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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* MIKEL JOHN STANICH, KARTHEEK CHANDU,  
and LARRY M. ERNST

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Appeal 2018-008017  
Application 14/498,681  
Technology Center 2600

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Before CAROLYN D. THOMAS, JOSEPH P. LENTIVECH, and  
SCOTT RAEVSKY, *Administrative Patent Judges*.

RAEVSKY, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–18, all the pending claims in this case. *See* Appeal Br. i–iv. 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 the real party in interest as Ricoh Company, Ltd. Appeal Br. 3.

### STATEMENT OF THE CASE

Appellant's invention generally relates to printer technology, namely a low overhead near unity scaling technique for printing. *See* Spec. ¶ 2. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A printer, comprising:
  - an image processor to:
    - determine a number of pixels by which to scale an image along an axis of said image, wherein, said scaling of said image is less than 10% of said image along said axis;
    - identify locations in the image along said axis equal to said number of pixels by which to scale said image along said axis of said image, said identifying including determining regions of lesser activity;
    - remove a first region having a first width of more than one pixel from the image along said axis at each of said locations;
    - insert a second region having a second width of more than one pixel into the image along said axis at each of said locations, wherein, an accumulated difference between pixels in the first pixel width and the second pixel width for said locations accounts for said number of pixels by which to scale said image; and
    - transmit the image to be printed.

### REJECTIONS

The Examiner made the following rejections:

Claims 1–18 stand rejected under 35 U.S.C. § 101 as being directed to a judicial exception. Final Act. 4.

Claims 1–18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bernal (US 2010/0086207 A1, Apr. 8, 2010), Applicant's

Admitted Prior Art (“AAPA”)<sup>2</sup>, and Baeumler (US 2011/0102851 A1, May 5, 2011). *Id.* at 8.

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).

## ANALYSIS

### *Rejections under 35 U.S.C. § 101*

#### *I. Principles of Law*

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[I]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See id.* at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010)

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<sup>2</sup> The Examiner cites paragraphs 8–11 of the Specification as the AAPA. Final Act. 3, 9; Ans. 15.

(“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67–68 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 183 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221. “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

The U.S. Patent and Trademark Office (“PTO”) recently published revised guidance on the application of § 101. *See* USPTO, 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7,

2019) (“Guidance”). Under the Guidance, we first look to whether the claim recites:

(1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes); and

(2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional activity” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* Guidance, 84 Fed. Reg. at 56.

## *II. Step 2A, Prong One (Judicial Exception)*

The Examiner determines that claim 1<sup>3</sup> is directed to the abstract idea of “scaling a picture,” which the Examiner concludes is directed to a mathematical algorithm. Final Act. 5.

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<sup>3</sup> Appellant argues claims 1–18 as a group. *See* Appeal Br. 9. We select independent claim 1 as representative of claims 1–18. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Specification describes an improvement to “printer technology,” related to “an ink-jet printer . . . account[ing] for changes in paper size in response to the wetting of the paper by the ink.” Spec. ¶¶ 2–3. Prior art efforts to scale an image to account for paper size changes “attempt[ed] to account for every pixel,” which “is generally too numerically intensive.” *Id.* ¶ 7. The Specification’s improved approach chooses “multi-pixel width columns” for modification instead of “one dimensional ‘slices’ of pixel width columns.” *Id.* ¶ 23.

The Examiner finds that the claimed “identifying” step “relates to a purely mathematical algorithm in order to identify ‘regions of lesser activity’—a concept the instant specification *admits* as mathematical at paragraph [0064].” Ans. 11–12. The portion of paragraph 64 quoted by the Examiner states, “[t]he above described gradient algorithm is just one of many possible mathematical approaches for indicating to what degree there is change occurring at a specific pixel location within an image.” *Id.* at 12 (quoting Spec. ¶ 64). The Examiner similarly finds the “removing” and “inserting” steps involve mathematical algorithms. *Id.*

However, because claim 1 may *use* mathematical relationships is insufficient to determine the claim “falls within the subject matter groupings of abstract ideas enumerated” in the Guidance. Guidance, 84 Fed. Reg. at 54. Although some of the limitations may be based on mathematical concepts, we note that the specific mathematical concepts *are not recited in the claim*. For example, the “gradient algorithm” identified by the Examiner in paragraph [64] of the Specification is not explicitly illustrated in claim 1. *See* Ans. 11–12. Therefore, under the Guidance, the claims do not recite a mathematical concept. *See, e.g., Subject Matter Eligibility Examples:*

*Abstract Ideas*, at 7 (Jan. 7, 2019) (discussing Example 38 and noting that “[t]he claim does not recite a mathematical relationship, formula, or calculation. While some of the limitations may be based on mathematical concepts, the mathematical concepts are not recited in the claims.”).

Nor has the Examiner demonstrated that the claim recites organizing human activities or mental processes. Based on the record before us, we are persuaded the Examiner erred at Step 2A, Prong 1 in determining that the claims recite an abstract idea.

Accordingly, we reverse the Examiner’s rejection of claims 1–18 under 35 U.S.C. § 101.

*Rejections under 35 U.S.C. § 103*

Appellant contends Bernal, AAPA, and Baumler each fail to teach or suggest claim 1’s “remove a first region having a first width of more than one pixel from the image along said axis at each of said locations” and “insert a second region having a second width of more than one pixel into the image along said axis at each of said locations.” Appeal Br. 13–15; Reply Br. 4–5. Appellant argues, “none of the references disclose or suggest **both** removing a first region in an image **and** inserting a second region in the image along the same axis to achieve a scaling.” Appeal Br. 14 (emphasis omitted). Specifically, Appellant contends that in Bernal, a “seam is replicated if the digital image is being enlarged in size or deleted if the digital image is being reduced in size.” *Id.*

The Examiner finds, “Bernal discloses . . . adding and removal of pixel seams through an **iterative** process.” Final Act. 9 (citing Bernal, Fig. 4 ¶¶ 27, 36, 37); Ans. 14 (citing same). The Examiner further finds, “[s]uch

an iterative process illustrated in Figure 4 constitutes the claimed process involving both the addition and removal of pixels.” *Id.* (emphasis omitted). On Reply, Appellant contends that Bernal “explicitly discloses that a selected seam is **replicated** if a digital image is being **enlarged** in size **or deleted** if the digital image is being **reduced** in size.” Reply Br. 4 (citing Bernal ¶ 5 (“[t]he selected seam is then replicated *if* the digital image is being enlarged in size or deleted *if* the digital image is being reduced in size.” (emphasis added))). In other words, although the Examiner is correct that Figure 4 shows adding and deleting (i.e., “add/delete seam”), Bernal only adds seams within one image or deletes seams from another image, and does not both remove and insert on the same image, as required by the claim.

However, the Examiner also relies on AAPA as teaching or suggesting the same claim limitations. Final Act. 9. Appellant acknowledges this (“the Examiner maintains that *Bernal* and *AAPA* both disclose such a feature” (Appeal Br. 14)) but fails to make any argument that AAPA does not disclose these limitations. Instead, Appellant’s arguments for this limitation only refer to Bernal. *E.g.*, Appeal Br. 12–15. As arguments not made are waived, we are constrained on this record to uphold the Examiner’s cumulative findings with respect to Bernal and AAPA. *See Frye*, 94 USPQ2d at 1075 (The Board “reviews . . . rejection[s] for error based upon the issues identified by appellant, and in light of the arguments and evidence produced thereon,” and treats arguments not made as waived.).

Appellant also contends that “even if *Bernal* could somehow be construed as disclosing replications and deletions in the same iterative process, there is no disclosure or suggestion that the subsequent

replications/deletions occur along the same axis.” Appeal Br. 15. We agree because, as Appellant persuades us that Bernal does not teach or suggest both “remove” and “insert” within the same image, Appellant persuades us that Bernal necessarily does not teach both removing and inserting “along the same axis.”

Regardless, the Examiner again finds that not only Bernal but also AAPA cumulatively discloses “along the same axis.” Final Act. 9 (citing AAPA ¶¶ 8–11); Ans. 15 (citing same). Appellant fails to rebut this finding in the Appeal Brief. *See* Appeal Br. 15 (arguing over Bernal but not AAPA). On Reply, Appellant argues that AAPA does not disclose “along the same axis,” characterizing the Answer as providing a “new construction of the AAPA.” Reply Br. 6. But the Answer does not make new findings with respect to AAPA; it cites the same paragraphs of AAPA as the Final Action. *See* Final Act. 9 (citing AAPA ¶¶ 8–11); Ans. 15 (citing same). Accordingly, Appellant’s Reply argument is untimely. *See Ex parte Nakashima*, No. 2009-001280, 2010 WL 191183, at \*3–\*6 (BPAI 2010) (explaining that arguments and evidence not timely presented in the principal Brief will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Principal Brief).

We, therefore, sustain the Examiner’s obviousness rejection of claim 1. Appellant’s arguments regarding the rejection of independent claims 7 and 13 rely on the same arguments as for claim 1, and Appellant does not argue separate patentability for the dependent claims. *See* Appeal Br. 15. We, therefore, also sustain the Examiner’s obviousness rejection of claims 2–18. *See* 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-18	101			1-18
1-18	103	Bernal, AAPA, Baeumler	1-18	
<b>Overall Outcome</b>			1-18	

Since at least one rejection encompassing all claims on appeal is affirmed, the decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2013).

AFFIRMED