

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMCOL INTERNATIONAL CORP.,
Petitioner,

v.

OIL-DRI CORPORATION OF AMERICA,
Patent Owner.

IPR2022-00206
Patent 9,439,393 B1

Before MICHAEL L. WOODS, RICHARD H. MARSCHALL, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

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

Petitioner, AMCOL International Corp. (“Petitioner”), filed a Petition requesting *inter partes* review of claims 1–5, 8, 10–14, and 16 (the “challenged claims”) of U.S. Patent No. 9,439,393 B1 (Ex. 1001, “the ’393 patent”). Paper 1 (“Pet.”). Oil-Dri Corporation of America (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 7, “Reply”) and Patent Owner filed a Preliminary Sur-reply (Paper 8, “Sur-reply”).

We have authority to determine whether to institute *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2021). *Inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the evidence and arguments in the record, we decline to institute *inter partes* review of the ’393 patent.

BACKGROUND

A. Related Proceedings

The parties identify the following proceeding involving the ’393 patent: *Oil-Dri Corporation of America v. AMCOL International Corp.*, No. 1:21-cv-00991 (N.D. Ill.). Pet. 3; Paper 5, 2.

B. The ’393 Patent

The ’393 patent relates to “cat litter products” and, in particular, litter products using “[s]welling clay made of sodium bentonite” and various fillers. Ex. 1001, code (57), 1:25–29. According to the ’393 patent, clumping cat litter products made of sodium bentonite have “the disadvantage of being relatively expensive” (*id.* at 1:25–29), but litter

products made of sodium bentonite and fillers retain “substantially the same clumpability properties as a composition consisting of only the sodium bentonite” (*id.* at code (57)).

The ’393 patent describes a litter composition’s ability to clump in considerable detail. In the “Definitions” section, the ’393 patent defines “removably clumpable” as wetted litter that “forms one or more clumps having a firmness of sufficient structural integrity and hardness to withstand mechanical separation from unwetted litter.” Ex. 1001, 5:24–28. That same section of the ’393 patent states that a “litter that is removably clumpable, i.e., has a clump strength of ≤ 1.33 using the Standard Drop Method Test, has a clump strength that is substantially the same as a litter comprised of only the sodium bentonite of the litter.” *Id.* at 5:33–36.

The ’393 patent also describes the clump strength test using the Standard Drop Method Test. *See* Ex. 1001, 10:52–11:56, Figs. 4–5 (depicting dropping device used in Standard Drop Method Test). The clump strength test involves removing a clump of wetted litter after a specified time period and placing it on a swinging platform 12 inches above an aluminum pan. *Id.* at 10:55–11:1. After dropping the clump from the platform into the pan, “the clump is visually examined for breakage and assigned a rating on a scale from 1 to 3: 1: clump intact, no breakage; 2: slight breakage (clumps break into 2 pieces); and 3: moderate breakage (clump breaks into more than 2 pieces).” *Id.* at 11:1–5, Fig. 6 (depicting three types of clump breakage used in rating system). After repeating the test using additional clumps, an average clump strength rating is reported. *Id.* at 11:5–7. The ’393 patent provides forty-seven examples of clump strength results by testing various

litter compositions at various time intervals after applying a wetting agent to the litter. *See id.* at 15:33–46:20.

C. Challenged Claims

Petitioner challenges claims 1–5, 8, 10–14, and 16 of the '393 patent, of which claims 1 and 10 are independent. Independent claim 1 is reproduced below:

1. A composition comprising:
a mixture comprising sodium bentonite and one or more granular filler materials,
wherein the one or more granular filler materials comprise one or more cellulose-containing materials,
wherein sodium bentonite comprises at least 47% of the total external surface area of the mixture,
wherein the one or more granular filler materials comprise 5% to 53% of the total external surface area of the mixture, and
wherein the mixture is removably clumpable.

Ex. 1001, 49:42–50:4.

D. Asserted Grounds of Unpatentability

Petitioner challenges claims 1–5, 8, 10–14, and 16 on the following grounds (Pet. 3):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 8, 10–14, 16	102	House ¹
1–5, 8, 10–14, 16	103	House, Goss ²

Petitioner supports its challenges with a declaration from Christina M. Borgese. Ex. 1003.

¹ US 5,188,064, issued Feb. 23, 1993 (“House,” Ex. 1005).

² US 5,975,019, issued Nov. 2, 1999 (“Goss,” Ex. 1016).

ANALYSIS

A. The Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.*

Petitioner contends that a person having ordinary skill in the art “would have a bachelor’s degree in chemistry or chemical engineering or an equivalent degree and sufficient work experience in animal litter process development. A bachelor’s degree is not explicitly necessary.” Pet. 3–4. Petitioner further contends that “[h]ands-on experience in the field of animal litter process development could substitute for possessing a degree if that individual’s experience is in contributing to and/or leading the process development effort rather than following a set of instructions given to them.” *Id.* at 4. Petitioner asserts that such a person “should have familiarity with the process of validating relevant test methods and qualifying analysts as well as familiarity with the composition and chemistry of various clays used in animal litter (including sodium bentonite)” that “would have gained this familiarity through education, training and/or experience.” *Id.*

Patent Owner does not dispute Petitioner's proposed definition of the level of ordinary skill in the art, which appears consistent with the record, including the prior art. *See* Prelim. Resp. 11; *GPAC Inc.*, 57 F.3d at 1579. We adopt the definition of the level of ordinary skill in the art proposed by Petitioner.

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner proposes constructions for the terms “blend,” “cellulose-containing material,” “granular,” “mixture,” and “removably clumpable.” Pet. 17–18. As to “removably clumpable,” which appears in both independent claims 1 and 10, Petitioner quotes a portion of the “Definitions” section from the ’393 patent and asserts that we should construe the limitation to mean “a litter that, when exposed to a wetting agent forms one or more clumps having a firmness of sufficient structural integrity and hardness to withstand mechanical separation from unwetted litter for disposal.” *Id.* at 18 (quoting Ex. 1001, 5:24–28). Patent Owner does not

dispute Petitioner's constructions for the first four terms, but disputes Petitioner's construction of "removably clumpable." Prelim. Resp. 12–15. We need only construe "removably clumpable" to determine whether to institute an *inter partes* review, and we do not reach the other claim constructions proposed by Petitioner. See *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that "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))).

Patent Owner argues that the "Definitions" section of the specification expressly defines "removably clumpable" in the following paragraph:

For purposes of the present invention, the term "removably clumpable" refers to a litter that, when exposed to a wetting agent forms one or more clumps having a firmness of sufficient structural integrity and hardness to withstand mechanical separation from unwetted litter for disposal. ***A litter material having a clump strength of ≤ 1.33 using the Standard Drop Method Test*** (described below) 30 seconds, 1 hour, 12 hours, 24 hours, 36 hours or 72 hours after the clump is formed by exposure to a liquid ***is removably clumpable. A litter that is removably clumpable, i.e., has a clump strength of ≤ 1.33 using the Standard Drop Method Test,*** has a clump strength that is substantially the same as a litter comprised of only the sodium bentonite of the litter.

Prelim. Resp. 12–13 (quoting Ex. 1001, 5:24–36) (emphasis in original). Patent Owner contends that this passage makes clear that it "defined the term 'removably clumpable' to mean a litter having a clump strength of ≤ 1.33 using the Standard Drop Method Test," where "the clump strength value is the average value from three tests." *Id.* at 13 (citing Ex. 1001, 5:24–36, 11:5–7). Patent Owner further contends that the use of "i.e." in the

passage signals an “intent to define” the limitation “as a litter having an average clump strength of ≤ 1.33 using the Standard Drop Method.” *Id.* (citing Ex. 1001, 5:24–36 and case law for support).

In its Preliminary Reply, Petitioner argues that litters having a clump strength of ≤ 1.33 using the Standard Drop Method are just examples of “removably clumpable” litters provided by the specification. Reply 2–3. According to Petitioner, the use of “i.e.” in the specification merely identifies an embodiment that meets the limitation. *Id.* at 3 (citing *Pfizer, Inc. v. Teva Pharms., USA, Inc.*, 429 F.3d 1364, 1373–74 (Fed. Cir. 2005); *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1324–26 (Fed. Cir. 2012)). Petitioner also argues that Patent Owner’s proposed construction improperly excludes an embodiment found in Example 26 because it shows a litter having a clump strength of 1.7 after 30 seconds, rather than a value ≤ 1.33 . *Id.* at 3–4 (citing Ex. 1001, 30:55–31:27). Finally, Petitioner argues that related patents in the same family as the ’393 patent claim include claim language that would create inconsistencies with Patent Owner’s proposed construction. *Id.* at 4.

In its Preliminary Sur-reply, Patent Owner argues that the use of “i.e.” underscores the definitional nature of the phrase “a clump strength of ≤ 1.33 using the Standard Drop Method Test.” Sur-reply 2 (citing Ex. 1001, 5:24–36; *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1334 (Fed. Cir. 2009); Merriam-Webster dictionary definition (stating that “‘i.e.’ is ‘useful for defining or explaining a term or concept’”)). Patent Owner contends that the specification describes litters having a clump strength of ≤ 1.33 as the only type of removably clumpable litter, not a mere example of such a litter. *Id.* at 3. As to Example 26 in the specification, Patent Owner argues that the

Example does not fall within the scope of the claims because it discloses a clump strength of 1.7 and that its construction does not exclude a preferred embodiment. *Id.* at 4. As to claim language in related patents, Patent Owner contends that obtaining claims in other patents that lack a “removably clumpable” limitation “is of no moment and sheds no light on the meaning of ‘removably clumpable’ in the ’393 Patent.” *Id.* at 5.

Based on our review of the record and the parties’ arguments, we determine that “removably clumpable” in independent claims 1 and 10 refers to a mixture having “a clump strength of ≤ 1.33 using the Standard Drop Method Test” in addition to the other aspects of the “removably clumpable” definition provided in the specification. *See* Ex. 1001, 5:24–36. The claim language, standing alone, sheds little light on this issue because it merely refers to a “removably clumpable” mixture. *See id.* at 50:4, 50:33. The specification provides further guidance as to the scope of the limitation because the applicant operated as its own lexicographer in defining the limitation in the specification. *See id.* at 5:24–36. Petitioner relies on the first sentence of the paragraph addressing “removably clumpable” in the specification, while Patent Owner relies on the entire paragraph in its proposed construction. *See* Pet. 18; Prelim. Resp. 12–13. We conclude that the definition of “removably clumpable” includes the phrase “a clump strength of ≤ 1.33 using the Standard Drop Method Test” for two reasons. First, the phrase appears within a paragraph devoted to addressing “removably clumpable” within a section of the specification titled “Definitions,” which at least suggests that the entire paragraph should be treated as definitional. *See* Ex. 1001, 3:63, 5:24–36. Second, as Patent Owner correctly points out, the use of the term “i.e.” just prior to the phrase

signals an intent to define the limitation. *See id.* at 5:33–35 (“A litter that is removably clumpable, i.e., has a clump strength of ≤ 1.33 using the Standard Drop Method Test.”). This approach comports with cases finding that the use of “i.e.” in a specification indicates an intent to define the limitation in question.³

Petitioner’s arguments do not mandate a different construction here. Petitioner relies on two cases that found the use of “i.e.” in a specification in a non-definitional manner, but those cases are distinguishable on their facts. In *Pfizer, Inc. v. Teva Pharms. USA, Inc.*, 429 F.3d at 1373–74, the Federal Circuit held that the phrase “saccharides (i.e. sugars)” did not define saccharides because the patent specification referred to “sugars” as just one example of a saccharide and referred to other examples of saccharides that included mannitol, lactose, and other sugars. The court concluded that the specification’s reference to multiple types of saccharides “indicates that the term ‘saccharides’ should not be limited to sugars.” *Id.* In *Dealertrack*, 674 F.3d at 1324–26, the Federal Circuit considered the entire patent

³ *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d at 1334 (“As the court correctly reasoned, the specification’s use of ‘i.e.’ signals an intent to define the word to which it refers, . . . and that definition was not limited to the embodiment being discussed.”); *Abbott Labs. v. Novopharm Ltd.*, 323 F.3d 1324, 1327, 1330 (Fed. Cir. 2003) (holding that the specification’s use of “i.e.” defined the limitation); *SkinMedica, Inc. v. Histogen Inc.*, 727 F.3d 1187, 1201 (Fed. Cir. 2013) (finding that reading “‘beads (i.e., two-dimensions)’ as definitional comports with the plain language of the specification as a whole and the inventors clearly expressed intent to differentiate the use of beads from three dimensional culturing”); *see also Rembrandt Wireless Techs., LP v. Samsung Elecs. Co., Ltd.*, 853 F.3d 1370, 1376–77 (Fed. Cir. 2017) (finding the use of “i.e.” definitional in the context of prosecution history statements).

specification and found the phrase “routing, i.e. sequencing and timing” did not define “routing” because the specification used “routing” to refer generically to many different ways of sending application data. These cases do not aid Petitioner here because the ’393 patent does not use the term “removably clumpable” to refer to litters having a clump strength falling outside the scope of “a clump strength of ≤ 1.33 using the Standard Drop Method Test.”

As to Petitioner’s reliance on Example 26 in the specification as alleged evidence that Patent Owner’s proposed construction lacks support in the specification, we disagree. As an initial matter, even if one of the forty-seven examples includes one test result falling outside the scope of the claims, that fact alone may not override an otherwise clear definition provided in the specification. More importantly, however, we do not view Example 26 as a whole as describing a mixture falling outside the scope of the independent claims. Example 26 provides four clump strength test results at four different time periods (30 seconds, 1 hour, 24 hours, and 72 hours), with three of the four results having a clump strength of 1.7. Ex. 1001, 31:20–26. The parties acknowledge that the sample taken at 30 seconds, having a clump strength of 1.7, falls outside the scope of the claims. *See* Reply 3–4; Sur-reply 4. The Example 26 sample taken at 24 hours, however, has a clump strength of 1.3, which does fall within the scope of Patent Owner’s proposed construction. *See* Ex. 1001, 31:20–26. The paragraph defining “removably clumpable” notes that “[a] litter material having a clump strength of ≤ 1.33 using the Standard Drop Method Test (described below) [at] 30 seconds, 1 hour, 12 hours, 24 hours, 36 hours *or* 72 hours after the clump is formed by exposure to a liquid *is removably*

clumpable.” *Id.* at 5:28–33 (emphasis added). Use of the disjunctive “or” in that sentence indicates that a litter having the required clump strength at any of the listed time intervals falls within the scope of “removably clumpable.” *See id.* Accordingly, the fact that the litter of Example 26 achieves the required clump strength at the 24-hour interval means that the litter of Example 26 falls within the scope of “removably clumpable” even if the clump strength of samples taken at different intervals fail to achieve the required clump strength.

As to alleged inconsistencies between Patent Owner’s proposed construction and claim language in related patents, we do not see any inconsistency that would mandate a different result here. Those patents share the same specification as the ’393 patent, and presumably the same construction for “removably clumpable” applies to those patents. *See* Sur-reply 5. Petitioner’s first example refers to “removably clumpable” in one dependent claim (claim 6) and a specific clump strength in another dependent claim (claim 11), with both claims depending from the same independent claim 1. *See* Reply 4; Ex. 2003, 60. Petitioner fails to explain how importing Patent Owner’s construction for “removably clumpable” into claim 6 creates inconsistencies with claim 11. *See* Reply 4. Petitioner’s second example refers to claims that do not even refer to “removably clumpable,” and we fail to see how Patent Owner’s construction creates any problems with the interpretation of that claim. *See id.* (citing Ex. 2005). To the extent any tension exists between the construction we adopt here and related claims in related patents, that tension does not override the clear definitional nature of the portion of the specification we rely on to construe “removably clumpable.”

Based on the foregoing, we conclude that “removably clumpable” in independent claims 1 and 10 requires, at a minimum, a mixture having “a clump strength of ≤ 1.33 using the Standard Drop Method Test . . . 30 seconds, 1 hour, 12 hours, 24 hours, 36 hours *or* 72 hours after the clump is formed.” Ex. 1001, 5:28–32 (emphasis added).

C. Anticipation and Obviousness Challenges

Petitioner argues that House anticipates claims 1–5, 8, 10–14, and 16, and that the combination of House and Goss renders those same claims obvious. Pet. 3, 22–69. For both challenges, Petitioner relies solely on House as disclosing the “removably clumpable” limitation. *See id.* at 53–55, 63. Petitioner’s obviousness challenge assumes that House does not anticipate because House does not disclose “sodium bentonite” and “wherein sodium bentonite comprises at least 47% of the total external surface area of the mixture” based on the particle size distributions provided in House. *Id.* at 63. Petitioner does not argue that the claims would have been obvious even if House fails to disclose the “removably clumpable” limitation, or otherwise argue that the combination of House and Goss discloses the limitation even if House alone fails to do so. *Id.* Accordingly, Petitioner’s challenges turn on whether House alone expressly discloses the “removably clumpable” limitation.

House relates to a clumping cat litter comprising certain mixtures of clay and cellulose material. Ex. 1005, code (57). House states that it seeks “to provide a clumping sorbent having superior sorption capacity and sufficient cohesiveness when wetted with an aqueous liquid, such as urine, to be easily separated from the nonwetted sorbent particles.” *Id.* at 2:66–3:2. According to House, its invention provides sorbents that, “when wetted with

urine forms a mass of sorbed, wetted sorbent that can be scooped out or otherwise removed from the litter box.” *Id.* at 6:43–46.

Petitioner argues that House discloses a “removably clumpable” mixture as required by claims 1 and 10 because House discloses a “clumping” cat litter and emphasizes the removability of the clumps in its specification. Pet. 53–54. Petitioner also argues that the reference to “sorbent” in House refers to a specific mixture in House that Petitioner contends meets the limitations of the claims. *Id.* at 54–55.

Patent Owner argues that the Petition fails to cite any portion of House that discloses clump strength data using the Standard Drop Method Test and fails to establish that House discloses the “removably clumpable” limitation using the proper claim construction. Prelim. Resp. 15–19. According to Patent Owner, a “litter that clumps does not necessarily mean it is ‘removably clumpable.’” *Id.* at 18–19

We agree with Patent Owner that Petitioner fails to establish, for purposes of institution, that House discloses the “removably clumpable” limitation when using the claim construction that Patent Owner proposes and that we adopt above. That construction requires “a clump strength of ≤ 1.33 using the Standard Drop Method Test . . . 30 seconds, 1 hour, 12 hours, 24 hours, 36 hours or 72 hours after the clump is formed,” but Petitioner provides no argument or evidence to support any conclusion that House discloses a mixture having such a clump strength. *See* Pet. 53–55. Instead, Petitioner assumes that its broader claim construction of “removably clumpable” applies, and does not attempt to show that House discloses the limitation using a narrower construction such as the construction we adopt here. *See id.* Patent Owner correctly points out that such a showing fails to

establish that House discloses a “removably clumpable” mixture as the claims require because a “litter that clumps does not necessarily mean it is ‘removably clumpable’” under the proper construction. Prelim. Resp. 18–19. Because all of Petitioner’s challenges depend on the assertion that House alone discloses the “removably clumpable” limitation in independent claims 1 and 10, Petitioner’s failure to establish, for purposes of institution, that House discloses the limitations fatally undermines its challenges.

Based on the foregoing, we determine that Petitioner has not established sufficiently that House anticipates any of the independent claims or that the combination of House and Goss renders any of the challenged claims unpatentable. Accordingly, Petitioner has not demonstrated a reasonable likelihood of establishing the unpatentability of any challenged claim.

CONCLUSION

For the reasons above, we deny institution of *inter partes* review.

ORDER

Accordingly, it is hereby:

ORDERED that the Petition is denied as to all challenged claims, and no *inter partes* review is instituted.

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