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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 GERALD DONALD BOLDT, MICHAEL GLEN LOTZ,
JEFFREY ALAN SIKKINK, JOSEPH WAYNE STRADLING, and
MARQUIS G. WALLER

_____

Appeal 2018-002278
Application 15/001,665
Technology Center 2600

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Before JAMES R. HUGHES, LINZY T. MCCARTNEY, and
SCOTT E. BAIN, *Administrative Patent Judges.*

BAIN, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 1–20, which constitute all claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Ricoh Company, Ltd. Appeal Br. 3.

BACKGROUND

The Claimed Invention

Appellant's claimed invention relates to portable document format (PDF) print jobs, and specifically, to "dynamically splitting" PDF print jobs into independent segments in order to facilitate printing of large PDF files. Spec. ¶¶ 1–5. Claims 1, 8, and 15 are independent. Claim 1 is illustrative of the invention and the subject matter of the appeal, and reads as follows (with disputed limitation emphasized):

> 1. A system comprising:
>
> a print server comprising:
>
> an interface configured to receive a Portable Document Format (PDF) print job comprising logical pages; and
>
> a job controller configured to divide the PDF print job into segments by:
>
> *determining a memory footprint indicative of an expected size of each of the logical pages, based on a determined size of at least two of the logical pages;*
>
> *determining a segment size* comprising a number of the logical pages to include in each segment based on the memory footprint for the logical pages, generating multiple segments, populating each of the segments with logical pages from the PDF print job based on the segment size, and populating each of the segments with a PDF page tree;
>
> wherein the job controller is configured to transmit the segments to an assigned printer for processing.

Appeal Br. 20 (Claims Appendix) (emphasis added).

References

The references relied upon by the Examiner are:

Name	Reference	Date
Yokokura	US 2012/0050796 A1	Pub. Mar. 1, 2012
Tojo	US 2004/0234169 A1	Pub. Nov. 25, 2004
Johnson et al.	US 2004/0236924 A1	Pub. Nov. 25, 2004
Yamazaki	US 2003/0208607 A1	Pub. Nov. 6, 2003
Masuo et al. ("Masuo")	JP 2008/305267 A	Pub. Dec. 18, 2008

The Rejections on Appeal

Claims 1–20 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 4–6.

Claims 1, 7, 8, 14, and 15 stand rejected under 35 U.S.C. § 112(b) as being indefinite. Final Act. 6–7.

Claims 1, 7, 8, and 14 stand rejected under 35 U.S.C. § 103 as unpatentable over Yokokura and Yamazaki. Final Act. 7–9.

Claims 2, 9, and 16 stand rejected under 35 U.S.C. § 103 as unpatentable over Yokokura, Yamazaki, and Masuoka. Final Act. 10.

Claims 3, 10, and 17 stand rejected under 35 U.S.C. § 103 as unpatentable over Yokokura, Yamazaki, and Tojo. Final Act. 10–11.

Claims 4–6, 11–13, and 18–20 stand rejected under 35 U.S.C. § 103 as unpatentable over Yokokura, Yamazaki, Tojo, and Johnson. Final Act. 12–13.

DISCUSSION

We have reviewed the Examiner's rejections in light of Appellant's arguments presented in this appeal. Arguments which Appellant could have made but did not make in the Briefs are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv). On the record before us, Appellant has persuaded us of error regarding the Examiner's ineligible subject matter rejection and indefiniteness rejection. Appellant further has persuaded us the Examiner

erred in the obviousness rejections of dependent claims 3 and 7, but not as to any of the remaining claims. Except as set forth below, we adopt as our own the findings and reasons set forth in the rejection from which the appeal is taken and in the Examiner's Answer. We provide the following discussion for highlighting and emphasis.

Rejection under 35 U.S.C. § 101

The Examiner determined that claim 1 is directed to a "computer algorithm/mathematical formula for dividing data into various segments by applying predetermined rules to the division process," which constitutes a mental process or method of organization human activity, and, therefore, is an abstract idea. Ans. 2–3; *Alice Corp. v. CLS Bank lnt'l,* 573 U.S. 208, 217 (2014) (describing two-step framework "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts"). Further, the Examiner found that the additional elements in claim 1 merely constituted conventional steps performed on a generic computer, and therefore did not include additional elements sufficient to amount to significantly more than the abstract idea. Ans. 4. Accordingly, the Examiner concluded that the claims constitute ineligible subject matter.

Appellant argues that claim 1 is not abstract because it recites a "print server" that has been "enhanced to divide a PDF print job into independent segments" via a "specific technique" that optimizes printer efficiency. Appeal Br. 7–8; Reply Br. 2–3. Appellant further argues that claim 1 "transforms the generic concept of 'data configuration' because it considers both the number of logical pages in the print job, as well as the average size of a logical page." Appeal Br. 8–9.

After the Briefs were filed and Answer mailed in this case, the USPTO published "Revised Subject Matter Eligibility Guidance" synthesizing case law and providing agency instruction 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 must look to whether a claim recites:

(1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) ("Step 2A, Prong One"); and

(2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)) ("Step 2A, Prong Two").

See 84 Fed. Reg. at 54–55.

Only if a claim recites a judicial exception and 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" 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 id. 56 (collectively "Step 2B").

We begin our de novo review with Step 2A, Prong One of the Guidance, as applied to Appellant's claim 1.[2] Claim 1 recites "a system" including a "print server" and "job controller" configured to print a PDF file based upon dividing a PDF print job into segments, with the segments being determined by an algorithm further recited in the claim, namely, (1) determining a memory footprint indicative of an expected size of all of the logical pages based upon determined (actual size) of two or more such pages, (2) determining a segment size based on memory footprint. Appeal Br. 20. The Examiner determined that these elements constitute the abstract idea of a "formula for dividing data into various segments by applying predetermined rules." Ans. 2.

We do not agree with the Examiner's determination. Although claim 1 includes a "formula," i.e., a mathematical concept, the claim recites a "print server" and "job controller," both hardware elements, with specifically recited configurations and capabilities. Appeal Br. 20. The Examiner relies on *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.,* 758 F.3d 1344 (Fed. Cir. 2014). Ans. 3–4. In *Digitech*, however, the claims merely recited "taking two data sets and combining them into a single data set simply by organizing existing data into a new form." *Digitech*, 758 F.3d at 1351. Claim 1, in contrast, recites a particular configuration of hardware elements that transforms data into a concrete result, namely a print job sent to a printer for processing (printing). Further,

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[2] The Guidance refers to "Step One" as determining whether the claimed subject matter falls within the four statutory categories identified by 35 U.S.C. § 101: process, machine, manufacture, or composition of matter. This step is not at issue in this case.

the Examiner has not determined, and we do not discern, that the system in claim 1 constitutes a "mental process." As discussed above, the claim recites a "print server" and "job controller" that "transmits segments to an assigned printer for processing." There is no indication on this record that the recited transmitting could occur mentally. Nor does the record include any findings or determinations that the recited memory footprint and segment size determinations could be performed by a human using pen and paper.

Accordingly, we do not agree with the Examiner's determination that claim 1 recites an abstract idea.

Further, even if we determined that claim 1 recites an abstract idea (judicial exception), we conclude that the claim's additional elements integrate the judicial exception into a practical application. Specifically, as Appellant argues, the configuration recited in claim 1 "resolves multiple specific problems that are tied to the known technological process of printing," namely, enabling the printing of PDF files that otherwise would be too large for a printer to process. Reply Br. 3. The steps of "determining a memory footprint indicative of an expected size of each of the logical pages," and "determining a segment size comprising a number of the logical pages" integrate the recited "formula" into the practical application of printing a file.

For each of the foregoing reasons, we are persuaded the Examiner erred in rejecting claim 1 as ineligible subject matter. We, therefore, do not sustain the rejection of claim 1 under 35 U.S.C. § 101. We also do not sustain the same rejection of the remaining claims, argued together with claim 1, for the same reasons.

Rejections under 35 U.S.C. § 112(b)

The Examiner rejects independent claims 1, 8, and 15 because "it is unclear how a memory footprint is determined, and dependent claims 7 and 14 because "it is unclear how [] a memory footprint is calculated." Final Act. 6–7. As Appellant argues, however, the Specification explains that "mean, median, and mode page size are alternative techniques for calculating the memory footprint." Appeal Br. 10; Spec. ¶ 22. Claim 1, for example, recites determining a memory footprint indicative of "expected size" of the logical pages based on a "determined size" (i.e., actual size) of at least two of those pages. We agree with Appellant's argument that a person of ordinary skill in the art would understand that the mean, median, or mode of the foregoing "at least two pages" could be used to determine expected size of each of the logical pages. Appeal Br. 10. Moreover, claim 7 specifically recites calculating memory footprint as a "mean, median, or mode." Appeal Br. 21.

Accordingly, we are persuaded the Examiner erred in rejecting claims 1, 7, 8, 14, and 15 as indefinite, and we do not sustain that rejection.

Rejections under 35 U.S.C. § 103

Appellant argues the Examiner erred in finding the prior art teaches or suggests "determining a memory footprint indicative of an expected size of each of the logical pages, based on a determined size of at least two of the logical pages," as recited in claim 1. Appeal Br. 14–15; Reply Br. 5–6. Specifically, Appellant argues Yokokura "makes no effort to relate the expected size of logical pages in a print job to a number of pages per

segment," but rather, "simply generates a new segment each time a page group boundary is encountered." Appeal Br. 15. Appellant further argues "Yamazaki makes no mention of logical pages" and "would split PDL data regardless of logical page boundaries." *Id.* We, however, are unpersuaded of error regarding claim 1.

As the Examiner finds, Yokokura teaches dividing a PDF print job into different segments and adding a trailer to each segment for indicating the end of the data file. Ans. 6–7; Yokokura Figs. 4, 7B, ¶¶ 5, 10, 52, 77, 82. Further, Yokokura teaches that segment or memory footprint can be indicative of "integer multiples of numbers of pages laid out on one side of a sheet, or [] number of pages laid out on both side[s] of a sheet." Ans. 8–9; *see also* Final Act. 7–8 (a "download buffer size is used as a threshold for defining a segment size in number of logical pages/sheets to that the entire segment data can be downloaded and printed") (citing Yokokura ¶¶ 77, 82)). Accordingly, Yokokura teaches determining footprint of expected page size based on actual page size (and number of pages).

Further, as the Examiner finds, Yamazaki includes a "redundant" teaching of judging whether the size of output PDL data exceeds a maximum size N, and accordingly "divi[ding] the PDL serving as output data into a part having the size N . . . and a part other than the former part." Yamazaki ¶ 165; Ans. 8–9.

Both Yokokura and Yamazaki pertain to determining a segment threshold based on a memory footprint, and we discern no error in the Examiner's finding that one of ordinary skill would have combined the references (which is not argued by Appellant) in order to optimize printing efficiency without incurring data loss. Ans. 9; *Innovention Toys LLC v.*

MGA Entertainment Inc., 637 F.3d 1314, 1321 (Fed. Cir. 2011); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) ("[T]he [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.").

Accordingly, we are unpersuaded of error regarding claim 1. For the same reasons, we are unpersuaded of error regarding independent claims 8 and 15, and the remaining dependent claims (not argued separately) other than dependent claims 3 and 7, discussed below.

Dependent claim 3 recites the job controller is configured to "assign the print job to one of multiple categories based on the memory footprint, and each category is associated with a different segment size, and the categories are selected from image, text, standard, and book." Appeal Br. 21. The Examiner finds that Yokokura teaches dividing data items based upon "size" and "job type," and Tojo teaches classifying clusters "by size and shape into blocks having different attributes." Ans. 10–11; Yokokura Fig. 4, ¶ 42; Tojo ¶¶ 127, 156. As Appellant argues, however, the Examiner makes no finding that the cited references (alone or in combination) "assign *the print job* to one of multiple categories," as claim 3 recites. Appeal Br. 21 (emphasis added) The teachings of Yokokura and Tojo regarding data categories and dividing of data are not the same as categorizing a print job itself, as in claim 3. Accordingly, we are persuaded of error regarding claim 3.

Dependent claim 7 recites the job controller "mathematically calculates the memory footprint as a mean, median, or mode." Appeal Br. 21. In the Answer, the Examiner finds that the claim "lack[s] details on how

to perform the calculation" and reiterates the rejection under 35 U.S.C.
§ 112(b). Ans. 12. The Examiner, however, does not provide a prima facie
case for the obviousness rejection in the Answer. In the Final Action, the
Examiner applies "the [same] rationale applied to the rejection of claim 1,"
notwithstanding that claim 7 includes the additional limitation as recited
above. The Examiner also finds that Yokokura teaches "dividing" a
document, and therefore that if the document is "not divided" it is in "whole
mode." Final Act. 9 (citing Yokokura ¶¶ 77, 78). We, however, are
persuaded by Appellant's argument that the Examiner's findings do not
correspond to the claim limitations, namely, calculating mean, median, or
mode of memory footprint. Accordingly, we are persuaded by Appellant's
argument that the Examiner erred in rejecting claim 7 as obvious. Appeal
Br. 18–19.

For the foregoing reasons, we sustain the obviousness rejections of
claims 1, 2, 4–6, and 8–20, and we do not sustain the obviousness rejections
of claims 3 and 7.

SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–20	101	Ineligible Subject Matter		1–20
1, 7, 8, 14, 15	112(b)	Indefiniteness		1, 7, 8, 14, 15
1, 7, 8, 14, 15	103	Yokokura, Yamazaki	1, 8, 14, 15	7
2, 9, 16	103	Yokokura, Yamazaki, Masuoka	2, 9, 16	

3, 10, 17	103	Yokokura, Yamazaki, Tojo	10, 17	3
4–6, 11–13, 18–20	103	Yokokura, Yamazaki, Tojo, Johnson	4–6, 11–13, 18–20	
Overall Outcome			1, 2, 4–6, 8–20	3, 7

DECISION

We affirm the Examiner's decision rejecting claims 1, 2, 4–6, 8–20.

We reverse the Examiner's decision rejecting claims 3 and 7.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED-IN-PART