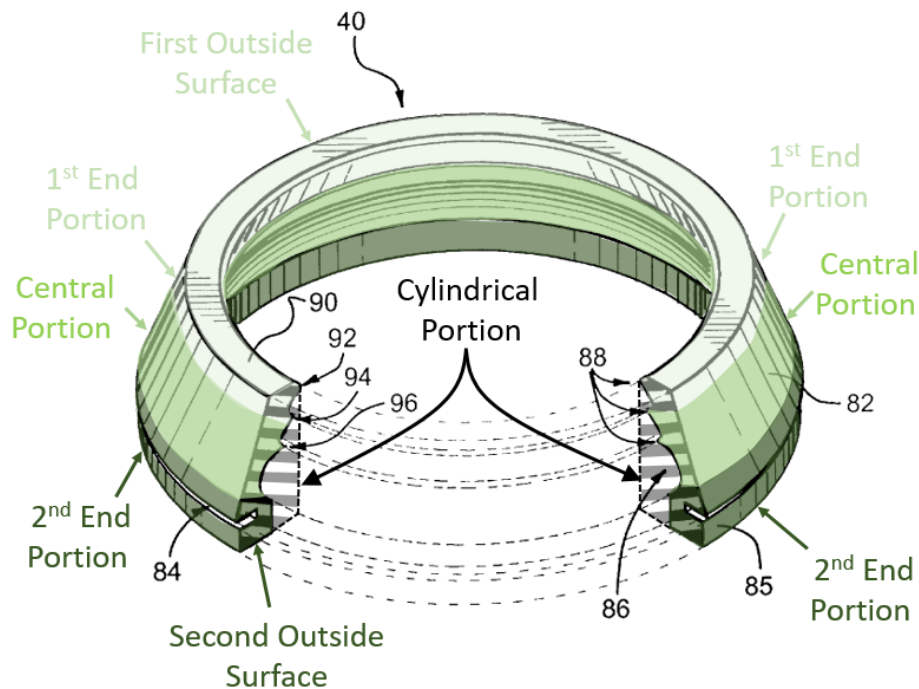


FIG.5

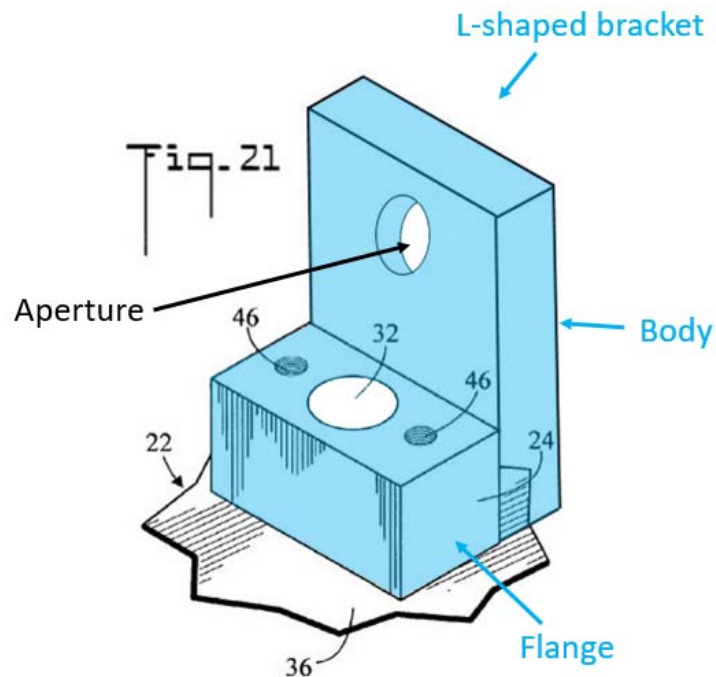
EX-1006, FIG. 5 (as modified to show a cylindrical internal grommet surface, and annotated with color and labels).

- iv. [1c] ***“an L-shaped bracket supportable on the flashing, the L-shaped bracket including an elongate body portion defining a third aperture and a flange defining a fourth aperture sized to receive the preformed rubber seal and the upwardly extending projection, the fourth aperture including a first aperture portion having a first cylindrical shape and defining a first diameter and a second aperture portion having a second cylindrical shape and defining a second diameter that is less than the first diameter;”***

120. Wentworth and Thaler disclose this limitation for at least the same reasons as discussed with respect to limitation [10c].

121. Wentworth discloses or teaches that the “*fourth aperture*” defined in the flange of the bracket or stanchion “*include[es] a first aperture portion having a first cylindrical shape and defining a first diameter and a second aperture portion having a second cylindrical shape and defining a second diameter that is less than the first diameter.*” In particular, Wentworth teaches that the hole in the support bracket or stanchion can be formed with varying diameters: one diameter appropriate for receiving the flashing protrusion or sleeve 40; and another diameter appropriate for accommodating the fastener 26 and washer 34. EX-1005, FIGS. 2-4, 12-15, 18-20. One of these diameters is a “*first diameter*” d_1 , and the portion of

the bracket hole through which the first diameter extends (or is “*defined*” by) constitutes a “*first aperture portion having a first cylindrical shape.*” The other diameter is a “*second diameter*” d_2 , and the portion of the bracket hole through which the second diameter extends (or is “*defined*” by) constitutes “*a second aperture portion having a second cylindrical shape.*” Wentworth discloses that the diameters are sized differently, and as such, the “*second diameter...is less than the first diameter.*”



v. [1d] *“a washer including a polymeric compression portion and a rigid backing portion and defining a fifth aperture; and”*

vi. [1e] *“a screw including a head and extending through the first aperture, the cylindrical second aperture, the fourth aperture, and the fifth aperture, to secure the L-shaped bracket and the flashing and inhibit fluid flow through the first aperture.”*

69

g. Claim 2

- i. [2] “The roof mount assembly of claim 1, wherein the cylindrical second aperture is normal to the first planar end surface and the second planar end surface.”*

124. Thaler discloses this limitation for the same reason as discussed with respect to limitations [10b] and [1b].

h. Claim 3

- i. [3] “The roof mount assembly of claim 1, wherein the third aperture of the L-shaped bracket is sized to receive a second fastener to support a solar panel.”*

125. Wentworth discloses or teaches this limitation for the same reason as discussed with respect to limitation [11].

i. Claim 4

- i. [4] “The roof mount assembly of claim 1, wherein the polymeric compression portion is compressed between the head of the screw and the flange.”*

126. Wentworth and Glicksman disclose or teach this limitation for the same reason as discussed with respect to limitation [12].

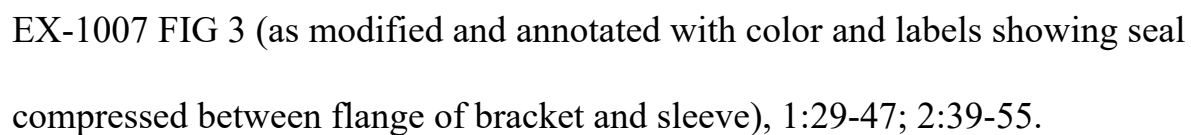
j. Claim 5

- i. [5] “The roof mount assembly of claim 1, wherein a portion of the preformed rubber seal is compressed between the flange of the L-shaped bracket and the upwardly extending projection of the flashing.”*

127. As discussed above with respect to [1a]-[1c], Wentworth, Thales, and the understanding of a POSA disclose, teach, or render obvious a resilient grommet (*“preformed rubber seal”*), a *“flashing”* with a sleeve (*“upwardly extending projection”*) and an L-shaped stanchion (*“L-shaped bracket”*) with flange portion (*“flange”*) extending along the roof surface.

128. In Wentworth’s system or assembly, as modified according to the teachings of Thaler, a portion of the rubber grommet would extend out of the sleeve of the flashing at the top. Because of the tight tolerances needed to form a good seal, a POSA understood that in such position, when the washer and fastener are installed and the fastener is tightened, some part of the rubber grommet portion extending above the sleeve is compressed laterally into contact with the sidewalls of the aperture of the flange portion of the bracket (*“flange of the L-shaped bracket”*) and the top, inwardly projecting portions of the sleeve or projection of the flashing (*“upwardly extending projection of the flashing”*), sealing against water leak as illustrated below:

Fig. 3



72

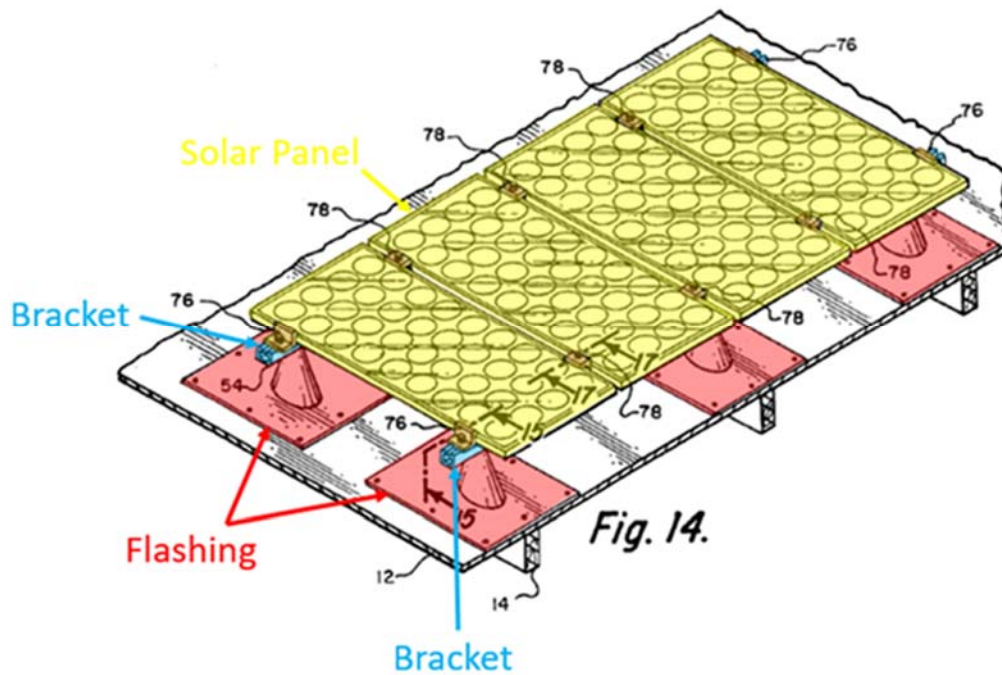
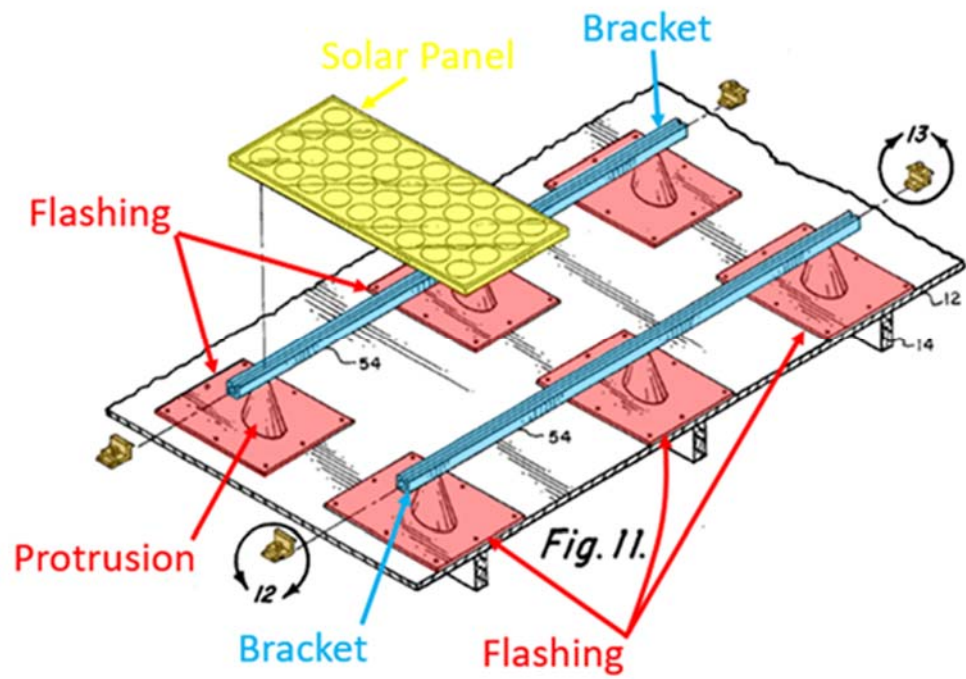
B. Challenge 2: Claims 16-24 and 6-9 are unpatentable over Wentworth, Thaler, Glicksman, and Ullman.

1. The Ullman Reference

130. U.S. Pub. No. 2003/0177706 (“Ullman,” EX-1009), titled “Mounting System for Supporting Objects,” issued on September 25, 2003, and as such, it is my understanding that Ullman qualifies as prior art.

131. Ullman is directed to a “mounting system for elevating and supporting objects such as solar panels and satellite dishes” upon roofs. EX-1009, Abstract. Ullman is thus analogous prior art for the ’777 Patent, as it is in the same field of endeavor. EX-1009, Abstract.

132. Ullman discloses that its system may utilize base mounts of various configurations for securing the system to a roof, with one such configuration shown and described with respect to FIGS. 11 and 14.



EX-1009, FIGS. 11, 14 (annotated with color and labels).

133. Mounting brackets 54 (blue) on one side are attached to the roof rafters 14 through flashing cones (red) and on the other side to a solar panel (yellow).

2. Motivation to Combine Wentworth, Thaler, Glicksman, and Ullman

134. A POSA would have found it obvious, and indeed would have been motivated, to combine the teachings of Ullman with the mounting assembly of Wentworth, irrespective of other modifications.

135. As already discussed, Wentworth discloses a bracket in the form of a stanchion to secure its mounting assembly to a roof and to provide a point of attachment for the object (e.g., solar panel) to be mounted. A problem with such stanchion is that it provides a fixed point of attachment that does not allow adjustability or flexibility for lateral positioning or additional hardware in the assembly.

136. Ullman discloses a mounting system which provides lateral adjustability and flexibility for attaching other objects, whether additional mounting hardware or the final article. EX-1008, Abstract, FIGS. 1-32. To provide this adjustability, among other things, Ullman's mounting system has horizontal members, through which slidable inserts may be moved to position clamps along the horizontal member to attach the solar panel. EX-1008, ¶¶ [0011], [0049]-

[0057], [0153]-[0166], FIGS. 1-32. In one embodiment, the horizontal member can “be fastened to an existing roof by use of base mounts,” comprising a U-shaped portion and a threaded portion. EX-1008, ¶¶ [0150]-[0151]. The particular base mounts with U-shaped and threaded portions are employed for an existing roof to which shingles and flashing have already been attached. EX-1008, FIG. 19.

137. A POSA would have been motivated to modify Wentworth’s stanchion or bracket to a form like Ullman’s base mount to allow for attachment of Ullman’s horizontal member “to an existing roof” to provide adjustability in securing an object (e.g., solar panel) using a clamp: “Clamps are used to grip an edge portion of an adjacent object and secure that object in position once the clamp has been fastened to the adjacent horizontal member.” EX-1008, ¶ [0054]. Doing so would have been the mere application of a known technique to a piece of prior art ready for improvement of providing increased flexibility for mounting rooftop structures. Additional reasons for combining the references are provided below.

3. Detailed Invalidity Analysis

a. Claim 16

i. [16pre] “A roof mount assembly comprising:”

138. Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10pre].

- ii. [16a] *“a flashing including a top surface, a bottom surface, an upwardly extending projection, the upwardly extending projection defining a first aperture;”*

139. Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10a].

- iii. [16b] *“a rubber seal including a first end portion, a second end portion and a central portion between the first and second end portions, the rubber seal defining a cylindrical second aperture through the first end portion, the second end portion, and the central portion;”*

140. Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [10b].

- iv. [16c] *“a bracket supportable on the flashing, the bracket including a first end, a first arm, a second arm, and a second end, the first end defining a third aperture, the third aperture including a first aperture portion and defining a first diameter and a second aperture portion defining a second diameter that is less than the first diameter, the bracket defining a bracket aperture bound by the first end, the first arm, the second arm, and the second end;”*

141. This limitation is taught by Wentworth, for the reasons discussed with respect to limitation [1c], with the exception of the shape of the bracket.

Wentworth discloses a “*bracket*” in the form of a stanchion. However, as discussed with respect to limitation [10c], the shape of the bracket is not described as being

critical in the '777 Patent, and indeed, a POSA understood that other forms and shapes for mounting hardware are possible, and in fact more desirable depending on the circumstances.

142. Ullman discloses a mounting system which uses a bracket that allows adjustability in attaching objects such as solar panels or other hardware to a roof with shingles and flashing installed. EX-1008, Abstract, ¶¶ [0150]-[0151], FIGS. 1-32. For such installation, Ullman teaches that “[t]he support means can also be modified to be fastened to an existing roof by use of base mounts” as shown in FIG. 19. EX-1008, ¶ [0151], FIG. 19. A POSA would be motivated to use Ullman’s base mounts as support means having the stanchion features taught by Wentworth, for the increased flexibility that the brackets of Ullman provide as discussed above.

143. As shown below, Ullman shows a mounting bracket in FIG. 16 that is structurally identical to the mounting bracket shown in FIG. 73 of the '777 Patent;

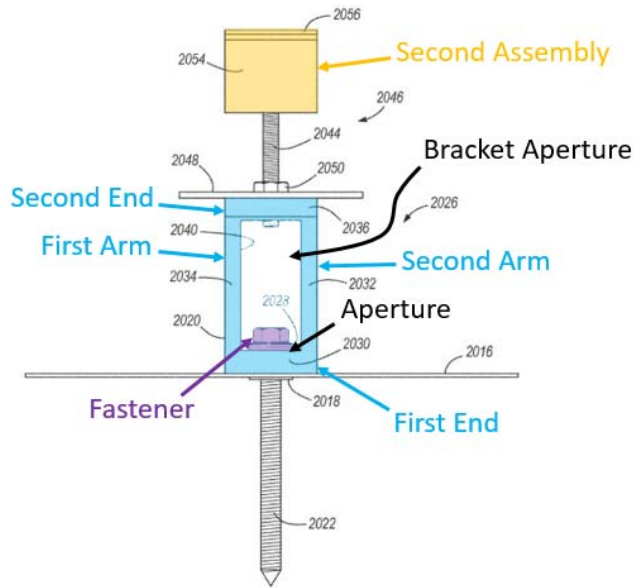


FIG. 73

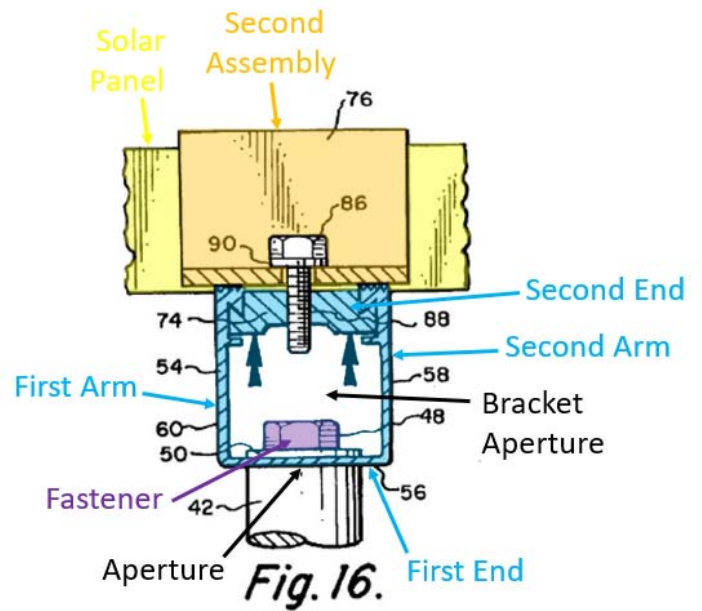
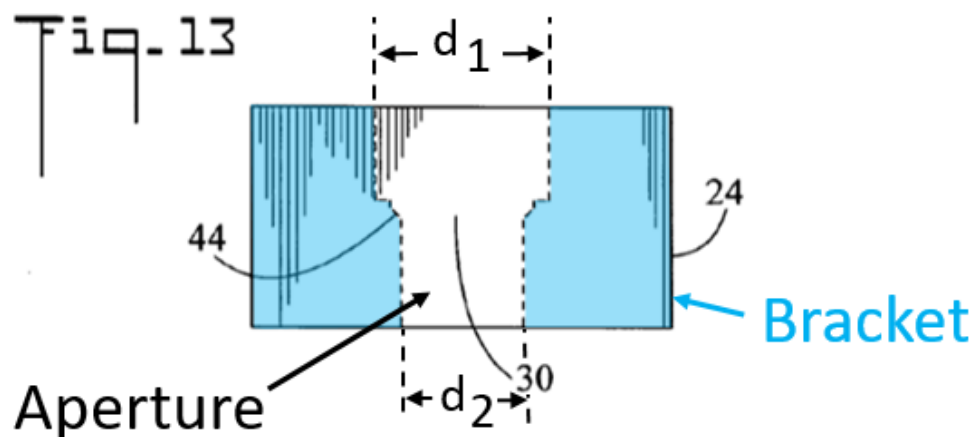


Fig. 16.

EX-1001, FIG. 73 (annotated with color and labels); EX-1009, FIG. 16 (annotated with color and labels).

144. Ullman discloses its base mounts comprise a planar “*first end*” for fastening to the roof and a planar “*second end*” for fastening to a second assembly holding a solar panel. EX-1008, ¶ [0151], FIG. 16. Each such base mount includes a “*first arm*” and “a *second arm*” extending from the first end towards the opposite second end. *Id.* Ullman further teaches “*the bracket defining a bracket aperture bound by the first end, the first arm, the second arm, and the second end*” as an aperture in the bracket bound by the first and second arms and the first and second ends. *Id.*

145. A POSA understood that the bracket disclosed in Wentworth would be modified to have the shape disclosed in Ullman for increased flexibility in mounting rooftop structures. Wentworth discloses an aperture in the stanchion that receives both the flashing projection or sleeve 40 as well as the fastener or bolt 26. EX-1005, FIGS. 2-4. Wentworth discloses that this aperture has portions of varying diameters: a first aperture portion with a first diameter d_1 appropriate for accommodating the fastener; and a second aperture portion with a second diameter d_2 appropriate for receiving the flashing projection and seal, where the second diameter that is less than the first diameter. EX-1005, FIGS. 2-4, 12-15, 18-20.



EX-1005, FIG. 13 (annotated with color and labels)

146. As such, the Wentworth bracket, modified according to teachings of Ullman, has an aperture that “include[es] a first aperture portion and defining a

first diameter and a second aperture portion defining a second diameter that is less than the first diameter.”

- v. [16d] *“a washer including a polymeric portion and a rigid backing portion and defining a fourth aperture; and”*

147. Glicksman discloses this limitation for the same reason as discussed with respect to limitation [10d].

- vi. [16e] *“a fastener extending through the first aperture, the cylindrical second aperture, the third aperture, and the fourth aperture to couple the bracket, the rubber seal, and the flashing to form an assembly, wherein the assembly inhibits flow of fluid through the first aperture.”*

148. Wentworth, Thaler, Ullman, and Glicksman disclose or teach this limitation for the same reason as discussed with respect to limitation [10e].

b. Claim 17

- i. [17] *“The roof mount assembly of claim 16, wherein the polymeric portion is compressed between the fastener and the bracket.”*

149. Wentworth and Glicksman disclose or teach this limitation for the same reason as discussed with respect to limitation [12].

c. Claim 18

- i. [18] *“The roof mount assembly of claim 16, wherein a portion of the rubber seal is compressed between the bracket and the flashing.”*

150. Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [5].

d. Claim 19

- i. [19] “The roof mount assembly of claim 16, wherein the rubber seal and the washer inhibit entry of water to a roof substrate.”*

151. Wentworth, Thaler, and Glicksman disclose this limitation for the same reason as discussed with respect to limitation [10e] because inhibiting flow of fluid through the first aperture inhibits entry of water to a roof substrate.

e. Claim 20

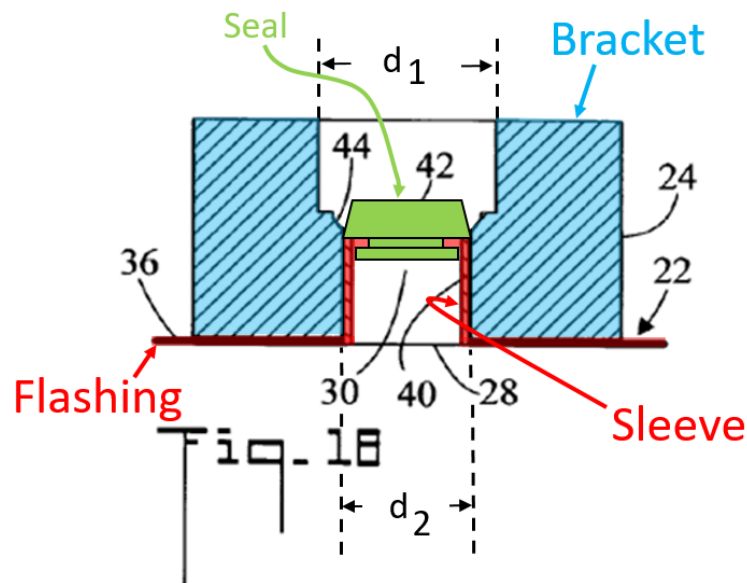
- i. [20] “The roof mount assembly of claim 16, wherein the second end is configured to support a second assembly and a solar panel.”*

152. Ullman discloses this limitation for the same reason as discussed with respect to limitation [16c] because it discloses another aperture and fastener at the second end which can be used to support a second assembly and a solar panel as shown in FIG. 16:

154. As discussed above with respect to [16b] and [16e], Wentworth and Thaler disclose or teach a resilient grommet (“*rubber seal*”) and a bolt or screw (“*fastener*”) for a mount assembly.

155. Thaler further discloses or teaches “*wherein the rubber seal is installable within the assembly without the fastener*” in that it describes the resilient grommet “*having a groove 84 extending circumferentially around an outer base surface 85 of the grommet body 82, with said resilient grommet 40 being assembled on the upper end 35 of the [flashing projection] in resilient sealing engagement,*” and as such, the grommet does not require the fastener for installation. EX-1006, 6:53-61.

“Modified to include seal inserted into aperture at top of sleeve”



EX-1005, FIG. 18 (as modified and annotated with color and labels).

h. Claim 23

- i. [23] “*The roof mount assembly of claim 16, wherein the rubber seal is factory-installed within the assembly.*”**

156. Wentworth and Thaler disclose or teach this limitation.

157. As discussed above with respect to [16b], Thaler discloses a resilient grommet (“*rubber seal*”) that can be used with Wentworth’s assembly modified according to the teachings of Ullman.

158. Thaler describes the “*resilient grommet 40 being assembled on the upper end 35 of the [flashing projection] in resilient sealing engagement.*” EX-1006, 6:53-61. Thaler further describes that the resilient grommet “*can be easily inserted or replaced by hand at any point during or after installation*” of the flashing. EX-1006, 7:11-15. Because the grommet can be “replaced” during installation of the flashing, a POSA understood that Thaler provides for assembling the grommet in the flashing at some point before installing the flashing.

159. Indeed, Thaler is concerned about facilitating or reducing the costs of installation, as it notes that for some types of sealing “installation is labour intensive.” EX-1006, 1:30-45. Thaler tries to avoid extra steps during installation,

noting that one sealing process “adds an additional step to the installation process, and for this reason is also not favoured.”

160. With such concerns and teachings in mind, it would have been obvious to a POSA to install the resilient grommet within the flashing projection at a factory—i.e., “*the rubber seal is factory-installed within the assembly*”—prior to sending out the assembly components, because doing so would facilitate the installation by reducing the number of steps needed.

i. Claim 24

i. [24] “*The roof mount assembly of claim 16, wherein the cylindrical second aperture has a smooth surface.*”

161. Combination of Wentworth and Thaler and knowledge of a POSA teaches or renders obvious this limitation for the same reasons as discussed with respect to limitation [10b].

j. Claim 6

i. [6pre] “*A roof mount assembly comprising:*”

162. Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10pre].

ii. [6a] “*a flashing including a top surface, a bottom surface, and an upwardly extending projection defining a first aperture extending through the top surface and the bottom surface;*”

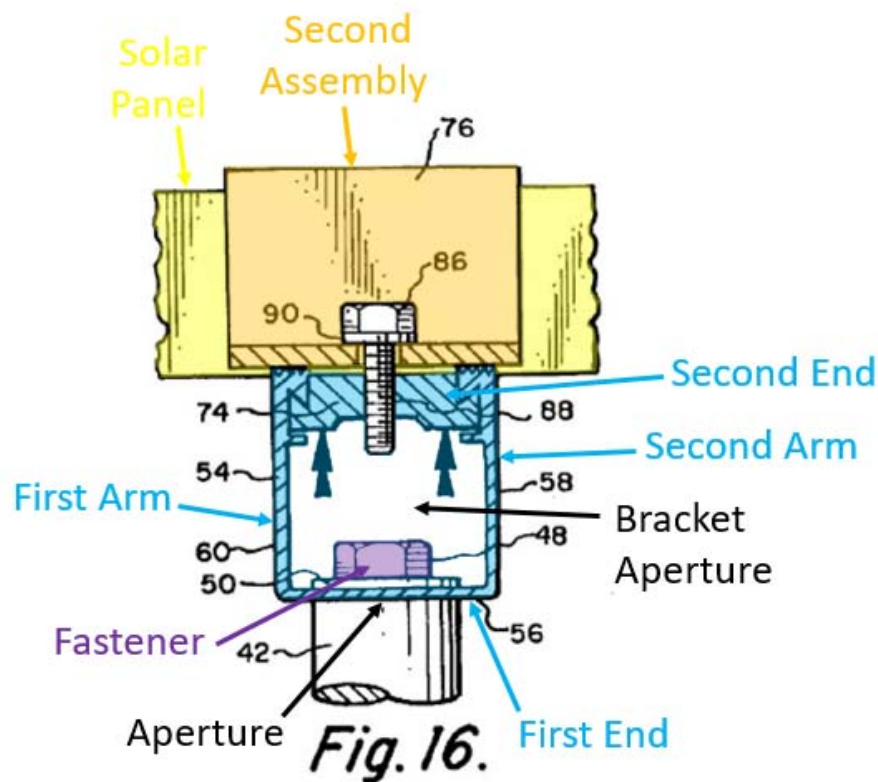
163. Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10a].

- iii. [6b] *“a preformed rubber seal including a first end portion forming a first circular disk having a first planar end surface, a second end portion forming a second circular disk having a second planar end surface, and a central portion between the first end portion and the second end portion, the preformed rubber seal defining a cylindrical second aperture centrally located in the preformed rubber seal and extending from the first planar end surface to the second planar end surface;”*

164. Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [10b].

- iv. [6c] *“a bracket supportable on the flashing, the bracket including a planar first end, a first arm, a second arm, and a planar second end, the planar first end defining a third aperture, the third aperture including a first aperture portion having a first cylindrical shape and defining a first diameter and a second aperture portion having a second cylindrical shape and defining a second diameter that is less than the first diameter, the bracket defining a bracket aperture bound by the planar first end, the first arm, the second arm, and the planar second end;”*

165. Wentworth, Thaler, and Ullman disclose or teach this limitation for the same reason as discussed with respect to limitation [16c] where the first and second ends are planar:



EX-1009, FIG. 16 (annotated with color and labels).

- v. [6d] *“a washer including a polymeric compression portion and a rigid backing portion and defining a fourth aperture; and*

166. Glicksman discloses this limitation for the same reason as discussed with respect to limitation [10d].

- vi. [6e] *“a screw including a head and extending through the first aperture, the cylindrical second aperture, the third aperture, and the fourth aperture to secure the bracket and the flashing and to couple the bracket, the preformed rubber seal and the flashing as an assembly, and to inhibit fluid flow through the first aperture.”*

167. Wentworth, Thaler, Glicksman, and Ullman disclose or teach this limitation for the same reason as discussed with respect to limitation [10e].

k. Claim 7

- i. [7] “The roof mount assembly of claim 6, wherein the planar second end is configured to support a second assembly and a solar panel.”*

168. Ullman discloses or teaches this limitation for the same reason as discussed with respect to limitation [20].

l. Claim 8

- i. [8] “The roof mount assembly of claim 6, wherein the polymeric compression portion is compressed between the head of the screw and the bracket.”*

169. Glicksman discloses this limitation for the same reason as discussed with respect to limitation [12].

m. Claim 9

- i. [9] “The roof mount assembly of claim 6, wherein the cylindrical second aperture is normal to the first planar end surface and the second planar end surface.”*

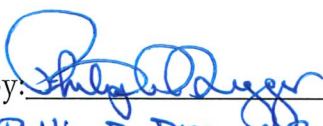
170. Thaler discloses this limitation for the same reason as discussed with respect to limitation [10b].

Conclusion and Declaration

The findings and opinions set forth in this declaration are based on my work and examinations to date. I may continue my examinations. I may also receive additional documentation and other factual evidence over the course of this litigation that will allow me to supplement and/or refine my opinions. I reserve the right to add to, alter, or delete my opinions and my declaration upon discovery of any additional information. I reserve the right to make such changes as may be deemed necessary. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board (“PTAB” or “Board”) of the USPTO. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: 12 Feb 2021

By: 
Philip D. Dregger