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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte REN JING AN, LIU CHAO JUN, MA XI JUN,
HOU XIAO QIANG, YIN RUI, and PING YUAN

Appeal 2018-001038
Application 12/690,982[1]
Technology Center 2800

Before GEORGE C. BEST, CHRISTOPHER C. KENNEDY, and
BRIAN D. RANGE, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

DECISION ON APPEAL

SUMMARY

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's
decision rejecting claims 21–40. We have jurisdiction. 35 U.S.C. § 6(b).

We AFFIRM.

STATEMENT OF THE CASE[2]

Appellants describe the present invention as relating to service oriented architecture (SOA) and, more particularly, a system for supporting collaborative working of process-oriented and event-based business process management (BPM) methods in a service-orientated architecture. Spec. ¶ 1. Claim 21, reproduced below with emphases added to certain key recitations, is illustrative of the claimed subject matter:

> 21.   A computer-executed method for performing a computer-implemented operation, comprising:
>
> executing, using a process-oriented runtime engine, at least one process-oriented execution model;
>
> **executing, in parallel** with the at least one process-oriented execution model and using an event-based runtime engine, at least one event-based execution model; and
>
> **facilitating, using a bridge disposed between the at least one process-oriented execution model and the at least one event-based execution model, an interaction between the at least one- [sic] oriented execution model and the at least one event-based execution model while these models are concurrently executing**, wherein
>
> the computer-implemented operation is modeled by the combination of the at least one process-oriented execution model and the at least one event-based execution model.

Appeal Br. 21 (Claims App.).

We note that our prior decision, Appeal 2015-004499, arises from the same application, but Appellants have amended claims since the time of that decision.

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REFERENCES

The Examiner relies upon the prior art below in rejecting the claims on appeal:

Dumas et al.   US 2007/0135936 A1   June 14, 2007

REJECTIONS

The Examiner maintains the following rejections on appeal:

Rejection 1. Claims 21–40 under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (in particular, an abstract idea) without significantly more. Final Act. 5.

Rejection 2. Claims 21–40 under 35 U.S.C. § 103 as unpatentable over Applicant Admitted Prior Art as stated in the Specification's background ("AAPA") in view of Dumas. *Id.* at 10.

ANALYSIS

We review the appealed rejections for error based upon the issues identified by Appellants 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 examiner's rejections.")). Where we affirm the Examiner's rejection, we do so because, after considering the evidence presented in this Appeal and each of Appellants' arguments, we are not persuaded that Appellants identify reversible error. Thus, where we affirm the Examiner's rejections, we do so for the reasons expressed in the Final Office Action and the Answer and provide additional emphasis.

Rejection 1. The Examiner rejects claims 21–40 under 35 U.S.C. § 101 because the claims are directed to an abstract idea without significantly more. Final Act. 5. The Examiner determines, for example:

> Claim 21 is a computer-executed method, directed to the abstract ideas of executing, using a process-oriented runtime engine, at least one process-oriented executed model, executing, in parallel with the at least one process-oriented execution model and using an event-based runtime engine, at least one event-based execution model, and facilitating, using a bridge disposed between, the at least one process-oriented execution model and the at least one event-based execution model while these models are concurrently executing. There processes are computational thinking or mental processes which similar to Bilski and Alice "method of organizing human activity".

Id.

To determine whether an invention claims ineligible subject matter requires the application of the two-step test first introduced in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012) and further explained in *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 215–17 (2014). The first step requires a determination as to whether the claims at issue are directed to a patent-ineligible concept such as an abstract idea. *See Alice*, 573 U.S. at 217–18. The second step requires examination of "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." *Id.* at 220–22 (quoting *Mayo* 566 U.S. at 71–73, 79–80). In *Alice,* the Court held that the recited computer functions did not transform the claimed abstract idea into a patent-eligible invention because the functions were "well-understood, routine, and conventional activit[ies]." *Id.* at 225 (citation omitted).

Here, the second step of the *Alice/Mayo* test is dispositive. Appellants assert that the recited "bridge" (recited by each independent claim on appeal) is a machine. Appeal Br. 7. Appellants further argue that "the claimed 'bridge' and its use as part of the claimed invention, as a whole, is not a conventional component." *Id.* at 17. The Examiner finds that the recited bridge is "routine and conventional" (*see* Ans. 3), but the Examiner does not provide evidentiary support for this assertion.

On the record before us, the Examiner has not provided sufficient evidence to establish that the bridge recited by each independent claim is well-understood, routine, and conventional. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018) ("[w]hether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination."); *see also* Robert W. Bahr, *Changes in Examination Procedures Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision* (*Berkheimer v. HP, Inc.*), USPTO 1–5 (2018), https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF. Although the Examiner finds that Dumas teaches a bridge (*see, e.g.*, Final Act. 11–12), this evidence standing alone is insufficient to establish that the recited bridge is well-understood, routine, and conventional in the field. *See Berkheimer*, 881 F.3d at 1369 ("The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.").

We, therefore, are constrained to reverse the Examiner's rejection. We emphasize that the reversal is procedural in nature; our decision flows from

our reviewing court's *Berkheimer* decision and the related office

memorandum which arose after all briefing was completed in this appeal.

Rejection 2. The Examiner rejects claims 21–40 under 35 U.S.C.

§ 103 as unpatentable over the AAPA in view of Dumas. Final Act. 10.

Appellants separately argue claims 21 and 26. Consistent with the

provisions of 37 C.F.R. § 41.37(c)(1)(iv) (2013), claims 33 and 40 stand or

fall with claim 26, and all remaining claims stand or fall with claim 21.

Appeal Br. 18.

The Examiner finds, for example, that the AAPA discloses a computer

hardware system configured to perform executing, using a process-oriented

runtime engine, a process-oriented execution model. Final Act. 10. The

Examiner finds that the AAPA does not, for example, disclose facilitating a

bridge between one process-oriented execution model and one event-based

execution model while the models are concurrently executing. *Id.* at 11. In

particular, the Examiner identifies execution environment 116 ("EE116") as

depicted in Figure 1 of Dumas as being the recited bridge. *Id.* at 11–12. The

Examiner determines:

> It would have been obvious to a person of ordinary skill in the
> art at the time the invention was made to modify the teaching of
> AAPA to include a combination of an oriented process model
> and event-based model with interface of the middleware as the
> bridge as taught by Dumas as such that would support the
> collaborative working of process-oriented and event-based
> business process management, thereby further improving the
> working efficiency for both system and users.

Id. at 12.

Appellants argue that Dumas does not teach "a bridge disposed

between the at least one process-oriented execution model and the at least

one event-based execution model." Appeal Br. 19. Appellants also argue

that Dumas does not teach a bridge facilitating "interaction between the at least one-oriented [sic, one process-oriented] execution model and the at least one event-based execution model while these models are concurrently executing." *Id.* at 19–24.

As a threshold matter, the Examiner finds that Dumas's EE116 is a "bridge" as that term is used in claim 21. Final Act. 11–12. We accept this finding as fact because Appellants do not meaningfully dispute this point. *Ex parte Frye*, 94 USPQ2d at 1075. Instead, the thrust of Appellants' argument assumes that execution environment is in fact a bridge. Appeal Br. 22.

We are, thus, left with this question: does Dumas teach that its EE116 facilitates "interaction between the at least one [process]-oriented execution model and the at least one event-based execution model while these models are concurrently executing"? Based upon the preponderance of the evidence before us, we find that the answer is yes.

Figure 1 of Dumas depicts EE116 and demonstrates that EE116 acts as middleware residing at the center of system 100 and coordinates between the user application and various backend applications. Dumas, Fig. 1, ¶¶ 36–39. The Examiner finds that Dumas, including Figure 4, teach that the EE116 middleware coordinates and facilitates interactions between models. Ans. 13–14. Dumas Figure 4 is reproduced below.
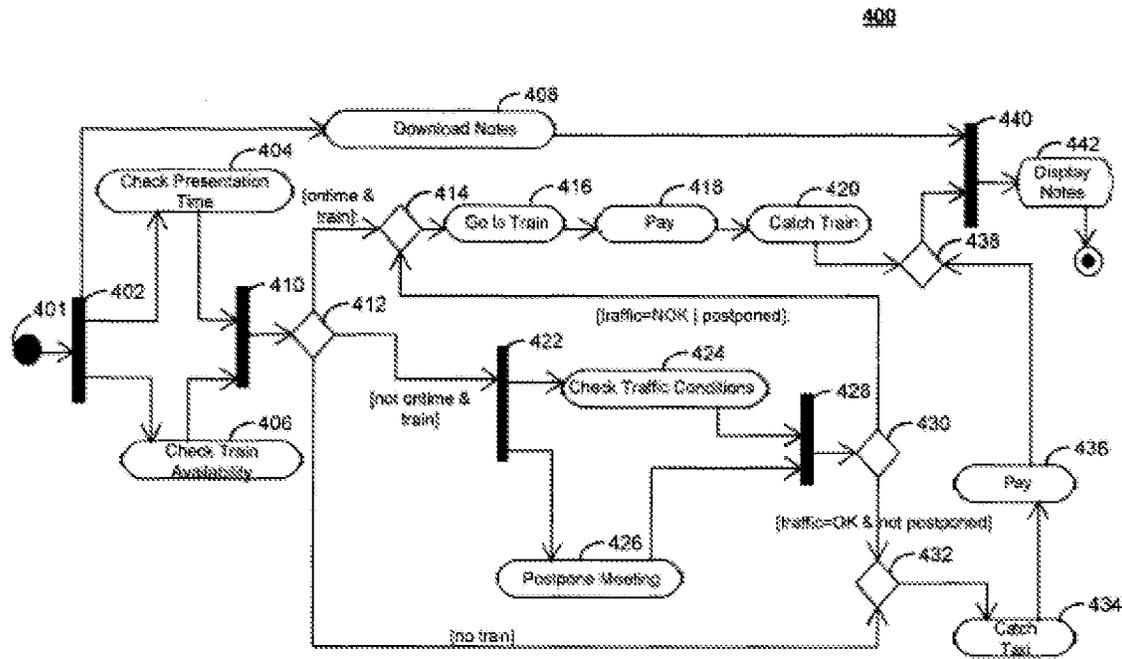
FIG. 4

Dumas Figure 4 depicts an activity diagram that "may be operated upon by the system 100 of FIG 1." *Id.* ¶ 66.

The Examiner finds that Dumas Figure 4 depicts parallel processes as represented by the parallelism bars (the vertical dark bars in Figure 4) including, for example, parallelism bar 440. Ans. 12–13; Dumas ¶¶ 68–69. Dumas teaches that the parallelism bars represent parallel processes (i.e., processes that happen simultaneously). Dumas ¶¶ 68–72. The preponderance of the evidence supports the Examiner's finding that facilitation of the parallel processes is coordinated by EE116. *Id.* ¶¶ 66 (explaining that activity diagram 400 is operated upon by the system 100 of Figure 1), 67 (explaining that system coordinates tasks such as checking a presentation time, train availability, and downloading notes).

Contrary to Appellants' argument in the Reply Brief (Reply Br. 7–8), the preponderance of the evidence supports that some of the activities of

Dumas Figure 4 are process-oriented models while others are event-based. Appellants' Specification indicates that actions such as "Validate order" 520, "Confirm order" 525, and "Approve?" 530 may be "process models." Spec., Fig. 5, ¶ 45. We find that "Download notes" 408 in Dumas Figure 4 is similarly a process model. Dumas, Fig. 4, ¶ 68. The "Download notes" process, according to Figure 4, is not dependent on an event condition.

Appellants' Specification also explains that, for example, that "Validate order" 520 may be transformed into an event-based model where validating the order depends on "Complex event conditions" (i.e., manager approval of the order). Spec., Fig. 6, ¶ 47. Similarly, we find that, for example, Dumas's "Postpone Meeting" 426 model is event-based because it depends on the "[not ontime & train] condition." Dumas, Fig. 4, ¶ 70. Dumas Figure 4's parallelism bars indicates that the process based model "Download notes" executes in parallel with the event-based model "Postpone Meeting." *See, e.g., id.* ¶ 68. As explained above, EE116 facilitates interaction between these process-oriented and event-based models, and, because the models execute in parallel, it does so while the models are concurrently executing.

For the reasons explained above, Appellants' argument does not identify reversible error and we, therefore, sustain the Examiner's rejection of claims 21–25, 27–32, and 34–39.

Claim 26 recites:

26.   The method of claim 25, wherein

the bridge transforms events sent between the at least one process-oriented execution model and the at least one event-based execution model to match the respective forms of the at least one process-oriented execution model and the at least one event-based execution model.

Appeal Br. 29 (Claims App.).

The Examiner finds that Dumas teaches that the bridge transforms events sent between process-oriented execution models and event-based execution models to match respective forms. Final Act. 16 (citing Dumas). Appellants argue that the Examiner's citations including the Examiner's reference to Figure 6 do not relate to the process model 104. Appeal Br. 25. Appellants further argue that Dumas does not support sending events between two different types of models. Reply Br. 8–9. In the Answer, the Examiner further explains that the routers 126 connected to EE116 (as explained above, a "bridge" in the parlance of Appellants' claims) coordinate models and coordinates process instance IDs. Appeal Br. 16.

The preponderance of the evidence supports the Examiner's position. Dumas indicates that its routers 126 are part of execution environment 116. Dumas, Fig. 1. Thus, in the parlance of Appellants' claims, routers 126 are part of the bridge. The routers (and, therefore, the execution environment 116 / bridge), in turn, make sure that "object templates" appropriately match across models. Dumas ¶ 97. These Dumas models are, as explained above, both process-oriented execution models and event-based execution models. *See* Dumas, Fig. 4 (depicting both kinds of models as explained above).

Because Appellants' argument does not identify reversible error, we sustain the rejection of claims 26, 33, and 40.

DECISION

For the above reasons, we affirm the Examiner's rejections of claims 21–40 under 35 U.S.C. § 103. We procedurally reverse the Examiner's rejection of claims 21–40 under 35 U.S.C. § 101.

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

AFFIRMED