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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MARTIN BRUEGGEMANN, PAUL RICHARD COOK,  
TAMARA BUTLER JOHNDROW, YI ZHU, and  
LARRY ROBERT TODD

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Appeal 2019-003316  
Application 14/106,165  
Technology Center 1700

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Before DONNA M. PRAISS, BRIAN D. RANGE, and JANE E. INGLESE,  
*Administrative Patent Judges.*

RANGE, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant appeals from the Examiner's decision to reject claims 1, 3, 4, and 6.<sup>1</sup> We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

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<sup>1</sup> We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies Freeport Minerals Corporation as the real party in interest. Appeal Br. 2.

CLAIMED SUBJECT MATTER<sup>2</sup>

Appellant describes the invention as relating to systems and methods for improving the drainage of leach through a leach stockpile in a heap leach operation. Spec. ¶ 10. In particular, metal may be extracted from metal-bearing substances by crushing the substance and then leaching the substance with an aqueous leach solution. *Id.* ¶ 2. It is desirable to have good flow of the leach solution through the substance so that localized areas of low permeability are avoided and so that air is available to allow an appropriate reaction. *Id.* ¶¶ 6–9. Claim 1 is the only independent claim on appeal and is illustrative:

1. A process comprising:

identifying a zone of low solution permeability within a leach stockpile after applying a leaching solution to the leach stockpile; and

placing a wick drain across the zone of low solution permeability, wherein the wick drain comprises a proximal terminus and a distal terminus, and wherein the wick drain is disposed to place the proximal terminus of the wick drain on a first side of the zone of low solution permeability and the distal terminus of the wick drain on an opposite side of the zone of low solution permeability.

Appeal Br. 14 (Claims App.).

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<sup>2</sup> In this Decision, we refer to the Final Office Action mailed April 23, 2018 (“Final Act.”); the Appeal Brief filed October 11, 2018 (“Appeal Br.”); and the Examiner’s Answer mailed January 25, 2019 (“Ans.”).

## REJECTION AND REFERENCES

On appeal, the Examiner maintains the rejection of claims 1, 3, 4, and 6 under 35 U.S.C. § 103 as obvious over Cramer, (US 2014/0367899 A1; pub. Dec. 18, 2014) (“Cramer”), in view of Seal, (US 8,021,461 B2; iss. Sept. 20, 2011) (“Seal”). Ans. 3. As a second ground of rejection, the Examiner also maintains the rejection of claims 1, 3, 4, and 6 under 35 U.S.C. § 103 as obvious over Seal in view of Cramer. *Id.* at 5.

## OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011)) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the [E]xaminer’s rejections.”). After considering the evidence presented in this Appeal and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error. Thus, we affirm the Examiner’s rejections for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

The Appellant does not separately argue any dependent claims. We therefore limit our discussion to claim 1. All other claims stand or fall with that claim. 37 C.F.R. § 41.37(c)(1)(iv) (2013).

For the first rejection, the Examiner rejects claim 1 as obvious over Cramer in view of Seal. Ans. 3. The Examiner finds that Cramer teaches a vertical drainage system for heap leaching operations where conduits drain accumulated solution. *Id.* (citing Cramer). The Examiner finds that Cramer’s teaching of solution build up would naturally be due to low solution

permeability areas. *Id.* The Examiner finds that a drain length along the entire tailings pile “will naturally be oriented across at least a zone of low permeability having its respective ends on either side of a low permeability zone within said tailings pile.” *Id.* at 4.

The Examiner further finds that Seal teaches surveying a leach stockpile to determine areas that are deficient in metal extraction due to reduced permeability. *Id.* (citing Seal). The Examiner also finds that Seal teaches drilling into such areas for remedial treatment by hydraulic fracturing. *Id.* at 4–5. The Examiner determines that it would have been obvious to modify Cramer to include identification of low permeability zones in order to improve heap extraction. *Id.* at 4.

For the second rejection, the Examiner rejects claim 1 as obvious over Seal in view of Cramer. Ans. 5–7. The Examiner’s findings are similar. The Examiner determines that it would have been obvious to modify the method of Seal by utilizing the wicking conduits disclosed by Cramer rather than the hydraulic fracturing of Seal to improve metal extraction “such that slope failure of the heap pile can be avoided, as taught by Cramer.” *Id.* at 6. The Examiner, in the alternative, determines that it would have been obvious to replace the hydraulic fracturing of Seal with the wicking conduit of Cramer as a mere substitution. *Id.*

Appellant presents the same arguments for both rejections. Appeal Br. 12. Appellant argues that neither reference teaches identifying low permeability zones and then placing a wick drain across a low permeability zone such that, as recited by claim 1, the proximal terminus of the wick drain is placed on one side of the zone of low solution of permeability and the distal terminus is placed on an opposite side of the zone of low

permeability. *Id.* at 8. We begin our assessment of Appellant’s arguments with claim construction.

Claim 1 recites “identifying a zone of low solution permeability within a leach stockpile.” Appeal Br. 14 (Claims App.). We adopt the explicit definition of “zone of low solution permeability” provided by the Specification:

the term ‘zone of low solution permeability’ means a stratum, lens, or other region having any possible configuration in a heap that exhibits increased resistance or percolation or flow of leach solution relative to the surrounding or adjacent material in the heap, or relative to the average or typical material in the heap.

Spec. ¶ 45. In other words, “low solution permeability” does not require any particular permeability level except that the zone must be less permeability than certain other zones.

Claim 1 also recites “wherein the wick drain is disposed to place the proximal terminus of the wick drain **on a first side of the zone of low solution permeability** and the distal terminus of the wick drain **on an opposite side of the zone of low solution permeability.**” Appeal Br. 14 (Claims App.) (emphasis added). Resolution of Appellant’s arguments depends, in part, on what it means for each of the recited termini to be “on a first side” and “on an opposite side” of the recited zone. The Specification explains that a wick drain is an example of a “drainage measure.” Spec. ¶ 12. The Specification then describes the two ends “of the drainage measure located in the leach stockpile on opposite sides of the zone in solution permeable areas.” *Id.* ¶ 51. The Specification illustrates what this means with Figure 3. *Id.* ¶ 52. We reproduce Figure 3 below.

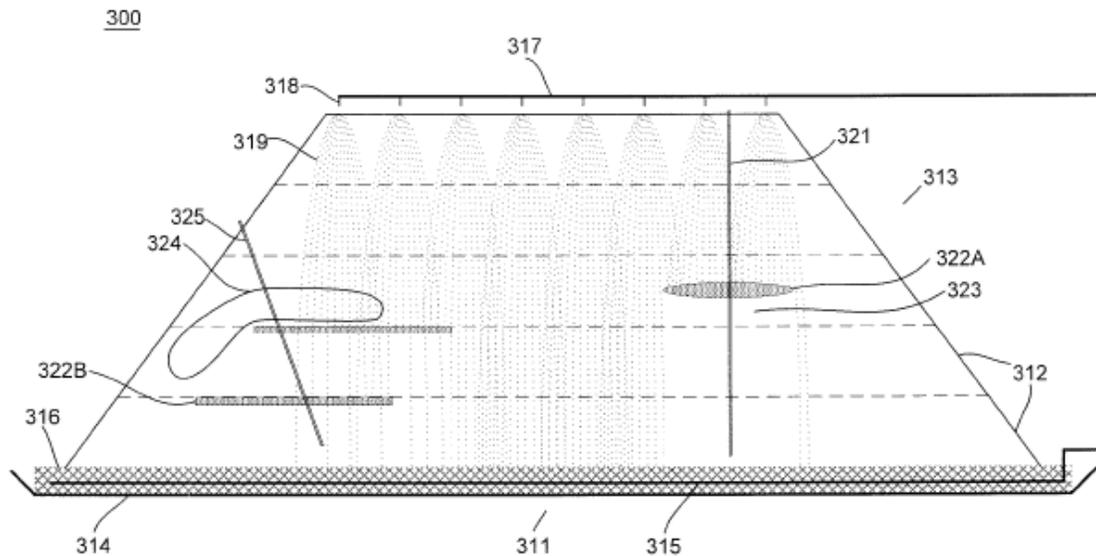


FIG. 3

Figure 3 illustrates a leach stockpile with leach solution drainage measures in accordance with embodiments of the Specification. *Id.* ¶ 19. Drainage measure 321 is placed “through a zone of low solution permeability 322A.” *Id.* In Figure 3, the ends of drainage measure 321 (which could be a wick) are placed on opposite sides of zone of low solution permeability 322A. Based on Figure 3, placement of the ends on opposite sides of the zone (as claim 1 recites) does not require that ends be precisely at the edge of the zone.

Based on the claim constructions discussed above, Appellant’s arguments do not persuade us of reversible error. We first address obviousness over Cramer in view of Seal. Appellant argues that “Cramer does not contemplate zones of low permeability.” Appeal Br. 9. As the Examiner explains, however, such zones would be expected in Cramer. Ans. 9. Cramer teaches use of wicking conduits to address drain buildup of fluid within the heap pile. *See, e.g.*, Cramer ¶¶ 10, 19. The existence of buildup

necessarily indicates an area of “increased resistance or percolation or flow of leach solution relative to the surrounding or adjacent material” (Spec. ¶ 45) and therefore requires, according to Appellant’s definition, zones of low permeability. *See* Ans. 8–9. Moreover, Seal teaches that heap piles do indeed have zones of low permeability. Seal 1:30–39 (“A common problem with heap leaching is nonuniform leaching of metals from the heap. [L]each solution often does not uniformly contact all portions of the heap because of permeability variations that exist within the heap. Such permeability variations may result in preferential flow of leach solution.”).

Appellant also argues that Cramer pre-installs a multitude of wick drains rather than identifying zones of low permeability and places the drains only across those zones. Appeal Br. 8–9. This argument is unpersuasive because the Examiner relies on Seal, not Cramer, to reach the identification of zones of low permeability. Ans. 12. “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant argues that modifying Cramer by identifying wick drains (as taught by Seal) and then placing the drains across zones of low permeability would change the fundamental principle of operation of Cramer. Appeal Br. 9–10. We disagree. Cramer is already concerned with improving heap drainage. Ans. 9–10. Both Cramer and Seal address improving percolation of leaching fluid across low permeation zones. *Id.* Appellant does not persuasively refute the Examiner’s stated rationale for combining Seal’s teachings with Cramer: “in order to improve heap extraction, as taught by Seal.” *Id.* at 4.

Appellant further argues that Cramer does not teach placing wick drains across zones of low permeability. Appeal Br. 11–12. This argument is unpersuasive because it addresses Cramer individually rather than addressing the combined teachings of Cramer and Seal. Moreover, Cramer’s drains necessarily have ends on opposite sides of zones of impermeability; such an arrangement would be necessary for Cramer to, as Cramer teaches, drain buildup of fluid within the heap pile. Ans. 11; *see also* Cramer Fig. 1 (illustrating wick drains passing through entire heap pile with ends on each edge of the pile and, thereby, necessarily passing through zones of impermeability within the pile with ends on opposite sides of such zones). Appellant does not persuasively refute the Examiner’s reasoning in this regard.

With respect to the Examiner’s second rejection, Appellant presents no argument rebutting the Examiner’s stated rationale for why a person of skill in the art would not have substituted Seal’s drilling and hydraulic fracturing with Cramer’s wick drains. *See* Ans. 5–7, 12. Appellant’s arguments, addressed above, do not persuasively rebut the Examiner’s findings regarding Seal and Cramer or the Examiner’s stated rationale for combining Cramer’s wick drains with Seal’s method.

Because Appellant’s arguments do not identify reversible error, we sustain the Examiner’s rejections.

CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 3, 4, 6	103	Cramer, Seal	1, 3, 4, 6	
1, 3, 4, 6	103	Seal, Cramer	1, 3, 4, 6	
<b>Overall Outcome</b>			1, 3, 4, 6	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED