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

Inter Partes Review No.: IPR2021-00532

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 10,763,777

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Petitioner's Exhibit List[1]

Exhibit #	*Description*
1001	U.S. Pat. No. 10,763,777 (the "'777 Patent")
1002	Prosecution History of the '777 Patent ("File History")
1003	Declaration of Philip Dregger, P.E.
1004	Curriculum Vitae of Philip Dregger, P.E.
1005	U.S. Pat. No. 7,762,027 ("Wentworth")
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	*McGraw-Hill Dictionary of Scientific and Technical Terms* (5th ed. 1994)
1010	U.S. Pat. No. 4,321,745
1011	U.S. Pat. No. 6,526,701
1012	U.S. Pat. No. 7,600,349
1013	U.S. Pat. No. 4,010,578
1014	U.S. Pat. No. 4,160,347
1015	U.S. Pat. No. 4,265,058
1016	U.S. Pat. No. 7,861,485
1017	U.S. Pat. No. 4,526,407
1018	U.S. Pat. No. 5,222,334
1019	U.S. Pub. No. 2007/0199561
1020	U.S. Pat. No. 7,797,883
1021	U.S. Pat. No. 8,151,522 (the "'522 Patent")

[1] All citations to issued patents are to column:line, and all citations to patent applications are to the original page or paragraph numbers.

I. INTRODUCTION

Petitioner requests *inter partes* review of U.S. Patent No. 10,763,777 (the "'777 Patent," EX-1001). The '777 Patent is directed to a roof mounting assembly and all claims recite the same basic elements of "flashing," "seal," "bracket," "washer," and "screw"/"fastener," wherein the assembly inhibits the flow of fluid through an aperture defined in a protrusion of the flashing. These elements, their various configurations, and way in which they inhibit fluid flow through the aperture in the flashing protrusion were conventional and well-known in the prior art years before the earliest possible priority date of the patent. Indeed, the Examiner during original prosecution recognized that "Applicant's disclosure lends no criticality" to the configuration of most of these elements, instead considering them to be "features best determined by a skilled artisan." EX-1002, pp. 42-49. Applicant did not dispute. *Id*., pp. 33-38. The only prior art rejection made against the Challenged Claims (1-14 and 16-24) was for non-statutory double patenting, which the Applicant overcame with a simple Terminal Disclaimer. *Id*. As shown below and by the testimony of Philip Dregger, P.E. (EX-1003), the Challenged Claims of the '777 Patent are unpatentable as obvious.

Claim(s) Challenged	**Basis**	**References**
1-5, 10-14	pre-AIA 35 U.S.C. § 103	Wentworth, Thaler, Glicksman
6-9, 16-24	pre-AIA 35 U.S.C. § 103	Wentworth, Thaler, Glicksman, Ullman

II. GROUNDS FOR STANDING

Petitioner certifies that the ’777 Patent is eligible for *inter partes* review and that Petitioner is not barred or estopped from requesting such review of the Challenged Claims on the grounds identified herein. 37 C.F.R. §42.104(a). This Petition is filed under 37 C.F.R. §42.106(a).

III. RELIEF REQUESTED AND REASONS FOR THE SAME

Petitioner respectfully requests institution of an *inter partes* review pursuant to 37 C.F.R. § 42.108 and cancellation of the Challenged Claims of the ’777 Patent.

As explained below and in the attached Declaration of Petitioner’s Expert, Philip Dregger, P.E., EX-1003, the roof mounting systems, as described and claimed in the ’777 Patent, were obvious over the prior art to a person of ordinary skill in the art (“POSA”) at the time of the invention.

IV. OVERVIEW OF THE ’777 PATENT

A. Disclosure

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; EX-1003 ¶ 34.

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):

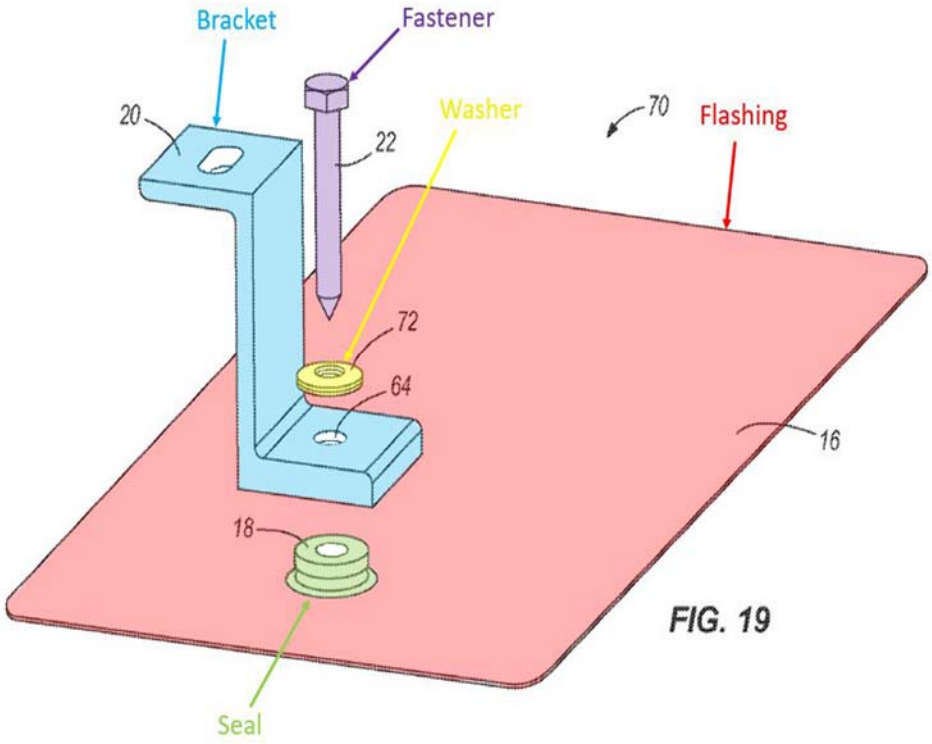


FIG. 19

EX-1001, FIG. 19 (annotated with color and labels); EX-1003 ¶ 35.

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; EX-1003 ¶ 36.

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; EX-1003 ¶ 37.

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; EX-1003 ¶ 38.

Despite the wealth of knowledge already developed in this area, as evidenced by the myriad prior art cited on over six pages of the ’777 Patent, the patent does not have any “Background” section to explain the state of the art, nor does it clearly explain how its roof mount assembly is different or better than what came before. EX-1001; EX-1003 ¶ 39.

However, 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.

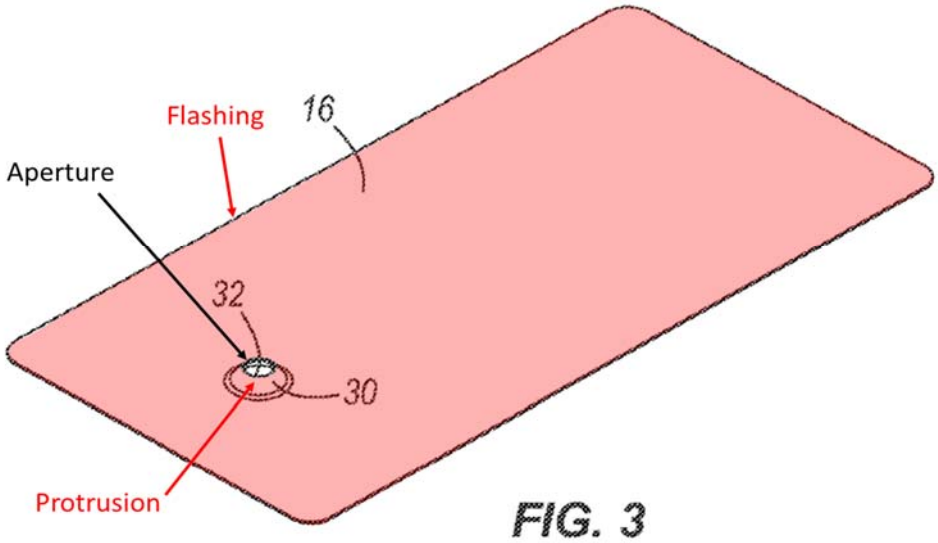


FIG. 3

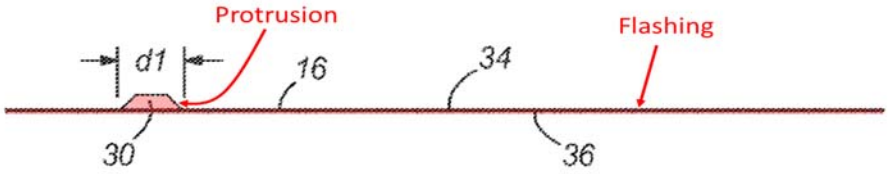


FIG. 5

EX-1001, FIGS. 19, 3, 5 (annotated with color and labels); EX-1003 ¶ 40.

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; EX-1003 ¶ 41.

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:

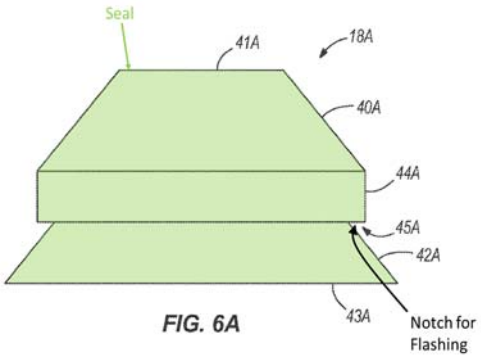


FIG. 6A

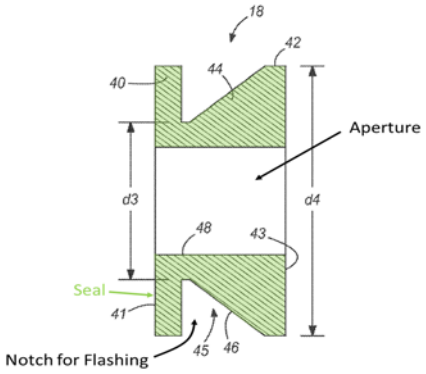


FIG. 7

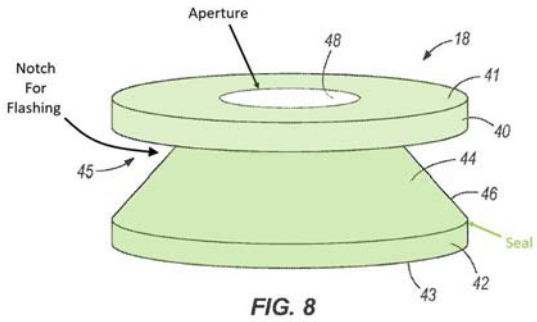


FIG. 8

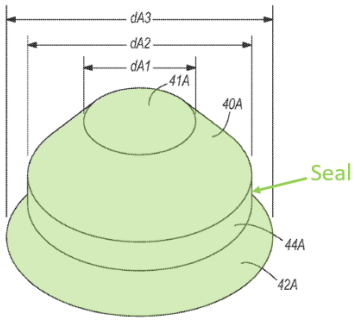


FIG. 8A

EX-1001, FIGS. 6A, 7, 8, 8A (annotated with colors and labels); EX-1003 ¶ 42.

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. EX-1003 ¶ 43.

Further, the ’777 Patent does not describe that any specific arrangement of these well-known components produces surprising results, or even provides any benefit over a different combination of the same elements. Rather, each of the

well-known components is 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, 33:31-36:34. However, the claims do not recite the relative positioning of the components other than identifying that the screw extends through the first, second, fourth and fifth apertures without reciting the order of the components. 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; EX-1003 ¶ 44.

As will be shown below in more detail, all of these basic components or elements—i.e., flashing, seal, bracket, washer, and screw or fastener—as well as their specific configurations and materials, were conventional and well-known in the prior art for use in roof mounting assemblies. Moreover, the concept of inhibiting fluid flow through an aperture formed in a flashing protrusion using a seal insertable into the aperture was also well-known. EX-1003 ¶¶ 45-170.

B. Prosecution History

The application for the ’777 Patent was filed on January 26, 2020. EX-1001, cover. But the ’777 Patent claims priority to, and is an amalgam of, a number of earlier filed, related patents and applications describing various embodiments for roof mount assemblies or systems. EX-1001, cover. EX-1003 ¶ 45.

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. EX-1003 ¶ 46.

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-1021). EX-1002, pp. 42-49 (Office Action dated June 10, 2020). While claims 22-33 of the '522 Patent also recite the same basic elements of "flashing," "bracket," "seal," "fastener," and "washer," 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. But the Examiner stated, "***Applicant's disclosure lends no criticality to the specific seal and washer material and fastener used***…."[2] *Id*. Indeed, according to the Examiner: "***The specific seal, fastener and washer used are considered features best determined by a skilled artisan***." *Id.*; EX-1003 ¶ 47.

In response, the applicant did not dispute the Examiner's assertion that the specific seal, washer, and fastener used "lends no criticality" and would be

[2] 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.

"considered features best determined by a skilled artisan." EX-1002, pp. 33-38 (Amendment dated June 17, 2020). Instead, to overcome the double patenting rejection, the applicant simply filed a Terminal Disclaimer. *Id*. EX-1003 ¶ 47.

Thereafter, the Examiner allowed the claims, but without giving any reasons for allowance. *Id*., pp. 10-14 (NOA dated July 21, 2020).

C. Claimed Priority Date

The '777 Patent claims priority through a chain of continuation and continuation-in-part applications. EX-1001, cover. Of these applications, the one with the earliest filing date is Provisional application No. 61/161,668 (the "'668 Application"), filed on March 19, 2009. The '668 Application includes figures and accompanying description similar to FIGS. 1-51 of '777 Patent, but not for the remaining FIGS. 52-94. Thus, not all embodiments described and claimed in the '777 Patent may be entitled to priority back to the March 19, 2009 filing date of the '668 Application. Nevertheless, for the purposes of this IPR, Petitioner uses March 19, 2009 as the priority date for all Challenged Claims[3], and all of the Grounds set forth herein are based on art that is prior to March 19, 2009. EX-1003 ¶ 50.

[3] Petitioner reserves the right to challenge the priority date of any claims of the '777 Patent in other proceedings or matters, including the Litigation.

V. CLAIM CONSTRUCTION[4]

The claims of the '777 Patent are construed herein "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b). No specific construction of any claim term is required because the prior art relied on in this Petition meets each of the claim terms under any reasonable construction. EX-1003 ¶¶ 48-49.

VI. STATE OF THE ART

A. Level of Ordinary Skill in the Art

With respect to the '777 Patent, a POSA at the time of the alleged invention would have been a person having a Bachelor of Science degree in a relevant engineering discipline, such as mechanical, structural, civil, or industrial engineering, and a couple of years of 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

[4] Petitioner does not concede that any term not construed herein meets the statutory requirements of 35 U.S.C. § 112, or that the challenged claims recite patentable subject matter under 35 U.S.C. § 101.

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. EX-1003 ¶¶ 21-23.

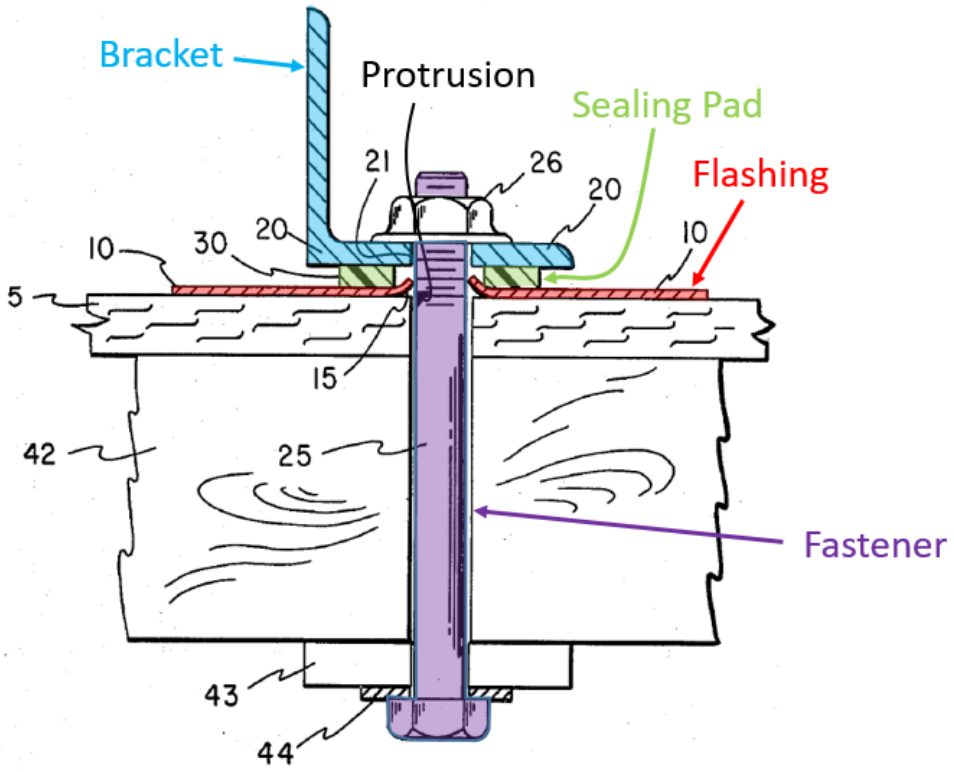
B. State of the Art and General Knowledge of a POSA

This section describes the general knowledge, skill, common sense and creativity possessed by a POSA as of March 2009, and informs the predictable nature of the combinations in the Grounds below. EX-1003 ¶ 51.

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. EX-1003 ¶ 52.

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 uses of flashing, seals and sealers have been used to minimize or prevent water leakage. EX-1003 ¶ 53.

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-1003 ¶ 54.



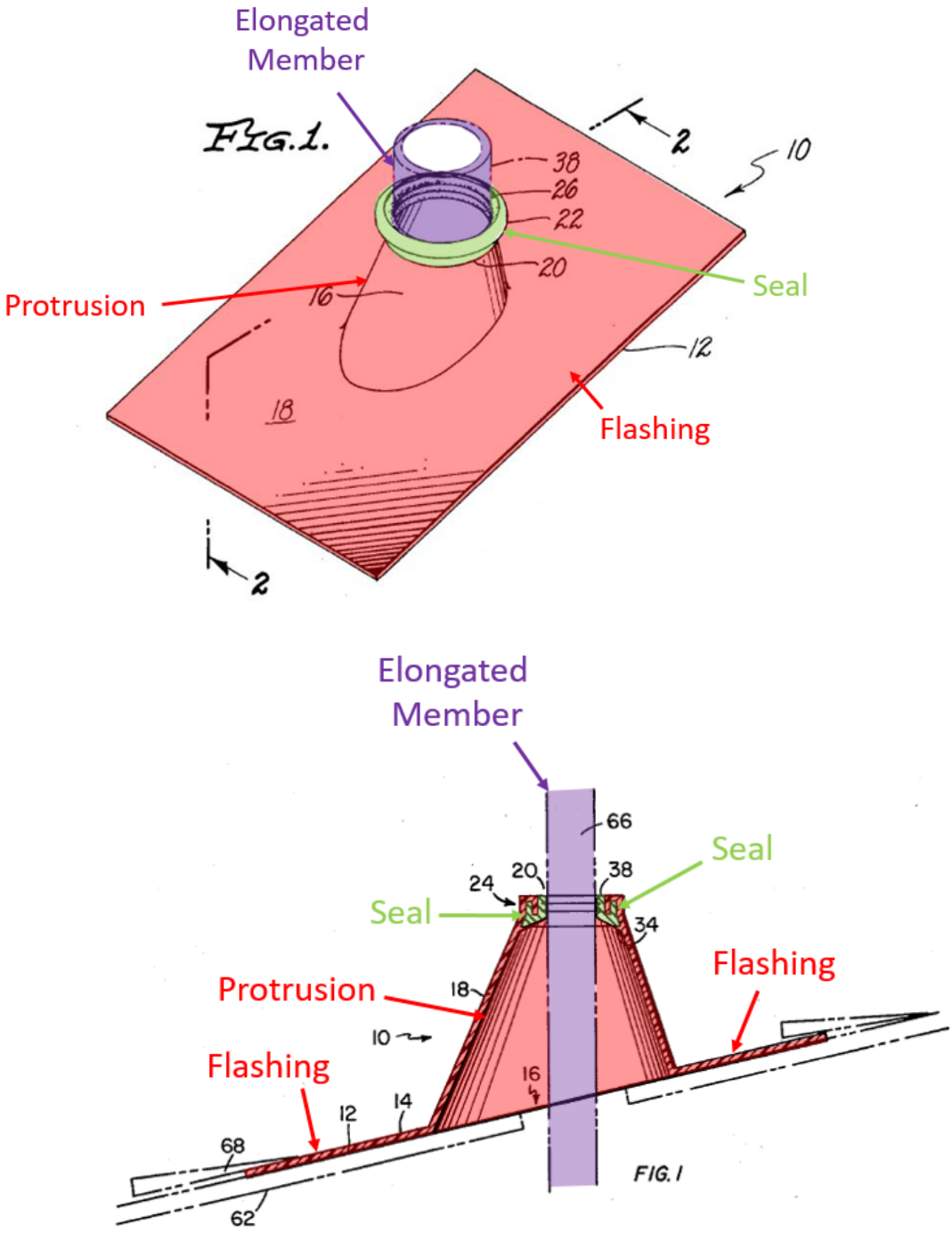
EX-1010, FIG. (annotated with color and labels); EX-1003 ¶ 54.

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 it 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. EX-1003 ¶ 55.

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. EX-1003 ¶ 56.

It was also well-known 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:



EX-1014, FIG. 1; EX-1017 FIG. 1; EX-1003 ¶ 57.

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. *Id*. 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:

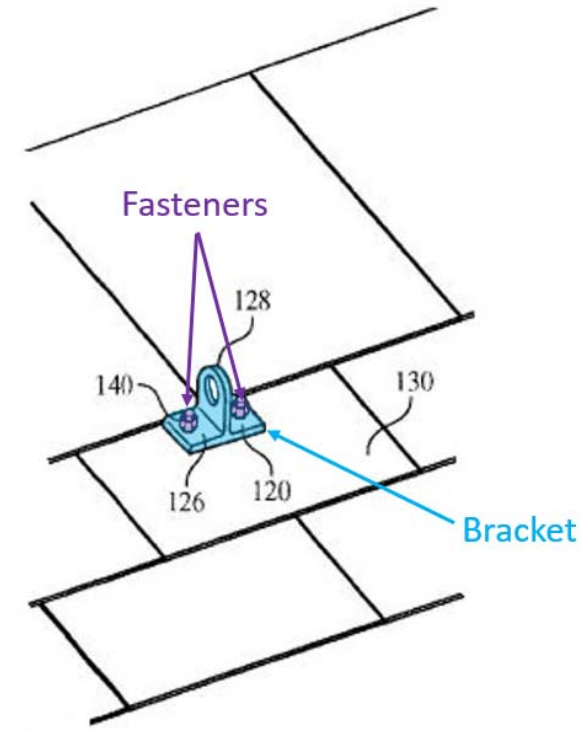


FIG. 15

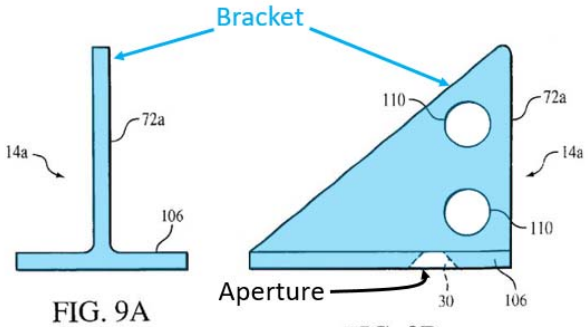


FIG. 9A

FIG. 9B

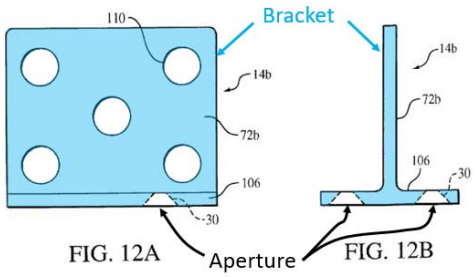


FIG. 12A

FIG. 12B

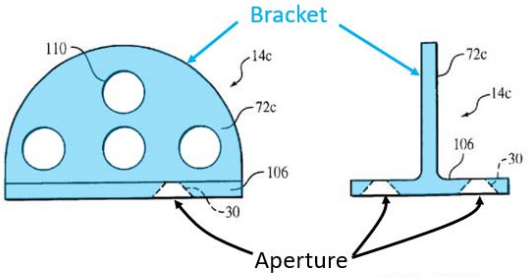


FIG. 13A

FIG. 13B

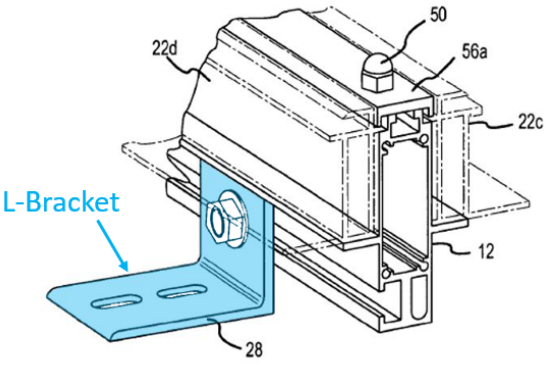


FIG.8

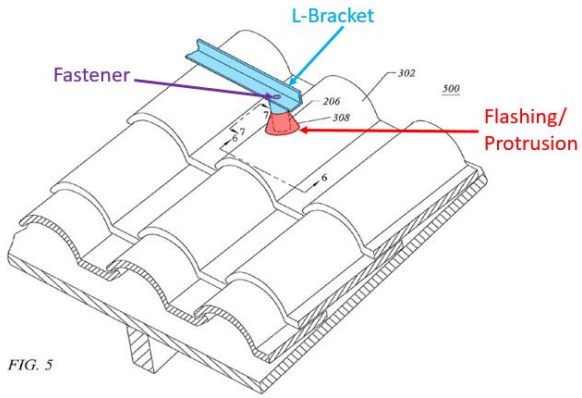
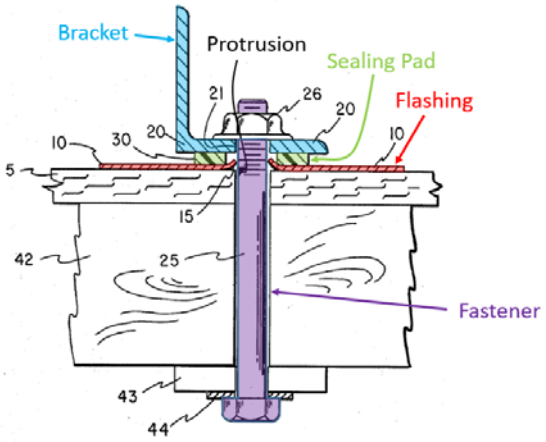


FIG. 5



EX-1010, FIG. 1; EX-1011, FIGS. 9A, 9B, 12A, 12B, 13A, 13B, 15; EX-1012 FIG. 8; EX-1020, FIG. 5; EX-1003 ¶ 58.

VII. IDENTIFICATION OF CHALLENGES

A. Challenged Claims

This Petition challenges Claims 1-14 and 16-24 of the ’777 Patent.

B. Statutory Grounds for Challenges

The Challenges are set forth in detail below and summarized as follows:

Ground	Claims	pre-AIA 35 U.S.C.	References
1	10-14, 1-5	§ 103	Wentworth, Thaler, Glicksman
2	16-24, 6-9	§ 103	Wentworth, Thaler, Glicksman, Ullman

VIII. IDENTIFICATION OF HOW THE CHALLENGED CLAIMS ARE UNPATENTABLE

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

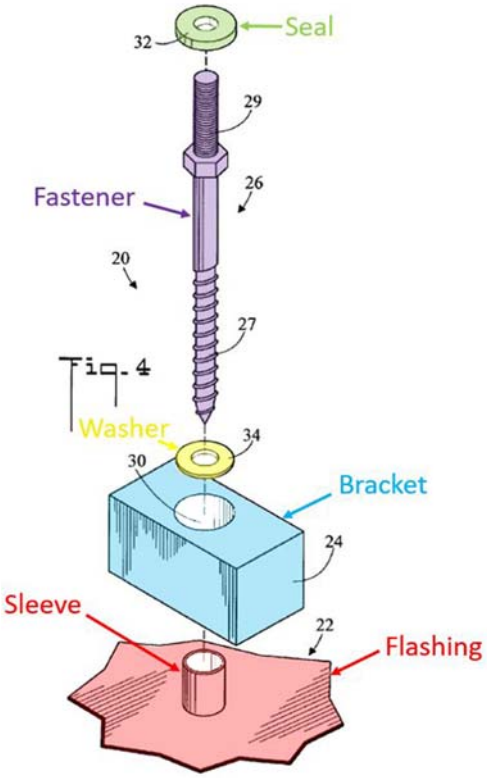
1. Wentworth

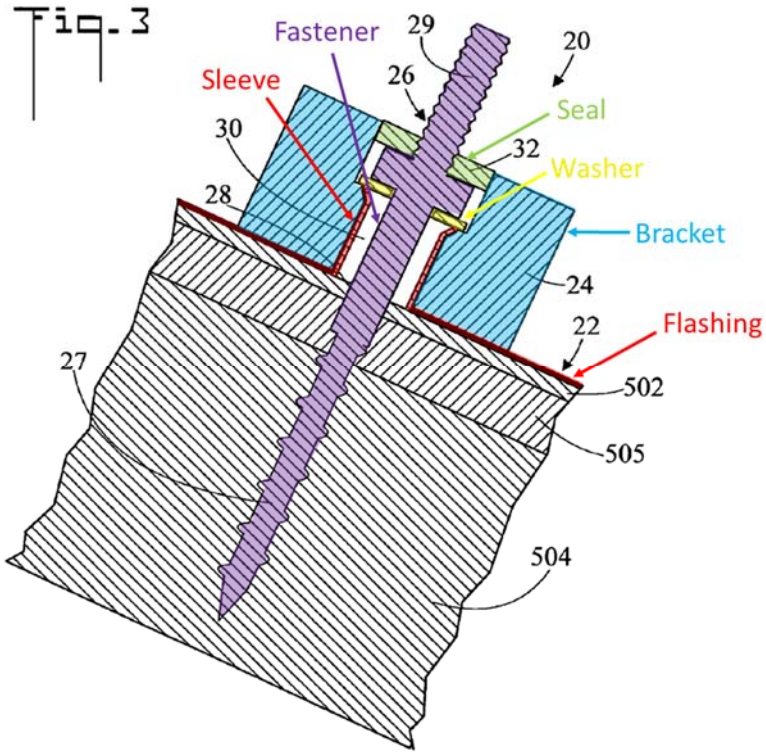
U.S. Pat. No. 7,762,027 (“Wentworth,” EX-1005), titled “System for Attaching an Article To a Roof and Method of Use,” issued on July 27, 2010 from an application filed on September 28, 2006, and as such, qualifies as prior art under at least §102(e). While Wentworth is cited on the face of the ’777 Patent, it is one of hundreds of references so cited, but it was not discussed by the examiner nor was it used to reject any claims during prosecution of that patent. EX-1001, cover; EX-1002; EX-1003 ¶ 59.

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; EX-1003 ¶ 60.

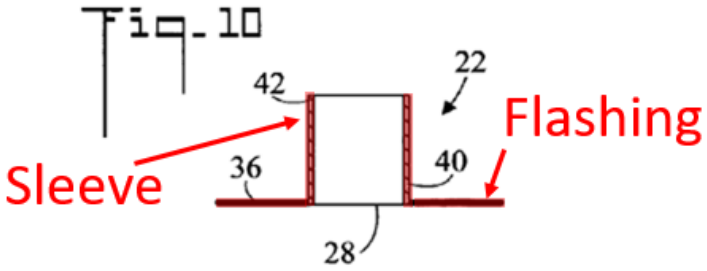
Wentworth generally relates a "system for attaching an article to a roof having shingles disposed on top of a structural member includes a flashing member…." EX-1005, Abstract. Wentworth's system or assembly includes the basic components of the '777 Patent's claims—i.e., a flashing 22 (red), a seal 32 (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-1003 ¶ 61.





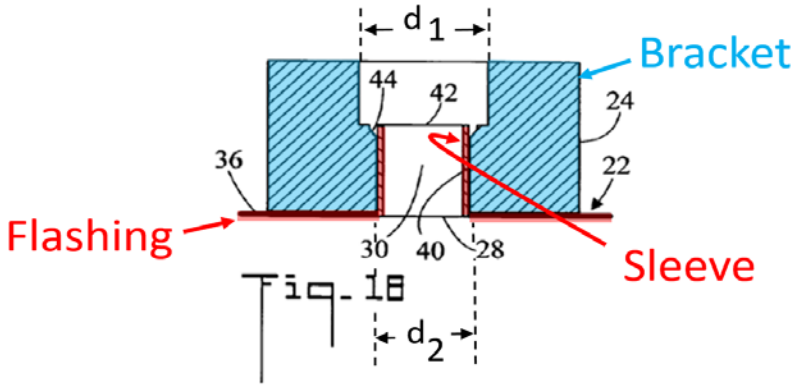
EX-1005, FIGS. 3, 4 (annotated with color and labels); EX-1003 ¶ 61.

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); EX-1003 ¶ 62.

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; EX-1003 ¶ 63. 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); EX-1003 ¶ 63.

2. Thaler

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. As such, Thaler qualifies as prior art under at least §102(b), and was not cited or applied by the examiner during the '777 Patent prosecution. EX-1003 ¶ 64.

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; EX-1003 ¶ 65.

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.

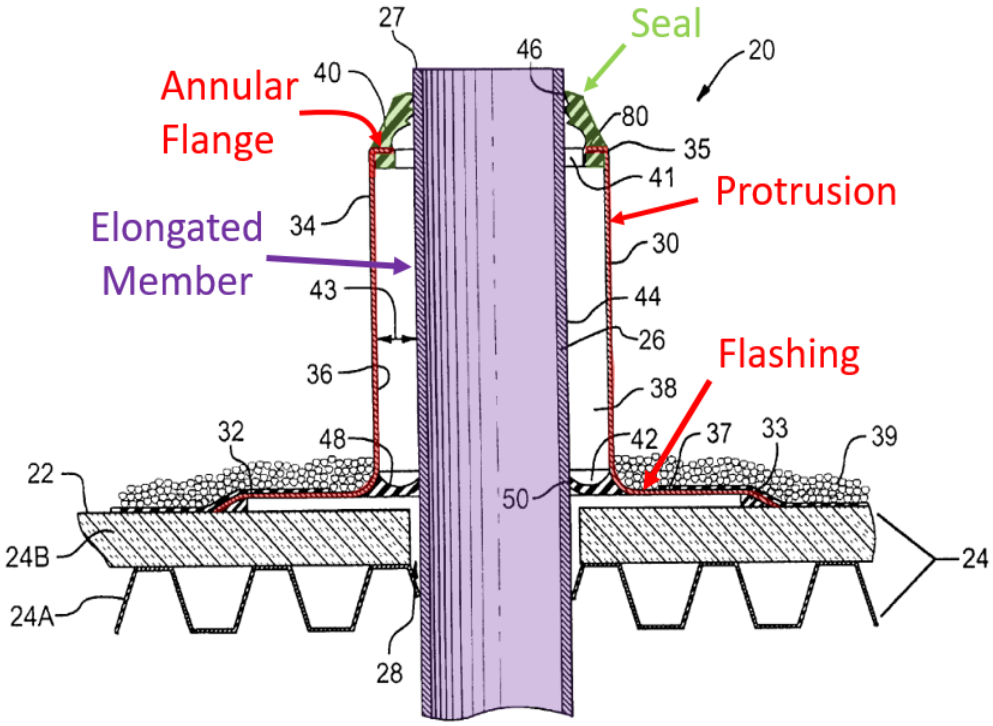


FIG.1

EX-1006, FIG. 1 (annotated with color and labels); EX-1003 ¶ 66.

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.

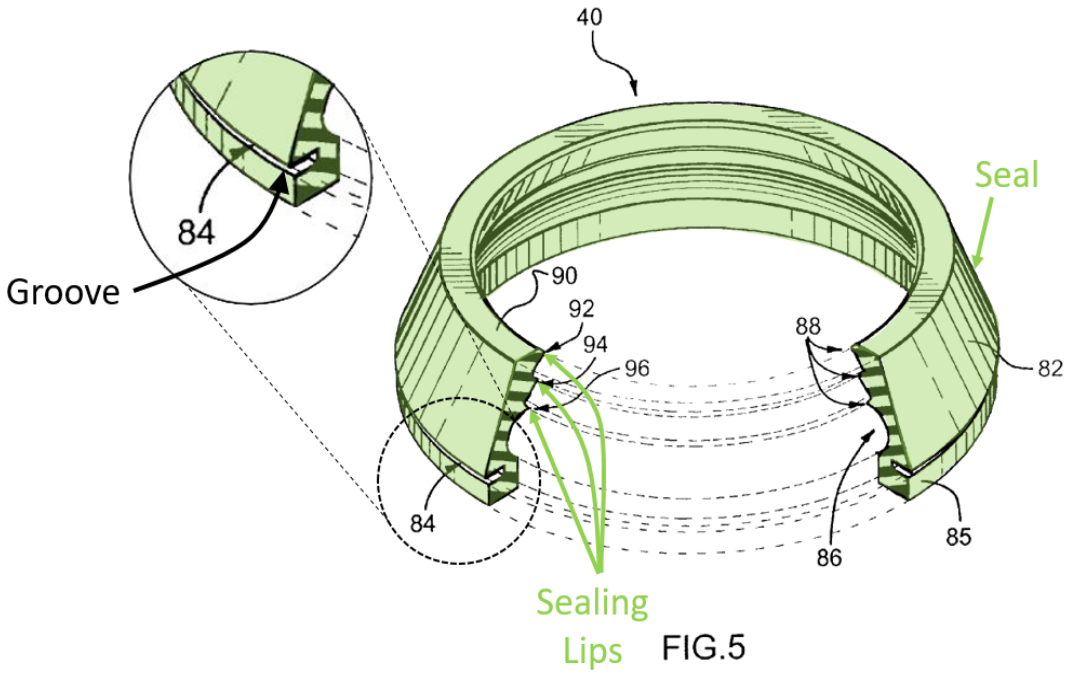


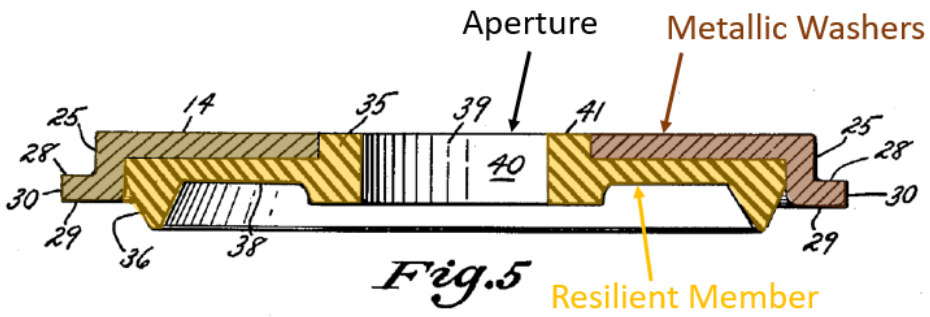
FIG.5

EX-1006, FIG. 5 (annotated with color and labels, with portion expanded); EX-1003 ¶ 67.

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; EX-1003 ¶ 68.

3. Glicksman

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. As such, Glicksman qualifies as prior art under at least §102(b), 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); EX-1003 ¶ 69.

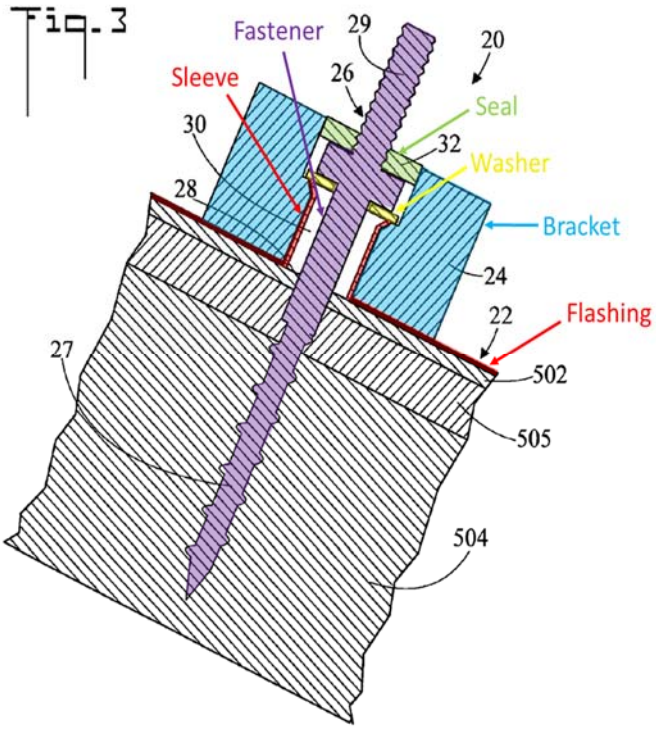
Glickman describes that these types of composite washers are known in the art as "sealing washers" which are designed to be "disposed beneath a screw head or similar fastening structure, and to be pressed against the flat surface of a sheet metal body or casing to effect a hermetic seal." EX-1007 1:8-13; EX-1003 ¶ 70.

4. Motivation to Combine

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. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). Doing so would involve no more than the use of prior art elements according to known methods to yield predictable results. EX-1003 ¶ 71.

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; EX-1003 ¶ 72.

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.



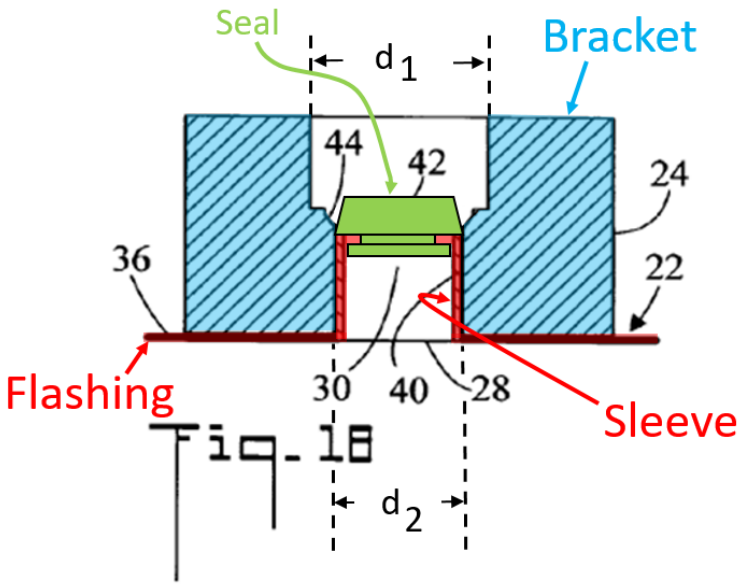
EX-1005, FIG. 3 (annotated with color and labels); EX-1003 ¶ 73.

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. EX-1003 ¶ 74.

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); EX-1003 ¶ 75.

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; EX-1003 ¶ 76.

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). *Id*.; 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, and undisputed by the applicant, 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; EX-1003 ¶ 77.

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. EX-1003 ¶ 78.

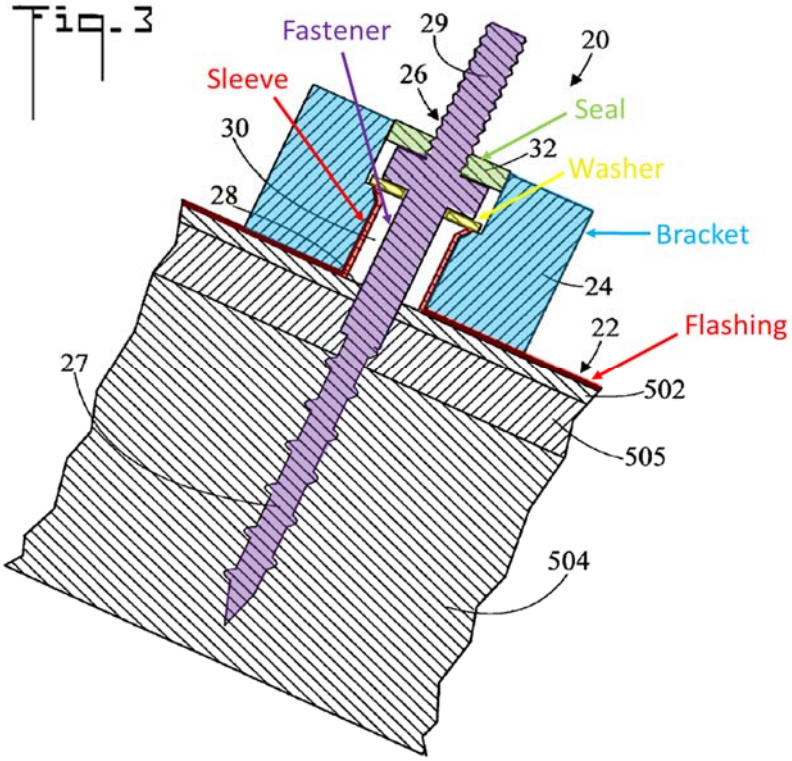
5. Detailed Application

a. <u>Claim 10</u>

[10pre] "*A roof mount assembly comprising:"*

To the extent the preamble is a limitation, 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***

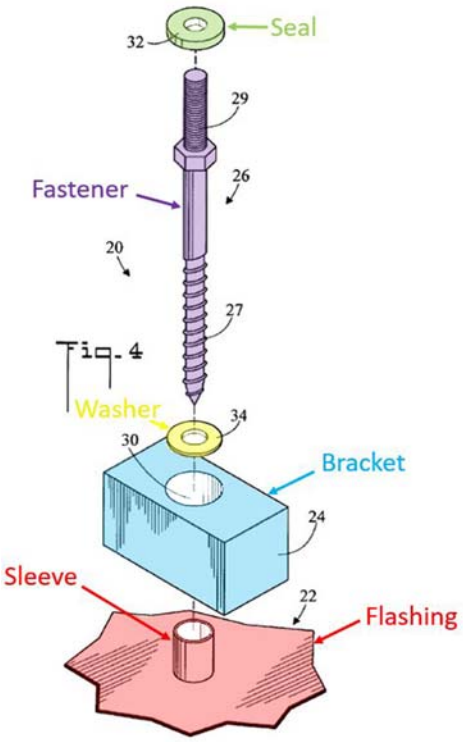
to the structural member of the roof." *Id*.

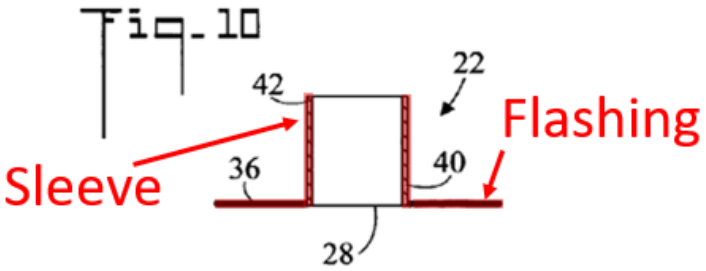


EX-1005, FIG. 3 (annotated with color and labels); EX-1003 ¶ 79.

[10a] "*a flashing including a top surface, a bottom surface, and an upwardly extending projection defining a first aperture;*"

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***." Thus, Wentworth discloses this element.





EX-1005, FIGS 4, 10 (annotated with color and labels); EX-1003 ¶ 80.

[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;*"

The combination of Wentworth, Thaler, and the knowledge of a POSA teaches or renders obvious this element. EX-1003 ¶ 81

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. EX-1003 ¶ 82.

Thaler teaches using a sealing grommet inserted into a flashing protrusion to make a watertight seal against an elongate member passing through the aperture. EX-1003 ¶ 83. 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; EX-1003 ¶ 83.

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; EX-1003 ¶ 84. 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.

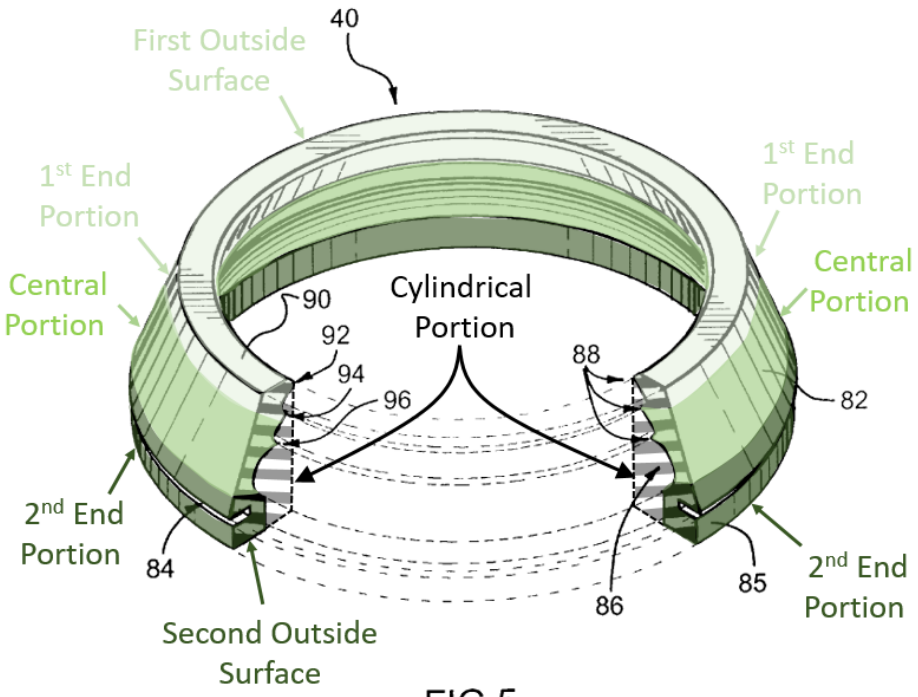


FIG.5

EX-1006, FIG. 5 (modified to show cylindrical internal grommet surface and annotated with color and labels); EX-1003 ¶ 84.

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. EX-1003 ¶ 85.

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; EX-1003 ¶ 86.

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. EX-1003 ¶ 87. Thus, when forming Thaler's grommet seal for Wentworth's assembly, the grommet would be made smaller as compared to an application for pipes. EX-1003 ¶ 87.

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-1003 ¶ 88; EX-1019, FIGS. 3c, 3d.

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. EX-1003 ¶ 89.

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*." EX-1003 ¶ 90.

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. EX-1003 ¶ 91.

[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*"

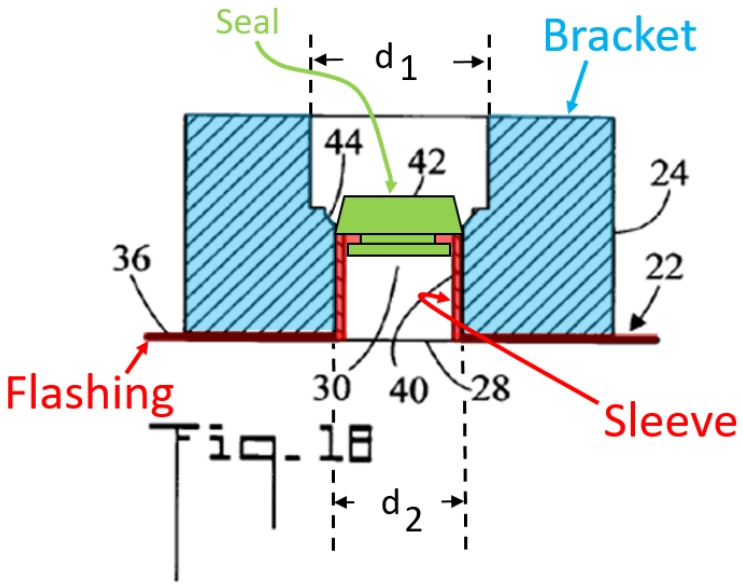
The combination of Wentworth, Thaler, and the knowledge of a POSA teaches or renders obvious this element. EX-1003 ¶ 92.

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. EX-1003 ¶ 93.

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"



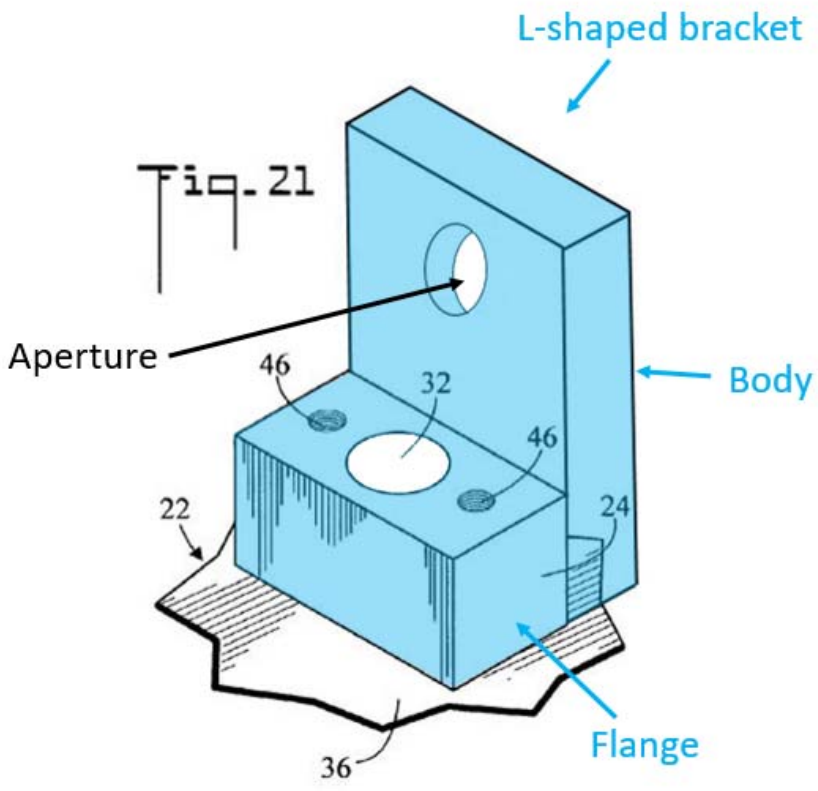
EX-1005, FIG. 18 (annotated with color and labels); EX-1003 ¶ 94.

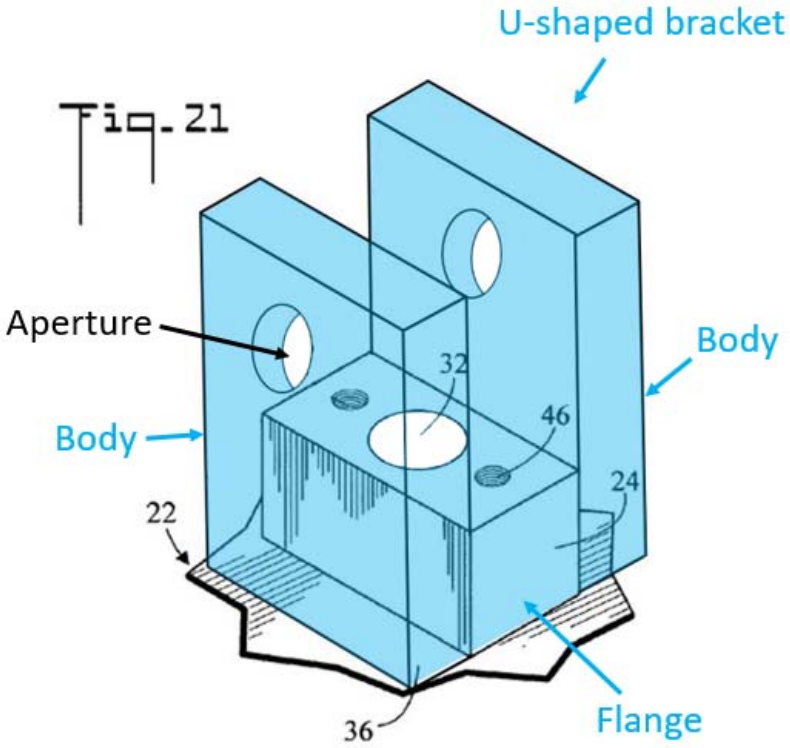
While Wentworth does not expressly disclose that its stanchion or bracket has a "*body portion*," it would have been obvious to a POSA to modify the bracket to add one. Wentworth teaches that its "system 20 [is] for attaching an article to a roof 500." EX-1005, 3:6-19. In the preferred embodiments, to 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; EX-1003 ¶ 95.

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; EX-1003 ¶ 96.

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); EX-1003 ¶ 97.

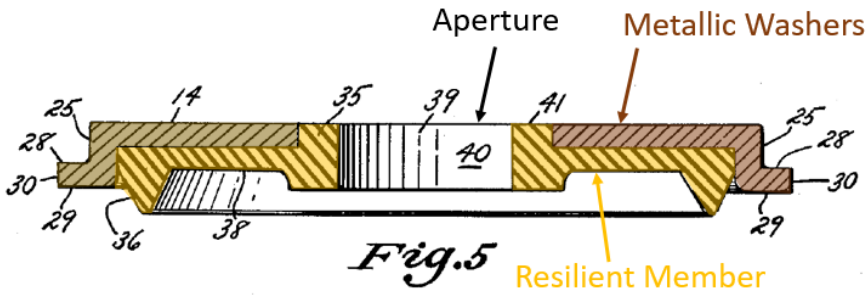
[10d] "*a washer including a polymeric portion and a rigid backing portion and defining a fourth aperture; and*"

Wentworth discloses a "***washer 34***," which a POSA understood to be a well-known sealing washer. EX-1005, 3:34-35, FIGS. 2-4; EX-1003 ¶ 98.

To the extent that the Patent Owner argues that Wentworth does not expressly discloses 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,

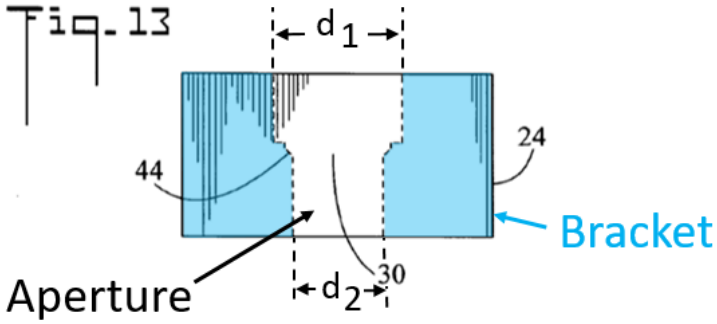
Glickman discloses "*a washer including a polymeric compression portion and a rigid backing portion and defining [an] aperture*." *Id*., 1:22-42, 2:1-4. In particular, Glicksman discloses a "***composite washer***" comprising "***a metallic washer element…and a resilient washer element***." *Id*. Glicksman describes that its washer is subjected to "continuous compressive force" when installed to "effect a hermetic seal." *Id*., 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.

Glickman'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); EX-1003 ¶ 99.

As discussed in the Motivation to Combine section, a POSA would be motivated to use Glickman'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); EX-1003 ¶ 100.

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. EX-1003 ¶ 101.

[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.*"

The combination of Wentworth, Thaler, and Glicksman teaches or renders obvious this element. EX-1003 ¶ 102.

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*." EX-1003 ¶ 103.

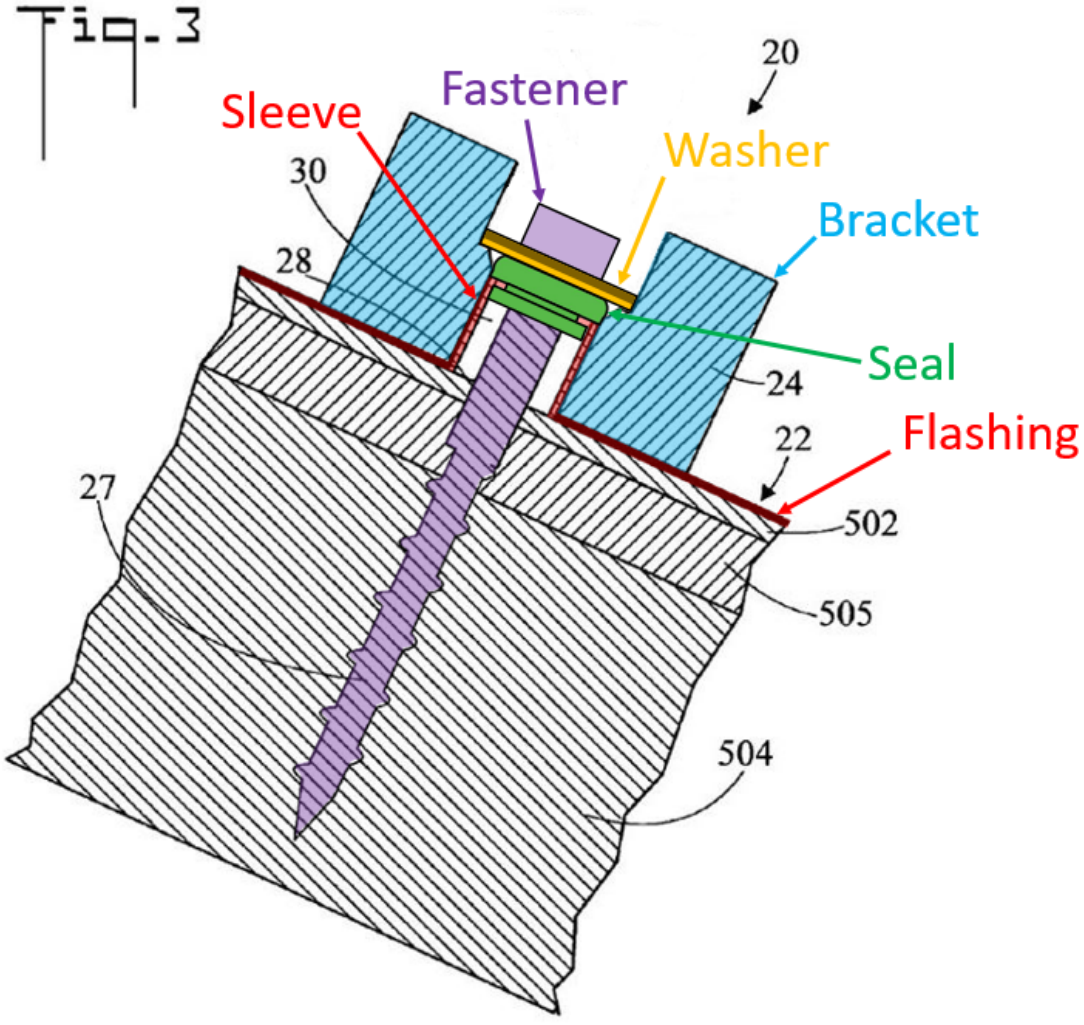
Wentworth discloses a "*fastener*" in the form of a screw or "***bolt 26 for attaching system 20 to structural member 504 (such as a rafter) of roof 500***." EX-1005, 3:20-35, FIGS. 2-4, 20. This bolt has a head at which force can be applied to screw the bolt into the roof. EX-1005, FIGS. 2-4; EX-1003 ¶ 104.

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, EX-1003 ¶ 105.

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"



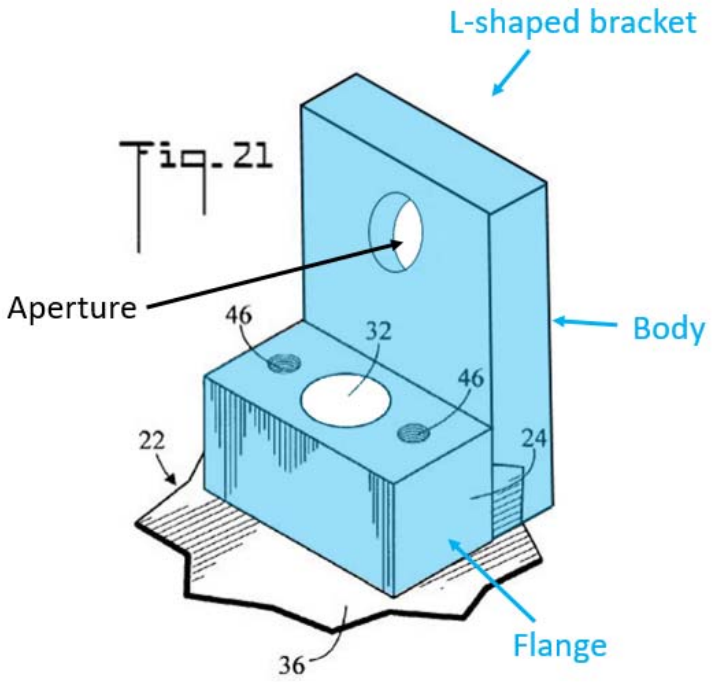
EX-1005, FIG. 3 (annotated with color and labels); EX-1003 ¶ 106.

b. Claim 11

[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.*"

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; EX-1003 ¶ 107.

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); EX-1003 ¶ 108.

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*." ; EX-1003 ¶ 109.

c. Claim 12

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

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*"). EX-1003 ¶ 110.

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*." EX-1003 ¶ 111.

d. <u>Claim 13</u>

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

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

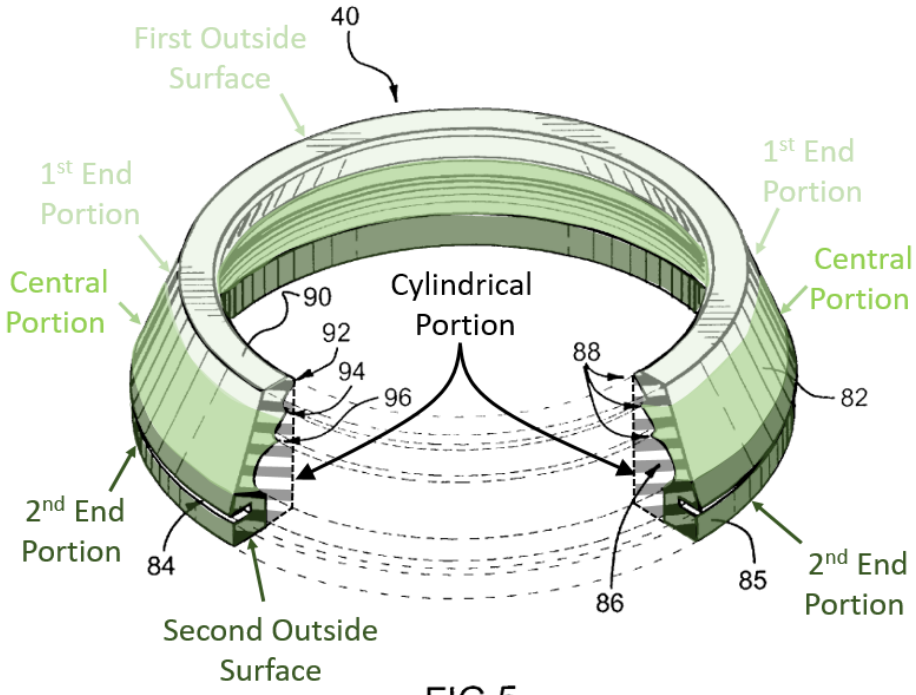


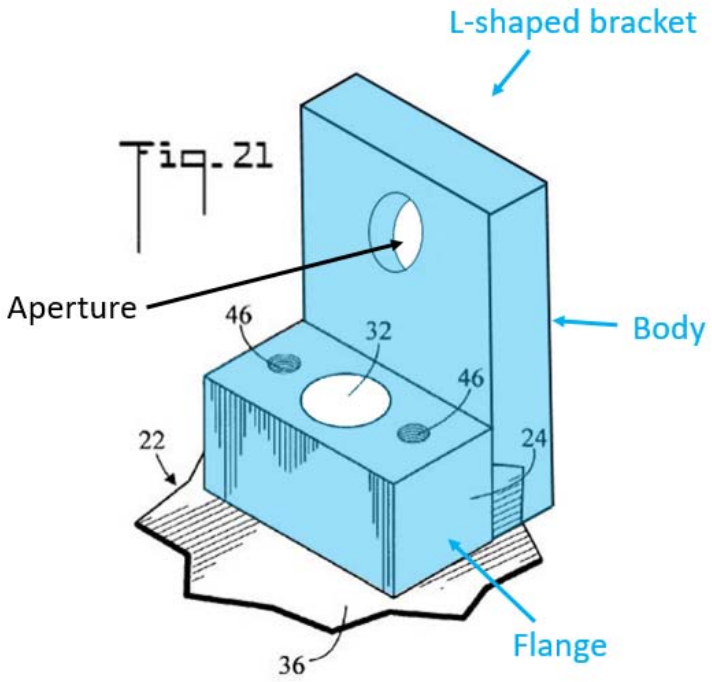
FIG.5

EX-1006, FIG. 5 (as modified to show a cylindrical internal grommet surface, and annotated with color and labels); EX-1003 ¶ 112.

e. <u>Claim 14</u>

[14] "*The roof mount assembly of claim 10, wherein the bracket is L-shaped.*"

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); EX-1003 ¶ 113.

As such, the combination of Wentworth and the understanding of a POSA teaches or renders obvious this limitation. EX-1003 ¶ 114.

f. Claim 1

[1pre] "*A roof mount assembly comprising:*"

Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10pre]. EX-1003 ¶ 115.

[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;***"

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***." EX-1003 ¶ 116.

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; EX-1003 ¶ 117.

[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;*"

Wentworth and Thaler discloses this limitation for the same reasons as discussed with respect to limitation [10b]. EX-1003 ¶ 118.

Thaler discloses that the first outside surface 90 at the top end ("*first end portion*") is "planar" and circular in shape and thus a "*first circular disk*," and the bottom end ("*second end portion*") having a second outside surface that is likewise "*planar*" and circular in shape and thus a "*second circular disk*."

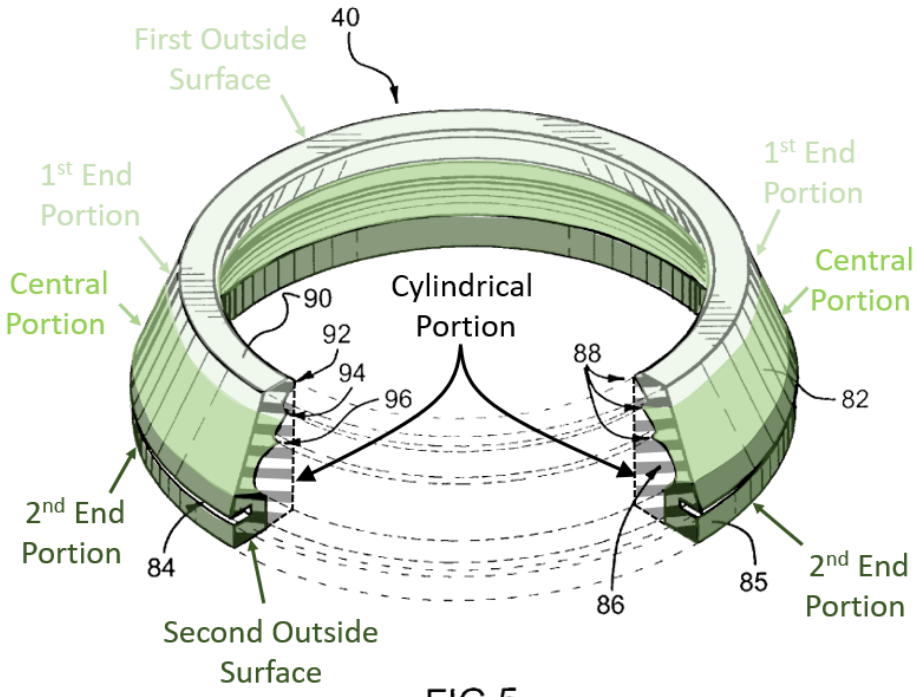


FIG.5

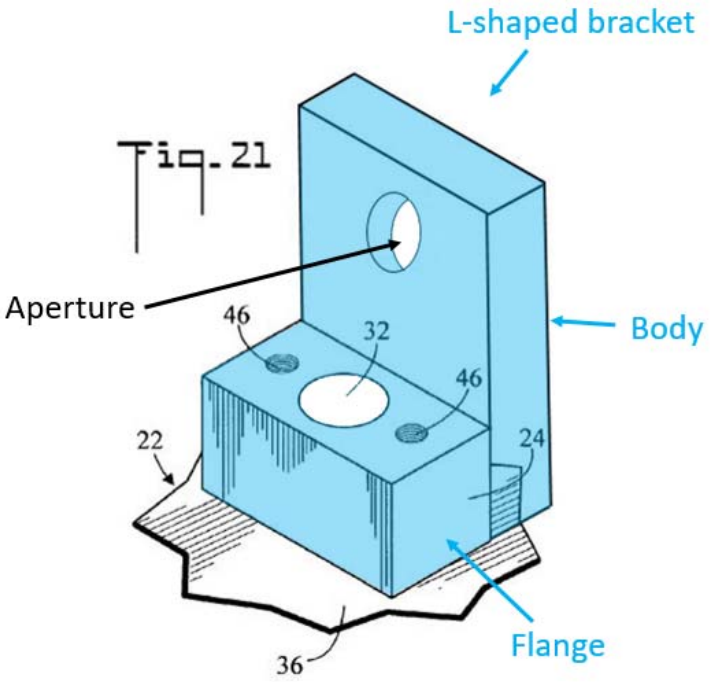
EX-1006, FIG. 5 (as modified to show a cylindrical internal grommet surface, and annotated with color and labels); EX-1003 ¶ 119.

[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;*"

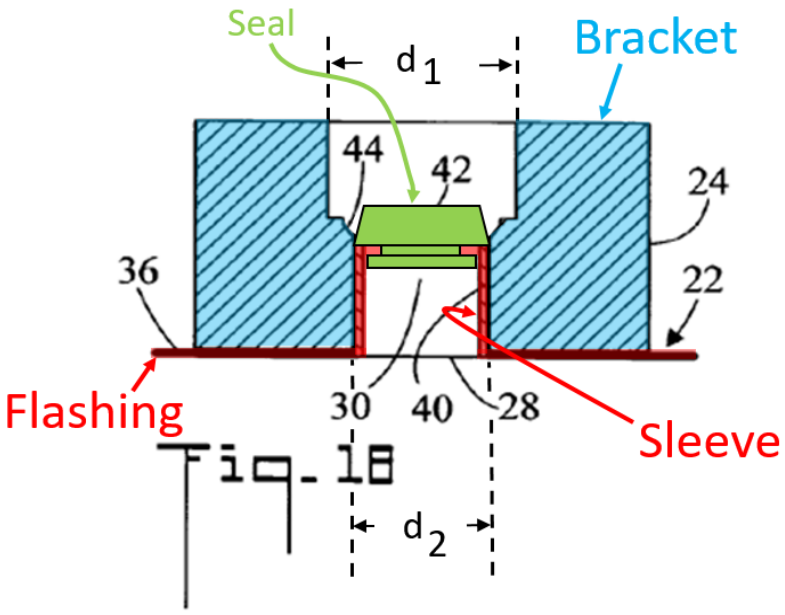
Wentworth and Thaler disclose this limitation for at least the same reasons as discussed with respect to limitation [10c]. EX-1003 ¶ 119.

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 it 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 it 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*."



"Modified to include seal inserted into aperture at top of sleeve"



EX-1005, FIGS. 21 (as modified and annotated with color and labels), 18 (as modified and annotated with color and labels); EX-1003 ¶ 121.

[1d] "*a washer including a polymeric compression portion and a rigid backing portion and defining a fifth aperture; and*"

Wentworth, Thaler, and Glicksman disclose or teach this limitation for the same reasons as discussed with respect to limitation [10d]. EX-1003 ¶ 122.

[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.*"

Wentworth, Thaler, and Glicksman disclose or teach this limitation for the same reasons as discussed with respect to limitation [10e]. EX-1003 ¶ 123.

g. <u>Claim 2</u>

[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.*"

Thaler discloses this limitation for the same reason as discussed with respect to limitations [10b] and [1b]. EX-1003 ¶ 124.

h. <u>Claim 3</u>

[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.*"

Wentworth discloses or teaches this limitation for the same reason as discussed with respect to limitation [11]. EX-1003 ¶ 125.

i. <u>Claim 4</u>

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

Wentworth and Glicksman disclose or teach this limitation for the same reason as discussed with respect to limitation [12]. EX-1003 ¶ 126.

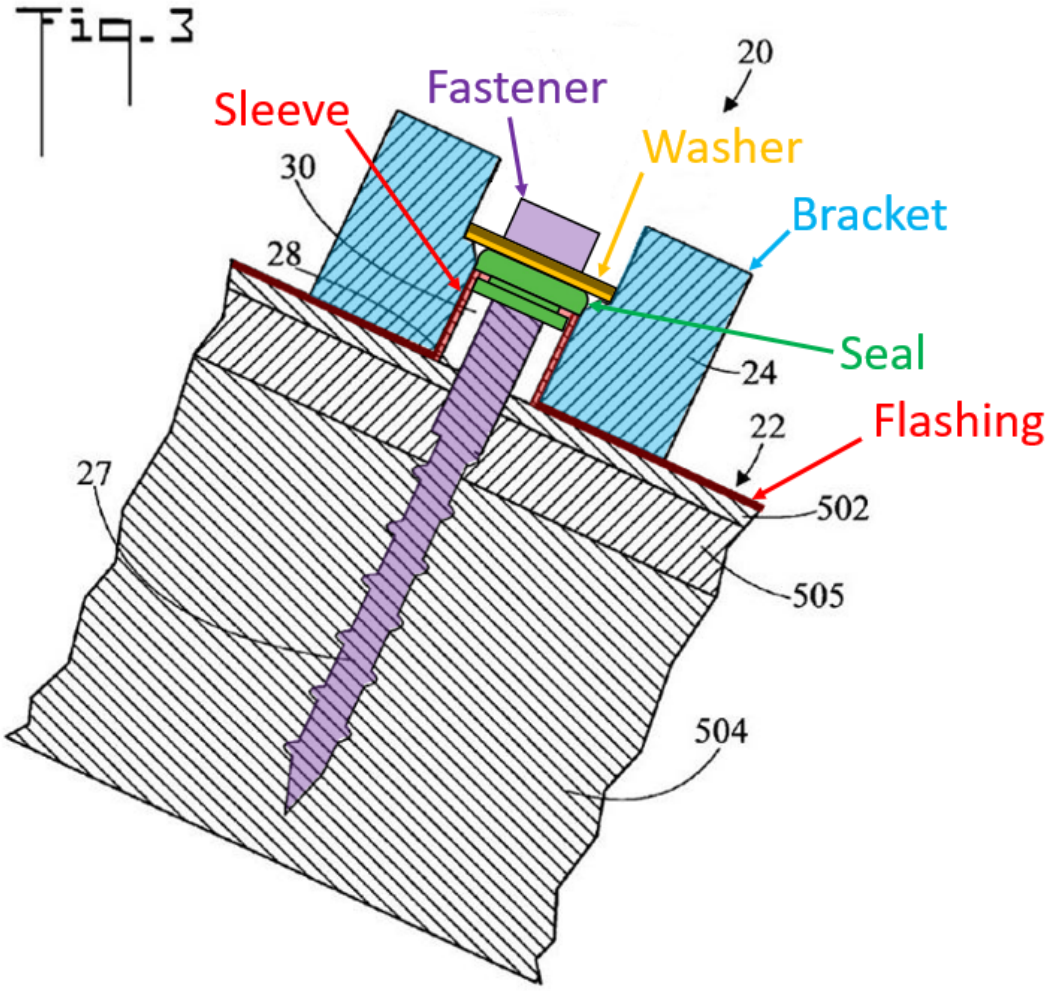
j. Claim 5

[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.*"

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. EX-1003 ¶ 127.

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 facing portions of the sleeve or projection of the flashing ("*upwardly extending projection of the flashing*"), sealing against water leak as illustrated below:

"Modified to include seal inserted into aperture at top of sleeve"



EX-1007 FIG 3 (as modified and annotated with color and labels showing seal compressed between flange of bracket and sleeve), 1:29-47; 2:39-55, FIG.; EX-1003 ¶ 128.

As such, Wentworth and Thaler teach or render obvious "*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*." EX-1003 ¶ 129.

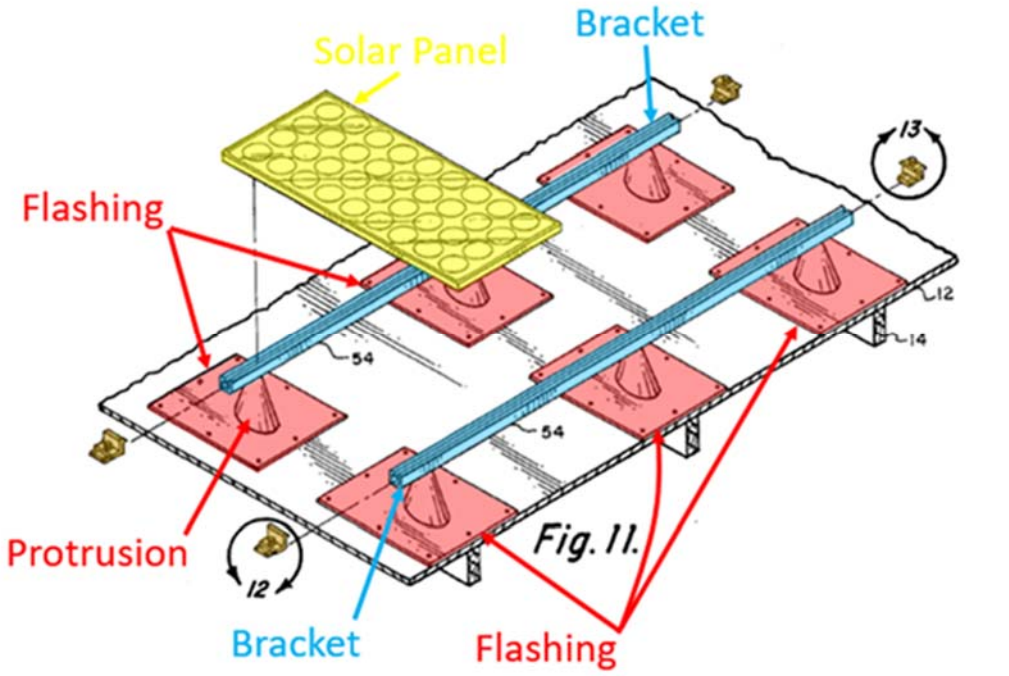
B. Ground 2: Claims 16-24 and 6-9 are unpatentable over Wentworth, Thaler, Glicksman, and Ullman

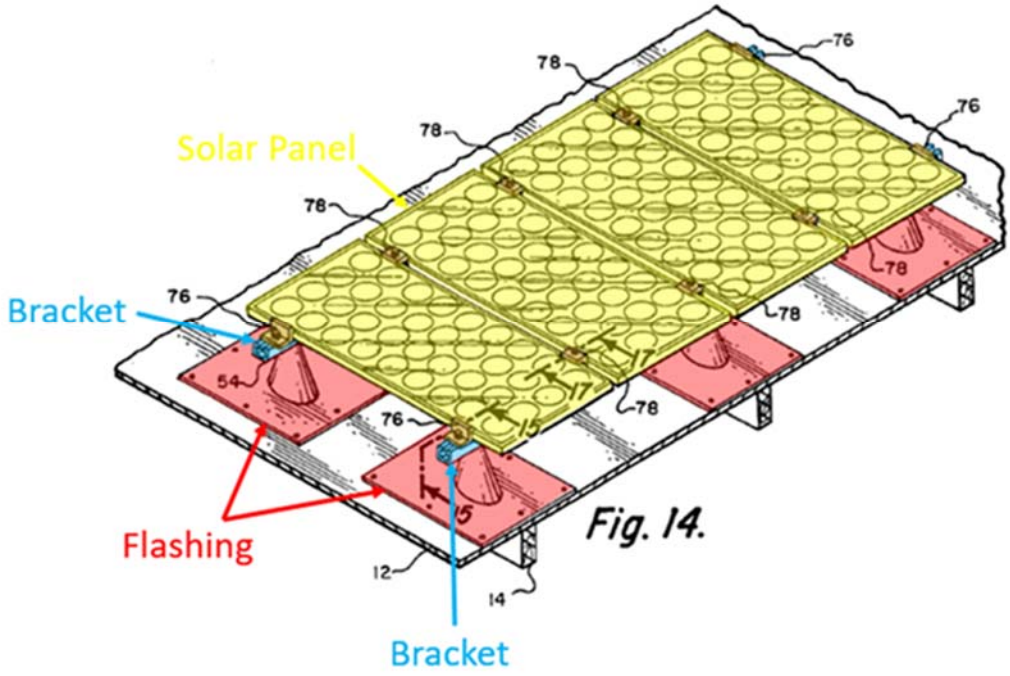
1. Ullman

U.S. Pub. No. 2003/0177706 ("Ullman," EX-1009), titled "Mounting System for Supporting Objects," issued on September 25, 2003, and as such, qualifies as prior art under at least §102(b). While Ullman is cited on the face of the '777 Patent along with hundreds of other prior art references, it was not discussed by the examiner nor used to reject any claims during prosecution of the '777 Patent. EX-1001, cover; EX-1002; EX-1003 ¶ 130.

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; EX-1003 ¶ 131.

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); EX-1003 ¶ 132.

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). EX-1003 ¶ 133.

2. Motivation to Combine

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. EX-1003 ¶ 134.

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. EX-1003 ¶ 135.

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; EX-1003 ¶ 136.

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. EX-1003 ¶ 137.

3. Detailed Application

a. Claim 16

[16pre] "*A roof mount assembly comprising:*"

Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10pre]. EX-1003 ¶ 138.

[16a] "*a flashing including a top surface, a bottom surface, an upwardly extending projection, the upwardly extending projection defining a first aperture;*"

Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10a]. EX-1003 ¶ 139.

[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;*"

Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [10b]. EX-1003 ¶ 140.

[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;*"

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. EX-1003 ¶ 141.

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; EX-1003 ¶ 142. 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. EX-1003 ¶ 142.

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:

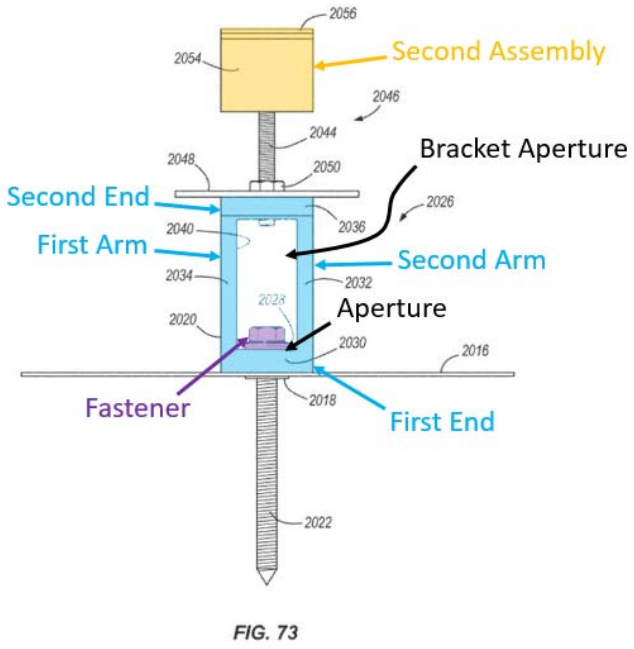


FIG. 73

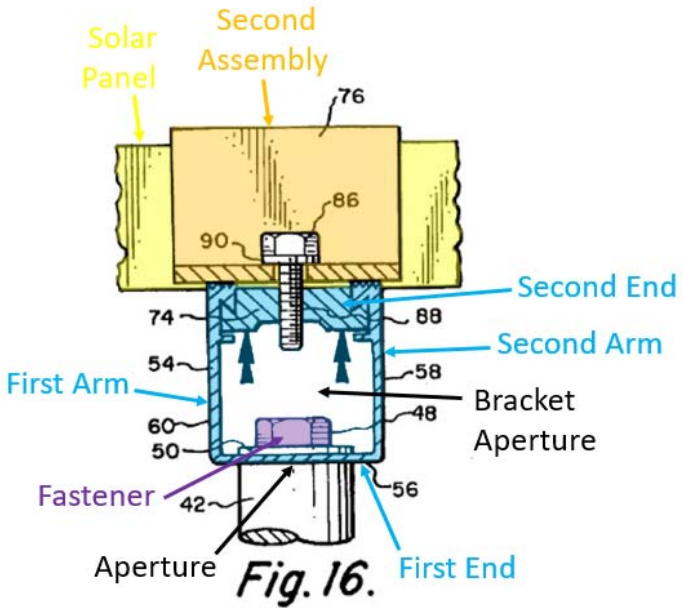
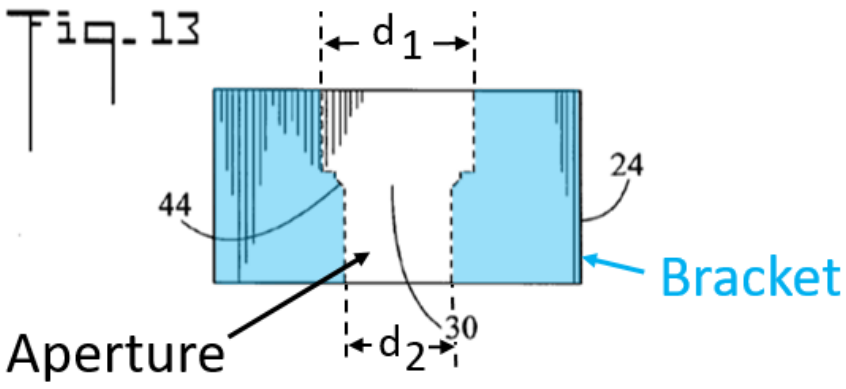


Fig. 16.

EX-1001, FIG. 73 (annotated with color and labels); EX-1009), FIG. 16 (annotated with color and labels); EX-1003 ¶ 143.

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. EX-1003 ¶ 144.

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); EX-1003 ¶ 145.

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*." EX-1003 ¶ 146.

[16d] "*a washer including a polymeric portion and a rigid backing portion and defining a fourth aperture; and*"

Glickman discloses this limitation for the same reason as discussed with respect to limitation [10d]. EX-1003 ¶ 147.

[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.*"

Wentworth, Thaler, Ullman, and Glicksman disclose or teach this limitation for the same reason as discussed with respect to limitation [10e]. EX-1003 ¶ 148.

b. <u>Claim 17</u>

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

Wentworth and Glicksman disclose or teach this limitation for the same reason as discussed with respect to limitation [12]. EX-1003 ¶ 149.

c. Claim 18

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

Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [5]. EX-1003 ¶ 150.

d. Claim 19

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

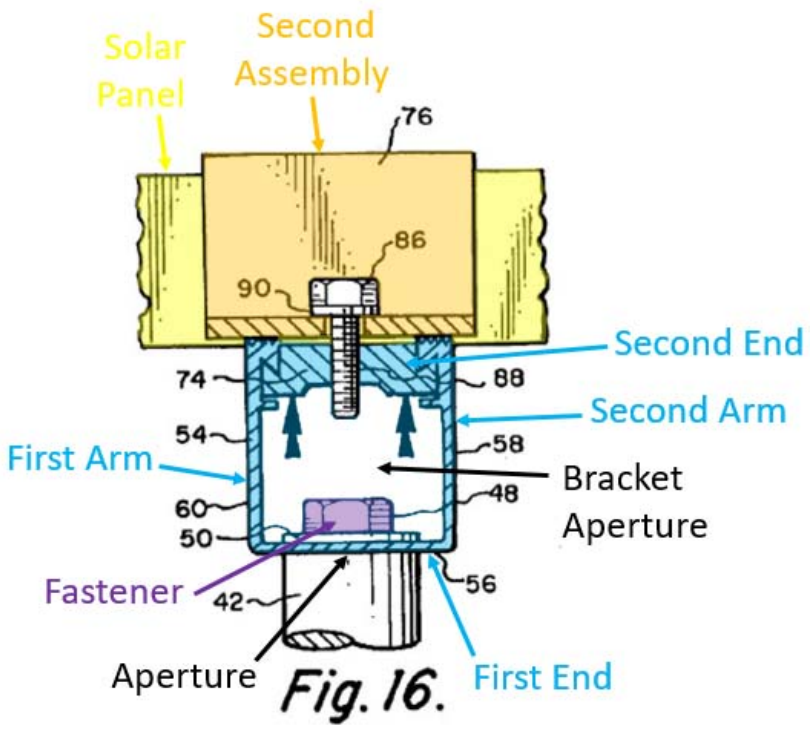
Wentworth, Thaler, and Glicksman disclose this limitation for the same reason as discussed with respect to limitation [10e] because inhibiting flow of fluid through the first aperture inhibits entry of water to a roof substrate. EX-1003 ¶ 151.

e. Claim 20

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

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:



EX-1009, FIG. 16 (annotated with color and labels); EX-1003 ¶ 152.

f. Claim 21

[21] "*The roof mount assembly of claim 16, wherein the cylindrical second aperture is sized to receive the fastener.*"

Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [10b]. EX-1003 ¶ 153.

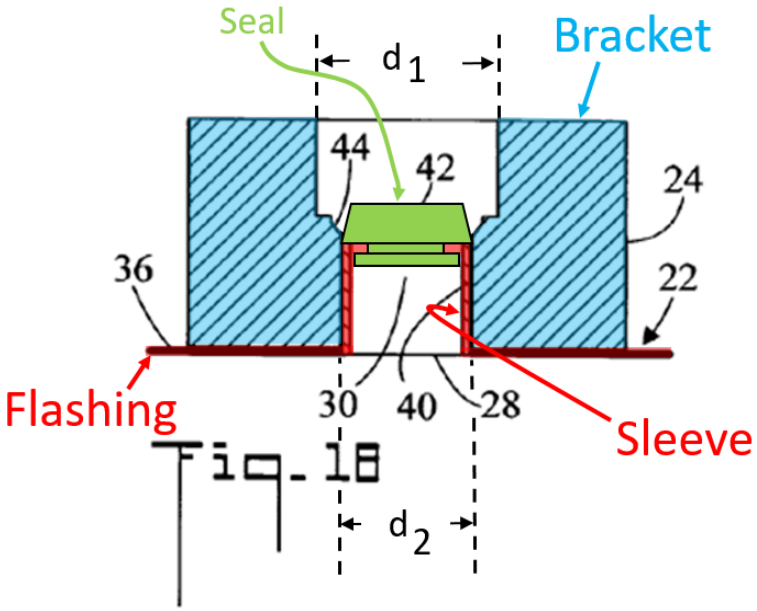
g. Claim 22

[22] "*The roof mount assembly of claim 16, wherein the rubber seal is installable within the assembly without the fastener.*"

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. EX-1003 ¶ 154.

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); EX-1003 ¶ 155.

h. <u>Claim 23</u>

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

Wentworth and Thaler disclose or teach this limitation. EX-1003 ¶ 156.

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. EX-1003 ¶ 157.

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. EX-1003 ¶ 158.

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. And 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." EX-1006, 6:27-31; EX-1003 ¶ 159.

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. EX-1003 ¶ 160.

i. Claim 24

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

Wentworth and Thaler teach or render obvious this limitation for the same reasons as discussed with respect to limitation [10b]. EX-1003 ¶ 161.

j. Claim 6

[6pre] "*A roof mount assembly comprising:*"

Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10pre]. EX-1003 ¶ 162.

[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;*"**

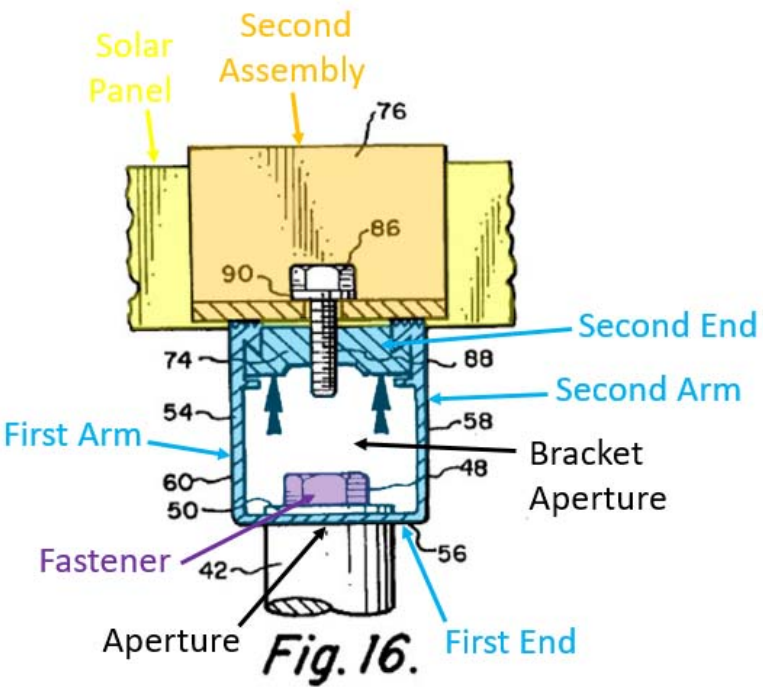
Wentworth discloses this limitation for the same reason as discussed with respect to limitation [10a]. EX-1003 ¶ 163.

[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;*"

Wentworth and Thaler disclose or teach this limitation for the same reason as discussed with respect to limitation [10b]. EX-1003 ¶ 164.

[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;*"

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); EX-1003 ¶ 165.

[6d] "*a washer including a polymeric compression portion and a rigid backing portion and defining a fourth aperture; and*"

Glicksman discloses this limitation for the same reason as discussed with respect to limitation [10d]. EX-1003 ¶ 166.

[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.*"

Wentworth, Thaler, Glicksman, and Ullman disclose or teach this limitation for the same reason as discussed with respect to limitation [10e]. EX-1003 ¶ 167.

k. <u>Claim 7</u>

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

Ullman discloses or teaches this limitation for the same reason as discussed with respect to limitation [20]. EX-1003 ¶ 168.

l. Claim 8

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

Glicksman discloses this limitation for the same reason as discussed with respect to limitation [12]. EX-1003 ¶ 169.

m. Claim 9

[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.*"

Thaler discloses this limitation for the same reason as discussed with respect to limitation [10b]. EX-1003 ¶ 170.

IX. THE BOARD SHOULD NOT EXERCISE ITS DISCRETION AND DENY INSTITUTION

Petitioner respectfully submits that the Board should not exercise its discretion under 35 U.S.C. §§ 314(a) or 325(d) to deny this Petition.

When determining whether to exercise discretion under § 325(d), "the Board uses the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2)

if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims." *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6, p. 8 (Feb. 13, 2020) (designated: March 24, 2020).

The '777 Patent has not been challenged in any other IPR proceeding or in reexamination. While some of the prior art used in this Petition was cited during original prosecution, none of those references—i.e., Wentworth and Ullman—was part of a "basis for rejection" during examination (original or reexamination). The only prior art rejection made against the Challenged Claims was for non-statutory double patenting, in view of the '522 Patent.

Here, during prosecution of the '777 Patent, the Patent Owner submitted voluminous IDSs providing hundreds of references and actions, including Wentworth and Ullman. EX-1002, pp. 111-158. However, the Examiner did not apply or discuss these references. Thus, by not considering Wentworth or Ullman, the Examiner made a material error under the second part of the test in *Advanced Bionics*. Factors (c), (e), and (f) presented in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph) ("*Becton* factors") inform the

analysis of the second part of *Advanced Bionics*. *Advanced Bionics* at 9-10.[5] With regard to *Becton* factor (c), the Examiner did not discuss Wentworth or Ullman, or the combination set forth in Grounds 1 and 2 during prosecution of the '777 Patent. Without any statements by the Examiner about these documents, factor (c) weighs against the Board exercising its discretion.

With regard to *Becton* factors (e) and (f), the Examiner erred as demonstrated by the application of the prior art in Grounds 1 and 2. The reasons not to exercise discretion are even stronger here where the applicant for the '777 Patent overcame the double patenting rejection by filing a Terminal Disclaimer, but invited reconsideration of the cited prior art by admitting "the references construed in the parent or related applications may need to be revisited." EX-1002, pp. 33-38. Because this Petition presents some of that prior art for consideration

[5] Relevant *Becton* factors are: "(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; …(e) whether petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments." *See Becton* at 17–18.

now that should have previously been considered by the Examiner, in combination with new references not previously considered and further supported by the testimony of Petitioner's expert, the Board should not deny institution under § 325(d). *Advanced Bionics* at 10 ("[I]f the record of the Office's previous consideration of the art is not well developed or silent, then a petitioner may show the Office erred by overlooking something persuasive under factors (e) and (f).").

With respect to 35 U.S.C. § 314(a), the *Fintiv* factors weigh in favor of institution. *Apple Inc. v. Fintiv, Inc*., IPR2020- 00019, Paper 11, 5–6 (PTAB Mar. 20, 2020) (Order) (precedential).

Factor 1 favors institution. Only three motions to stay pending IPR have been filed with the District Court for New Mexico since the AIA went into effect. For each of those motions, the Court granted the stay. In the related Litigation, no stay has been requested, considered, or decided. At a minimum, given that a motion to stay has not yet been filed, the Board should not infer the outcome of that motion. *Apple Inc. v. Fintiv, Inc*., IPR2020-00019, Paper 15, at 12 (P.T.A.B. May 13, 2020).

Factor 2 also favors institution. No trial date has yet been set in the Litigation, and the potential for significant disruptions caused by COVID-19 casts doubt as to when a trial can safely occur. Should the Board grant institution of this

proceeding, a Final Written Decision would be due in July or August 2022, which is ahead of the expected trial date for a typical district court patent litigation.

Factor 3 strongly favors institution because the Litigation is still in its early stages, with minimal investment by the parties and the Court. The Litigation was filed on October 2, 2020, about 4 months prior. As of the date of this Petition, the Court has not set any schedule. The parties have yet to serve infringement and invalidity contentions, and fact discovery, expert discovery, and the *Markman* process have yet to begin.

Factor 4 strongly favors institution. Petitioner will agree to stipulate not to pursue in a district court action any ground that it raised, or could have reasonably raised, in the IPR. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (Dec. 1, 2020) (precedential as to § II.A).

With respect to the fifth factor, the Petitioner Unirac, Inc. is the defendant in the parallel proceeding—i.e., the Litigation.

Factor 6 strongly favors institution for many reasons. First, Petitioner was diligent, filing the present Petition around 4 months after the Litigation was filed. Second, the ’777 Patent was not subject to rigorous examination, as the only substantive rejection was for double patenting, which the applicant overcame with a simple Terminal Disclaimer. Third, this Petition presents a number of prior art references—i.e., Thaler and Glicksman—that have never been cited to, much less

considered by, the USPTO. Related to that, fourth, applicant buried the prior art in multiple IDSs, citing hundreds of references and actions. Fifth, this Petition seeks consideration of prior art which applicant itself admitted "may need to be revisited." Sixth, this Petition is extremely strong. For example, the Grounds demonstrate that every claimed limitation was available in the prior art, and was combined in the '777 Patent for its intended purpose without the identification of any surprising results.

Thus, when considering all of the factors together, they weigh heavily against discretionary denial and in favor of institution.

X. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

A. Real Party-in-Interest (37 C.F.R. § 42.8(b)(1))

The real party-in-interest is Unirac, Inc. ("Petitioner").

B. Related Matters (37 C.F.R. § 42.8(b)(2))

1. Judicial Matters

As of the filing date of this Petition and to the best knowledge of Petitioner, the '777 Patent is involved in the following litigation: *EcoFasten Solar, LLC v. Unirac, Inc.*, 1:20-cv-01008 (D.N.M.). This case—also referred to as the "Litigation," involving Petitioner and the Patent Owner—is on-going.

2. Administrative Matters

As of the filing date of this Petition and to the best knowledge of Petitioner, the '777 Patent has not been the subject of any *inter partes* reviews, either instituted or not instituted.

3. Related Applications

Application Ser. Nos. 16/864,018 and 17/099,128, both claiming priority to the '777 Patent, were filed on April 30, 2020 and November 16, 2020, respectively, and are currently pending before the Office.

C. Lead/Back-up Counsel (37 C.F.R. § 42.8(b)(3)):

Lead Counsel: PHILIP W. WOO, USPTO Reg. No. 39,880 DUANE MORRIS LLP, 2475 Hanover Street, Palo Alto, CA 94304-1194 P: (650) 847-4145; F: (650) 644-0150; pwwoo@duanemorris.com
First Back-Up Counsel: PATRICK D. MCPHERSON, USPTO Reg. No. 46,255 DUANE MORRIS LLP, 505 9th St. NW, Suite 1000, Washington, D.C. 20004 P: (202) 776-5214; F: (202) 776-7801; PDMcPherson@duanemorris.com **Second Back-Up Counsel:** PAUL BELNAP, USPTO Reg. No. 73,106 DUANE MORRIS LLP, 505 9th St. NW, Suite 1000, Washington, D.C. 20004 P: (202) 776-7879; F: (202) 776-7801; PHBelnap@duanemorris.com

D. Notice of Service Information (37 C.F.R. § 42.8(b)(4)):

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

XI. CONCLUSION

For the reasons set forth above, Petitioner has established a reasonable likelihood of prevailing with respect to all Challenged Claims of the '777 Patent and requests the Board institute *inter partes* review and then cancel all Challenged Claims as unpatentable.

Respectfully submitted,

DUANE MORRIS LLP

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Dated: February 12, 2021

CERTIFICATION OF SERVICE ON PATENT OWNER

Pursuant to 37 C.F.R. §§ 42.6(e), 42.8(b)(4) and 42.105, the undersigned certifies that on the 12th of February, 2021, a complete and entire copy of this Petition for *Inter Partes* Review of U.S. Patent No. 10,763,777 and all supporting exhibits were served via Federal Express, postage prepaid, to EcoFasten Solar, LLC by serving the correspondence address of record for the '777 Patent:

KW LAW, LLP
6122 N. 7th Street, Suite D
Phoenix AZ 85014

and upon counsel of record for the Patent Owner in the litigation before the United States District Court for the District of New Mexico:

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ATTORNEY FOR PETITIONER

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24 *et seq*., the undersigned certifies that this document complies with the type-volume limitations. This document contains 13,805 words as calculated by the "Word Count" feature of Microsoft Word 2010, the word processing program used to create it.

Dated: February 12, 2021

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