

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PHILLIPS 66,
Petitioner,

v.

MAGĒMĀ TECHNOLOGY, LLC,
Patent Owner.

IPR2021-01173
Patent 10,584,287 B2

Before PATRICK R. SCANLON, CHRISTOPHER M. KAISER,
and BRIAN D. RANGE, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

INTRODUCTION

A. Background

Phillips 66 (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1 and 4–8 of U.S. Patent No. 10,584,287 B2 (Ex. 1001, “the ’287 patent”). Magēmā Technology LLC (“Patent Owner”) filed a Preliminary Response. Paper 12 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a) (2020). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we do not institute an *inter partes* review of any challenged claim on any asserted ground.

B. Related Matters

The parties identify *Magēmā Tech. LLC v. Phillips 66*, No. 4:20-cv-02444 (S.D. Tex.), as a matter related to the present proceeding. Pet. 1; Paper 5, 2. The parties also note that there are several *inter partes* review proceedings that challenge related patents: IPR2021-01168, IPR2021-01174, and IPR2021-01175. Pet. 1–2; Paper 5, 2.

C. The Asserted Grounds of Unpatentability

Petitioner contends that claims 1 and 4–8 of the '287 patent are unpatentable based on the following grounds (Pet. 5, 28–72):¹

Claims Challenged	35 U.S.C. § ²	References/Basis
1, 4–8	102	Weiss '974 ³
1, 4–8	103	Weiss '974, Weiss '515 ⁴
6–8	103	Weiss '974, Weiss '515, Weiss '444 ⁵
1, 4, 5	103	ISO 8217:2017, ⁶ Annex VI, ⁷ Weiss '974, Weiss '515
1, 4, 5	103	ISO 8217:2017, Annex VI, Weiss '974, Weiss '515, AAPA ⁸
6–8	103	ISO 8217:2017, Annex VI, Weiss '974, Weiss '515, Weiss '444

¹ Petitioner also relies on a declaration from Edward L. Sughrue II, Ph.D. Ex. 1082.

² Because the '287 patent has an effective filing date subsequent to March 16, 2013, the effective date of applicable amendments to the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011), we refer to the AIA versions of §§ 102 and 103.

³ US 2018/0134974 A1, published May 17, 2018 (Ex. 1002).

⁴ US 2014/0299515 A1, published Oct. 9, 2014 (Ex. 1094).

⁵ US 2014/0332444 A1, published Nov. 13, 2014 (Ex. 1079).

⁶ International Organization for Standardization. (2017). *Petroleum products – Fuels (class F) – Specifications of marine fuels* (ISO Standard No. 8217:2017(E)) (Ex. 1003).

⁷ Amendments to the Annex of the Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 Relating Thereto (Revised MARPOL Annex VI), Oct. 10, 2008, Resolution MEPC.176(58) (Ex. 1004).

⁸ Ex. 1001, 22:43–23:49, 23:61–24:60.

Claims Challenged	35 U.S.C. § ²	References/Basis
6–8	103	ISO 8217:2017, Annex VI, Weiss '974, Weiss '515, Weiss '444, AAPA

D. The '287 Patent

The '287 patent, titled “Heavy Marine Fuel Oil Composition,” issued on March 10, 2020. Ex. 1001, codes (45), (54). According to the patent, “[t]here are two marine fuel oil types, distillate based marine fuel oil, and residual based marine fuel oil.” *Id.* at 1:5–6. “Distillate based marine fuel oil, also known as Marine Gas Oil (MGO) or Marine Diesel Oil (MDO) comprises petroleum fractions separated from crude oil in a refinery via a distillation process.” *Id.* at 1:6–10. “Residual based fuels oils or Heavy Marine Fuel Oil (HMFO) comprises a mixture of process residues—the fractions that don’t boil or vaporize even under vacuum conditions.” *Id.* at 1:28–31. HMFO has been used by large ocean-going ships “to power large two stroke diesel engines for over 50 years” but “is generally characterized as . . . high in sulfur.” *Id.* at 1:38–56.

Because of this sulfur content, “[e]missions from HMFO burning in ships contribute significantly to both global air pollution and local air pollution levels.” *Id.* at 1:60–67. International conventions to reduce pollution were enacted, with “all marine fuel oils used in the North American [Emission Control Area]” being required to contain no more than 0.10 percent sulfur by weight after January 1, 2015. *Id.* at 2:1–33. This requirement has resulted in “a very strong economic incentive to meet the marine industry demands for low sulfur HMFO.” *Id.* at 2:33–42.

The '287 patent discusses the shortcomings of some possible solutions to this problem. Switching to alternative fuels poses a range of issues that

are not well understood, and each alternative fuel has created economic and technical difficulties. *Id.* at 3:39–54. For example, using liquefied natural gas (LNG) “will require extensive renovation and replacement of the bunker fuel storage and fuel transfer systems of the ship” for the “onboard storage of a cryogenic liquid.” *Id.* at 3:55–4:6. Replacing HMFO with MGO or MDO is impossible because it would “result[] in an annual shortfall in marine fuel of over 200 million metric tons” due to a lack of excess refining capacity. *Id.* at 4:24–38. Blending HMFO with low-sulfur MGO or MDO would “hurt[] key properties of the HMFO, specifically viscosity and density,” would form “fuel tank sludge,” and would not be economically viable. *Id.* at 4:39–5:9. Accordingly, “[t]here remains a long standing and unmet need for processes and devices that remove the environmental contaminants (i.e. sulfur, nitrogen, phosphorous, metals especially vanadium and nickel) from HMFO without altering the qualities and properties that make HMFO the most economic and practical means of powering ocean going vessels.” *Id.* at 6:36–42.

The ’287 patent attempts to solve this problem by “reduc[ing] the environmental contaminates [sic] from a Heavy Marine Fuel Oil (HMFO) in a process that minimizes the changes in the desirable properties of the HMFO and minimizes the unnecessary production of by-product hydrocarbons (i.e. light hydrocarbons having (C₁-C₈) and wild naphtha (C₅-C₂₀)).” *Id.* at 6:50–55.

E. Illustrative Claim

Of the challenged claims, claim 1 is independent. Claim 1 is illustrative of the claimed subject matter of the ’287 patent and is reproduced below.

1. A heavy marine fuel oil product that is ISO 8217: 2017 compliant for a residual marine fuel, and is of merchantable quality as such, and has a sulfur content (ISO 14596 or ISO 8754) less than 0.5 wt %, and is made from a heavy marine fuel oil that is ISO 8217:2017 compliant that has a sulfur content (ISO 14596 or ISO 8754) greater than 0.5% wt., said product being produced by a process comprising:

a) combining a predetermined quantity of the heavy marine fuel oil with a predetermined amount of an Activating Gas to form a Feedstock Mixture;

b) bringing the Feedstock Mixture up to predetermined process conditions of temperature and pressure to form a heated and pressurized Feedstock Mixture;

c) contacting said heated and pressurized Feedstock Mixture in at least one reactor vessel with one or more catalyst systems selected from the group consisting of: an ebulliated bed supported transition metal heterogeneous catalyst, a fixed bed supported transition metal heterogeneous catalyst, and a combination of ebulliated bed supported transition metal heterogeneous catalysts and fixed bed supported transition metal heterogeneous catalysts, wherein said contacting takes place under reactive process conditions to form a Process Mixture;

d) removing the Process Mixture from being in contact with the one or more catalyst systems in the at least one reactor vessel and sending the Process Mixture via fluid communication from the at least one reactor vessel to at least one second vessel for separating the Liquid Components of the Process Mixture from the Gaseous Components of the Process Mixture;

e) sending by fluid communication the Liquid Components of the Process Mixture from the at least one second vessel to at least one third vessel, and removing from the Liquid Components of the Process Mixture any residual gaseous components and any by-product hydrocarbon components to form said heavy marine fuel oil product; and,

f) discharging from said at least one third vessel said heavy marine fuel oil product.
Ex. 1001, 25:42–26:28.

ANALYSIS

A. Claim Construction

Petitioner does not argue that any term appearing in the challenged claims requires express construction. Pet. 24–26. Instead, Petitioner indicates that the claim term “merchantable quality,” is defined in the Specification, and “a ‘merchantable’ HMFO can be used and sold as, and is fungible with, HMFO.” *Id.* at 24–25 (citing Ex. 1001, 8:31–35; Ex. 1082 ¶ 46).

For its part, Patent Owner “contends that no claim construction is necessary apart from that agreed to by the parties in the Litigation and that contained in the district court’s claim construction order.” Prelim. Resp. 36 (citing Ex. 1107). Patent Owner further contends the parties have “agreed that ‘compliant with ISO 8217:2017’ means the material ‘meets the bulk physical properties of any of a RMA, RMB, RMD, RME, RMG, or RMK residual marine fuel as set forth in Table 2 of the ISO 8217:2017 standard.’” *Id.* at 37 (citing Ex. 1016, 1–2).

We determine we need not expressly construe any terms of the challenged claims at this stage of the proceeding. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

B. Grounds 1–3: Asserted Anticipation by Weiss '974 and Asserted Obviousness Based on Weiss '974 and Weiss '515

Petitioner argues that claims 1 and 4–8 of the '287 patent are anticipated by Weiss '974 and would have been obvious over the combination of Weiss '974 and Weiss '515. Pet. 28–56. Petitioner also argues that claims 6–8 would have been obvious over the combination of Weiss '974, Weiss '515, and Weiss '444. *Id.* at 57–59.

1. Weiss '974

Weiss '974 is titled “Method for Converting Feedstocks Comprising a Hydrocracking Step, a Precipitation Step and a Sediment Separation Step, in Order to Produce Fuel Oils.” Ex. 1002, code (54). The patent “relates to a process for the conversion of heavy oil feeds of the atmospheric residue and/or vacuum residue type for the production of heavy fractions for use as fuel oil bases, in particular bunker fuel bases, with a low sediment content.” *Id.* ¶ 1.

The patent states that “quality requirements for marine fuels are described in ISO standard 8217,” which places restrictions on sulphur content by weight, but “a vessel could use a sulphur-containing fuel oil as long as the vessel is equipped with a system for treating fumes allowing the oxides of sulphur emissions to be reduced.” *Id.* ¶ 2. However, according to the patent, “[a]nother very restrictive recommendation is the sediment content after aging in accordance with ISO 10307-2 (also known as IP390).” *Id.* ¶ 3.

Weiss '974 describes a known, prior-art process “employing an ebullated bed hydrocracking step and a step with a reactor termed an upflow reactor associated with a reactor termed a stripper. The sediment content of

the final effluent is reduced compared with the effluent from the ebullated bed step.” *Id.* ¶ 8. However, “[a]lthough ebullated bed technology is known to be suitable for heavy feeds charged with impurities, the nature of the ebullated bed means that it produces catalyst fines and sediments which have to be removed in order to provide a product quality such as bunker fuel.” *Id.* ¶ 10. To improve on this, Weiss ’974 introduces a “process integrating a precipitation step and physical separation of the sediments downstream of a hydrocracking step.” *Id.* ¶ 12. Weiss ’974 further states that

a process of this type can be used to obtain heavy fractions having a low sediment content after aging, said heavy fractions advantageously being able to be used completely or in part as a fuel oil or as a fuel oil base, in particular as bunker fuel or bunker fuel base complying with specifications, namely a sediment content after aging (measured in accordance with the method ISO 10307-2) of 0.1% by weight or less.

Id. The patent describes a process with the following sequence of steps:

- a) a step of hydrocracking the feed in the presence of hydrogen;
- b) a step of separating the effluent obtained from step a);
- c) a step of precipitating sediments, in which the heavy fraction obtained from the separation step b) is brought into contact with a distillate cut at least 20% by weight of which has a boiling point of 100° C. or more for a period of less than 500 minutes, at a temperature in the range 25° C. to 350° C., and at a pressure of less than 20 MPa;
- d) a step of physical separation of the sediments from the heavy fraction obtained from step c);
- e) a step of recovering a heavy fraction having a sediment content, measured using the ISO 10307-2 method, of 0.1 % by weight or less.

Id. at code (57) (formatting added for readability). Weiss '974 also discloses an optional hydrotreatment (step f) to reduce the sulphur content of the heavy fraction obtained from step d) or e). *Id.* ¶¶ 90–93.

2. *Weiss '515*

Weiss '515 is titled “Process for Conversion of Petroleum Feed Comprising an Ebullated Bed Hydroconversion Step in a Fixed Bed Hydrotreatment Step for the Production of Low Sulphur Content Fuel.” Ex. 1094, code (54). The patent describes “a conversion method for heavy petroleum feeds for the production of fuel bases of the type vacuum distillate, atmospheric residue and vacuum residue, in particular bunker fuel bases with low sulphur content.” *Id.* ¶ 1.

Weiss '515 describes the following sequence of steps in its method:

- a step of ebullated bed hydroconversion of the feed in the presence of a supported catalyst,
- a separation step allowing a residual fraction to be obtained,
- a step of fixed bed hydrotreatment of the residual fraction using an upstream system of permutable reactors.

Id. at code (57).

3. *Weiss '444*

Weiss '444 is titled “Process for Hydroconverting Oil Feeds in Fixed Beds for the Production of Low Sulphur Fuels.” Ex. 1079, code (54).

Weiss '444 “relates to a process for the conversion of heavy oil feeds for the production of fuel bases of the vacuum distillate, atmospheric residue and vacuum residue type, in particular bunker fuel bases with a low sulphur content.” *Id.* ¶ 1. The patent states that its process “can be used to produce fuel bases, in particular bunker fuel bases, complying with the recommendations of the MARPOL convention,” specifically “version 2010

of ISO standard 8217 (Annex VI to the MARPOL convention),” which sets levels for sulphur, sediments, and viscosity. *Id.* ¶¶ 3–4.

Weiss ’444 describes the following sequence of steps in its method:

- a step for fixed bed hydrodemetallization of the feed using an upstream system of fixed bed swing reactors;
- a step for fixed bed hydrocracking of the hydrodemetallized effluent in the presence of a hydrocracking catalyst;
- a step for separation in order to obtain a heavy fraction;
- a step for hydrodesulphurization of the heavy fraction in which hydrogen is reinjected.

Id. at code (57).

4. *Analysis*

Independent claim 1 (and, thus, claims 4–8 depending therefrom) of the ’287 patent recites “[a] heavy marine fuel oil product that . . . is made from a heavy marine fuel oil that is ISO 8217:2017 compliant.” Ex. 1001, 25:42–46. Claim 1 recites additional limitations requiring the heavy marine fuel oil product (*id.* at 26:20–28) and the heavy marine fuel oil (*id.* at 26:20–28).⁹

Petitioner relies on Weiss ’974 to teach or suggest the claimed HMFO limitations. Pet. 32 (citing Ex. 1002 ¶¶ 2, 12, 20, 87–89, 113–114, 116, 118, 120–124, 127–128), 35 (citing Ex. 1002 ¶¶ 2, 12, 20, 92–94, 108, 110), 35–36 (citing Ex. 1002 ¶¶ 2–3, 6, 10–13, 20, 65, 87, 89, 127–128), 45 (citing Ex. 1002 ¶¶ 1–2, 12, 90–94, 108), 47 (citing Ex. 1002 ¶¶ 2, 12, 20, 87, 89, 127–128). Specifically, Petitioner argues that Weiss ’974’s “exemplary

⁹ Petitioner argues that several limitations of claim 1 are not entitled to patentable weight. Pet. 27, 46–52. Patent Owner disagrees. Prelim. Resp. 40–41. Because our Decision does not turn on these limitations, as explained below, we do not address this issue.

process . . . yielded an ISO 8217 RMG 380 fuel oil.” *Id.* at 32 (citing Ex. 1002 ¶¶ 127–128). Petitioner also argues that Weiss ’974 teaches “a bunker fuel of a ‘desired . . . fuel oil grade’ that meets marine fuels’ ‘quality requirements,’ rendering the LSFO . . . fungible with[] HMFO.” *Id.* at 35. In addition, Petitioner argues that the “post-hydrotreatment LSFO” of Weiss ’974 is “an HMFO product.”¹⁰ *Id.* at 45 (citing Ex. 1002 ¶¶ 1–2, 12, 90–94, 108). Finally, Petitioner alleges that “Weiss ’974’s LSFO is produced from, or obviously would have been produced from (Ground 2), an ISO-8217:2017-compliant . . . HSFO via hydrotreatment.” *Id.* at 47 (citing Ex. 1002 ¶¶ 2, 12, 20, 87, 89, 127–128).

The ’287 patent defines a Heavy Marine Fuel Oil (“HMFO”) in part as “a petroleum product fuel compliant with the ISO 8217: 2017 standards for the bulk properties of *residual* marine fuels.” Ex. 1001, 7:51–54 (defining “Heavy Marine Fuel Oil”) (emphasis added); *see also id.* at 7:58–65 (defining “Feedstock HMFO”), 8:15–21 (defining “Product HMFO”). Thus, HMFO, as the ’287 patent defines it, must meet the standard for a *residual* marine fuel. This is important because marine fuel oil can be either residual-based or distillate-based. Ex. 1082 ¶ 29; Ex. 2007 ¶ 25; *see also* Ex. 1003, 14–18 (ISO 8217 providing separate tables of properties for “[d]istillate marine fuels” and “[r]esidual marine fuels”).

Thus, to demonstrate that Weiss ’974 teaches or suggests both the feedstock HMFO and the product HMFO of the challenged claims, as Petitioner argues it does, Petitioner must show that Weiss ’974 teaches or suggests four facts: (1) the pre-hydrotreatment HSFO is a residual petroleum

¹⁰ Petitioner defines “HSFO” as being a “high-sulfur HMFO” and “LSFO” as being a “low-sulfur HMFO.” Pet. 1.

product, (2) the pre-hydrotreatment HSFO is ISO-8217-compliant, (3) the post-hydrotreatment LSFO is a residual petroleum product, and (4) the post-hydrotreatment LSFO is ISO-8217-compliant. Petitioner does not show all four of these facts sufficiently to demonstrate a reasonable likelihood of prevailing in showing that the challenged claims are anticipated by Weiss '974 or obvious over the combination of Weiss '974 and Weiss '515.

With respect to the pre-hydrotreatment HSFO of Weiss '974, many of Petitioner's arguments show only that the fuel oil is a bunker fuel that complies with ISO 8217. *See, e.g.*, Pet. 32, 46–47. These arguments alone are insufficient because ISO-8217-compliant bunker fuels can be either distillate-based or residual-based. Ex. 1003, 14–17; Ex. 1082 ¶ 29; Ex. 2007 ¶ 25. Thus, showing that a fuel is a bunker fuel or that a fuel complies with ISO 8217 does not show that the fuel is residual-based.

One argument, in our view, may show sufficiently (for institution purposes) that Weiss '974 teaches or suggests that its pre-hydrotreatment HSFO is residual-based: Petitioner argues that Weiss '974's "exemplary process . . . yielded an ISO 8217 RMG 380 fuel oil." *Id.* at 32 (citing Ex. 1002 ¶¶ 127–128). On the present record, we agree. Weiss '974 includes a working example of its invention in which a non-hydrotreated bunker fuel is produced that "constitute[s] a high quality bunker fuel which could be sold with grade RMG or IFO 380." Ex. 1002 ¶ 128; *see id.* 1002 ¶¶ 113–127 (explaining production of the bunker fuel in question without using Weiss '974's hydrotreating steps). Dr. Sughrue testifies that "grade RMG or IFO 380" in Weiss '974 is "a reference to ISO 8217's RMG 380 residual marine fuel grade." Ex. 1082 ¶ 58. And ISO 8217 defines RMG 380 as a grade of residual marine fuel. Ex. 1003, 16–17. Thus, Petitioner

has shown sufficiently that Weiss '974 teaches or suggests that its pre-hydrotreatment HSFO is a residual petroleum product.

The same cannot be said for Petitioner's allegations with respect to the post-hydrotreatment LSFO of Weiss '974. Petitioner relies on the post-hydrotreatment LSFO of Weiss '974 to teach or suggest the product HMFO of the challenged claims. Pet. 45 (citing Ex. 1002 ¶¶ 1–2, 12, 90–94, 108). Petitioner, however, does not explain why the cited paragraphs disclose that the LSFO is an HMFO. Instead, Weiss '974 describes separating the hydrotreatment effluent “by atmospheric distillation into a gaseous fraction, at least one atmospheric distillate fraction . . . and an atmospheric residue fraction,” with the atmospheric residue being separated “by vacuum distillation into a vacuum distillate fraction containing vacuum diesel and a vacuum residue.” Ex. 1002 ¶ 107. “The vacuum residue fraction and/or the vacuum distillate fraction and/or the atmospheric residue fraction may in part constitute at least fuel oil bases,” which “may be mixed with one or more cutter stocks” to “obtain a fuel oil.” *Id.* ¶¶ 108, 110. Neither Weiss '974 nor Petitioner explains why this mixing step to obtain a fuel oil (rather than merely a fuel oil base) retains the residual nature of the petroleum product without converting it into a distillate or intermediate petroleum product. Moreover, to the extent that Petitioner relies on the fuel oil base of paragraph 108—rather than the fuel oil of paragraph 110—to teach or suggest the product HMFO, Petitioner does not explain why that fuel oil base would have complied with ISO 8217.

Thus, Petitioner has not shown sufficiently that either Weiss '974 alone or the combination of Weiss '974 and Weiss '515 (with the addition of Weiss '444 for claims 6–8) teaches or suggests the HMFOs recited in the

challenged claims. Accordingly, Petitioner has not demonstrated a reasonable likelihood of prevailing on the obviousness of the challenged claims over these combinations of references.

C. Grounds 4–7: Asserted Obviousness Based on ISO 8217:2017, Annex VI, Weiss ’974, Weiss ’515, and Applicant-Admitted Prior Art

For ground 4, Petitioner argues that claims 1, 4, and 5 of the ’287 patent would have been obvious over the combination of ISO 8217:2017, Annex VI, Weiss ’974, and Weiss ’515; for ground five, Petitioner adds Applicant Admitted Prior Art (AAPA) to the combination. Pet. 59–70. For grounds 6 and 7, Petitioner adds Weiss ’444 to address dependent claims 6–8. Pet. 71–72.

1. ISO 8217:2017

ISO 8217 is a standard for “Petroleum products — Fuels (class F) — Specifications of marine fuels” from the International Organization for Standardization (“ISO”). Ex. 1003, Title. This version was published in 2017. *Id.* at ii. The document describes “the requirements for fuels for use in marine diesel engines and boilers, prior to conventional onboard treatment (settling, centrifuging, filtration) before use.” *Id.* at 1. The “document specifies seven categories of distillate fuels” and “six categories of residual fuels.” *Id.*

ISO 8217 provides Table 2, which lists the characteristics of several grades of residual marine fuels. *Id.* at 10–11.

2. Annex VI

Annex VI, or more precisely “Revised MARPOL Annex VI,” is titled “Amendments to the Annex of the Protocol of 1997 to Amend the

International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 Relating Thereto.” Ex. 1004, 1. Annex VI sets forth “Regulations for the Prevention of Air Pollution from Ships.” *Id.* at 3.

3. *AAPA*

The ’287 patent contains three working examples. Ex. 1001, 19:15–25:40. Example 2 describes the use of “a commercially available and merchantable ISO 8217 compliant HMFO, except for a high sulfur content (2.9 wt %)” as a “Feedstock HMFO.” *Id.* at 22:44–46. The ’287 patent describes the “observed bulk properties” of this feedstock HMFO as “consistent with ISO 8217: 2017 for a merchantable residual marine fuel oil.” *Id.* at 23:50–55. Similarly, Example 3 of the ’287 patent describes the use as a feedstock HMFO of “a commercially available and merchantable ISO 8217: 2017 RMK-500 compliant HMFO, except that it ha[d] high environmental contaminates (i.e. sulfur (3.3 wt %)).” *Id.* at 23:65–24:3. Petitioner argues that the descriptions of the commercially available products used in Examples 2 and 3 constitute admissions that those products were prior art to the ’287 patent. Pet. 61–62.

4. *Analysis*

Our analysis with respect to these grounds is similar to the analysis we provide for grounds one through three above. In particular, claim 1 (and, thus, all challenged claims), recites “[a] heavy marine fuel oil product that . . . is made from a heavy marine fuel oil that is ISO 8217:2017 compliant.” Ex. 1001, 25:42–46. Petitioner refers back to its analysis for grounds one and two and relies on Weiss ’974 to reach this recitation. Pet. 59–67.

As explained above, Petitioner does not persuasively explain why Weiss '974 teaches or suggests obtaining a fuel oil that is “residual” while also complying with ISO 8217. Thus, Petitioner has not shown sufficiently that the combination of ISO 8217:2017, Annex VI, Weiss '974, and Weiss '515 (ground four) or the combination of ISO 8217:2017, Annex VI, Weiss '974, Weiss '515, and Applicant-Admitted Prior Art (ground five) (with the addition of Weiss '444 for grounds six and seven) teach or suggest the HMFO recited in the challenged claims. Petitioner, therefore, has not demonstrated a reasonable likelihood of prevailing on the obviousness of the challenged claims over these combinations of references.

D. Discretionary Denial

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 314(a) to deny institution under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 (PTAB May 13, 2020) (precedential). Prelim. Resp. 12–31. Petitioner disagrees. Pet. 6–12. Because we deny institution based on the merits of Petitioner’s unpatentability arguments, we need not decide whether to exercise discretion to deny institution.

CONCLUSION

Upon consideration of the Petition, the Preliminary Response, and the evidence presented, we determine that Petitioner has not shown a reasonable likelihood that it will prevail in showing that at least one of the challenged claims is unpatentable. Accordingly, we do not institute an *inter partes* review of any challenged claim based on any ground asserted in the Petition.

ORDER

It is hereby

ORDERED that, pursuant to 35 U.S.C. § 314, the Petition is denied,
and no *inter partes* review is instituted.

IPR2021-01173
Patent 10,584,287 B2

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