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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* JOSEPH M. JOY, NARENDRANATH DATHA,  
TANUJA ABHAY JOSHI, SRIRAM K. RAJAMANI, and  
ERIC J. STOLLNITZ

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Appeal 2018-008215  
Application 13/429,093  
Technology Center 2400

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Before ERIC S. FRAHM, LINZY T. McCARTNEY, and  
MICHAEL T. CYGAN, *Administrative Patent Judges*.

McCARTNEY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant<sup>1</sup> seeks review under 35 U.S.C. § 134(a) of the Examiner's final rejection of claims 1, 4–8, and 23–36. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> Appellant identifies the real party in interest as Microsoft Technology Licensing, LLC. Appeal Brief 3, filed April 26, 2018 (“Appeal Br.”).

## BACKGROUND

This patent application concerns “[t]echniques for manipulation of user experience state.” Specification ¶ 3, March 23, 2012 (“Spec.”). Claim 1 illustrates the claimed subject matter:

1. A computer-implemented method, comprising:
  - detecting a change to a logical state of content, the change to the logical state occurring in response to a scripted event associated with the content, and the scripted event being generated independent of a user input;
  - generating at least one state sliver that includes state information about the change to the logical state of the content;
  - generating a processed state sliver by applying at least one transformation rule to the at least one state sliver, the at least one transformation rule including a function for mapping the content to different content of an external entity, the content having a first dimensionality and the different content having a second dimensionality;
  - emitting a state stream that includes the processed state sliver for receipt by the external entity; and
  - causing the external entity to affect a change to the different content in response to emitting the state stream.

Appeal Br. 44.

## REJECTIONS

| Claims             | 35 U.S.C. § | References                                  |
|--------------------|-------------|---|
| 1, 4, 5, 25–29, 34 | 103(a)      | Ruths, <sup>2</sup> Heusermann <sup>3</sup> |
| 6, 30              | 103(a)      | Ruths, Heusermann, Abt <sup>4</sup>         |
| 7, 8, 31           | 103(a)      | Ruths, Heusermann, Pegg <sup>5</sup>        |
| 23, 32             | 103(a)      | Ruths, Heusermann, Pabla <sup>6</sup>       |
| 24, 33             | 103(a)      | Ruths, Heusermann, Gordon <sup>7</sup>      |
| 35, 36             | 103(a)      | Abt, Heusermann, Brattain <sup>8</sup>      |

## DISCUSSION

### Claim 1

#### *“Generating a Processed State Sliver”*

Claim 1 recites “generating a processed state sliver by applying at least one transformation rule to the at least one state sliver, the at least one transformation rule including a function for mapping the content to different content of an external entity, the content having a first dimensionality and the different content having a second dimensionality.” Appeal Br. 44. Appellant argues that Ruths does not teach or suggest this limitation because Ruths discloses “collaborative data resource representations [that] are identical to one another” and therefore “cannot be cited . . . to teach both ‘the content’ and ‘the different content’ recited in claim 1.” Appeal Br. 16. Appellant also contends that Ruths does not “even remotely suggest ‘the content having a first dimensionality and the different content having a

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<sup>2</sup> Ruths et al. (US 2003/0009603 A1; January 9, 2003).

<sup>3</sup> Heusermann et al. (US 2013/0151264 A1; June 13, 2013).

<sup>4</sup> Abt Jr. et al. (US 2011/0055329 A1; March 3, 2011).

<sup>5</sup> Pegg (US 8,275,816 B1; September 25, 2012).

<sup>6</sup> Pabla et al. (US 7,908,325 B1; March 15, 2011).

<sup>7</sup> Gordon et al. (US 2007/0288164 A1; December 13, 2007).

<sup>8</sup> Brattain et al. (US 2012/0117170 A1; May 10, 2012).

second dimensionality” as required by claim 1. Appeal Br. 16. According to Appellant, the Examiner found that Ruths discloses “2D dimensionality for both contents” but “[t]he claimed ‘first dimensionality’ and ‘second dimensionality’ must correspond to different things, not to the same thing.” Reply Brief 5, filed August 9, 2018 (“Reply Br.”).

We find these arguments unpersuasive. For the recited “content” and “different content,” Ruths discloses that a participant device can change a local representation of a collaborative data resource and a collaborative platform can synchronize that change with representations of that resource on other participant devices. *See, e.g.*, Ruths ¶ 74, *cited in* Final Act. 3. Thus, Ruths teaches “content” (the changed collaborative data resource) and “different content” (the representations of the collaborative data resource on other devices *before* the platform has synchronized the change).

As for the recited “content having a first dimensionality and the different content having a second dimensionality,” this limitation requires different *instances* of dimensionality, not different *numbers of dimensions* for the first and second dimensionalities as suggested by Appellant. *See, e.g.*, *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371 (Fed. Cir. 2003) (“The use of the terms ‘first’ and ‘second’ is a common patent-law convention to distinguish between repeated instances of an element or limitation.”). The term “first dimensionality” refers to the dimensionality of the content and the term “second dimensionality” refers to the dimensionality of the different content. But claim 1 does not explicitly require that first and second dimensionalities have different numbers of dimensions, for example, that the first dimensionality is three dimensional and the second dimensionality is one dimensional. In this respect, claim 1

differs sharply from some of its dependent claims, which explicitly recite that the dimensionalities of the content and the different content have different numbers of dimensions. *See, e.g.*, Appeal Br. 46 (claim 23 reciting “wherein the dimensionality of the content is a two dimensional space and dimensionality of the different content is a one dimensional space”).

Accordingly, the broadest reasonable interpretation of “the content having a first dimensionality and the different content having a second dimensionality” encompasses the content and the different content having dimensionalities with the same number of dimensions. As found by the Examiner, Ruths teaches that the content and the different content have dimensionalities with the same number of dimensions. *See, e.g.*, Ans. 14 (finding that Ruths discloses content and different content that have “2D dimensionality”). We thus find this argument unpersuasive.

Appellant also asserts in a single sentence that the combination of Ruths and Heusermann “is not capable of mapping content having a first dimensionality to different content having a second dimensionality.” Appeal Br. 13 (emphasis omitted). But Appellant has provided no persuasive evidence or reasoning to support this assertion. *See* Appeal Br. 13. We therefore find this argument unpersuasive.

In the Reply Brief, Appellant argues for the first time that paragraph 74 of Ruths does not teach the “processed state sliver” and the “at least one transformation rule” recited in the “generating a processed state sliver” limitation. *See* Reply Br. 3–5. Appellant contends that paragraph 19 of the written description defines the term “state sliver” and asserts that although “Ruths generally discloses that ‘the application event may be translated into a collaborative data interaction,’ Ruths does not disclose ‘generating a

processed state sliver’ as recited in claim 1.” Reply Br. 4. Appellant also argues that “it is not clear . . . what, if anything” in Ruths corresponds to the claimed transformation rule and argues that “Ruths does not disclose any transformation rules.” Reply Br. 5.

We find these arguments unpersuasive. First, Appellant forfeited these arguments by failing to raise them in the Appeal Brief. In the Final Office Action, the Examiner relied on paragraph 74 of Ruths for these elements and specifically pointed to the step of translating an application into a collaborative data interaction disclosed in an accompanying drawing. *See* Final Act. 3 (citing Ruths ¶¶ 74, 81, Fig. 7A, item 84 (step of “[t]ranslat[ing] application event into collaborative data interaction”). Yet Appellant waited until the Reply Brief to raise these arguments and did not present good cause for failing to raise them earlier. Appellant therefore forfeited these arguments. *See, e.g.*, 37 C.F.R. §§ 41.37(c)(1)(iv) (“Except as provided for in §§ 41.41, 41.47 and 41.52, any arguments or authorities not included in the appeal brief will be refused consideration by the Board for purposes of the present appeal.”), 41.41(b)(2) (explaining that, subject to certain exceptions, “[a]ny argument raised in the reply brief which was not raised in the appeal brief . . . will not be considered by the Board for purposes of the present appeal, unless good cause is shown”).

Second, even if Appellant had timely raised these arguments, we would have found them unpersuasive. As to the recited “processed state sliver,” contrary to Appellant’s arguments, paragraph 19 of the written description does not define the term “state sliver.” Paragraph 19 simply explains that “state slivers” are data constructs that, “[i]n at least some embodiments,” “can define” and “can provide” certain things. Spec. ¶ 19.

More important, even if this paragraph provided a definition of “state slivers,” Appellant has not clearly identified what that definition is or sufficiently explained why Ruths’s translated collaborative data interaction fails to satisfy it. Appellant states only that “[w]hile Ruths generally discloses that ‘the application event may be translated into a collaborative data interaction,’ Ruths does not disclose ‘generating a processed state sliver.’” Reply Br. 4. This inadequately supported argument has not persuaded us that the Examiner erred.

For the recited “at least one transformation rule,” Ruths discloses that “an adapter that has received the event notification may translate or map the event into a corresponding interaction for the collaborative data resource.” Ruths ¶ 74. Ruths explains that “[a]n adapter may be configured to translate events for a specific application and/or for a specific type of collaborative data resource. Thus, different adapters may be provided for different applications and/or different collaborative resources.” Ruths ¶ 73. These disclosures teach one of ordinary skill in the art that the disclosed adapters use different algorithms or procedures (that is, translation rules) to translate events. We thus agree with the Examiner that Ruths teaches “at least one transformation rule.”

*“Emitting a State Stream” and “Causing the External Entity”*

Claim 1 also recites “emitting a state stream that includes the processed state sliver for receipt by the external entity” and “causing the external entity to affect a change to the different content in response to emitting the state stream.” Appeal Br. 44.

In the Appeal Brief, Appellant generally asserts that the cited art does not teach these limitations, but the only specific arguments Appellant raises

are that Ruths does not teach “the content” and “the different content” and “the content having a first dimensionality and the different content having a second dimensionality.” *See* Appeal Br. 13–17. In the Reply Brief, Appellant for the first time presents specific arguments for these limitations. For the “emitting” limitation, Appellant contends that “Ruths does not disclose exactly what the ‘notification of a collaborative data event’ includes” and thus “Ruths includes no teachings or suggestions that correspond to the claimed ‘state stream’ and ‘processed state sliver.’” *See* Reply Br. 6. And for the “causing” limitation, Appellant argues that although Ruths teaches invoking an application event (or events) so “that ‘the change made to the collaborative resource will be reflected in the application,’” Ruths does not teach “causing the external entity to affect a change to the *different content* in response to emitting the state stream.” Reply Br. 6 (emphasis modified).

Appellant forfeited these arguments by failing to raise them in the Appeal Brief. In the Final Office Action, the Examiner relied on Ruths’s disclosures of receiving notification of a collaborative data event and invoking an application event within an application, respectively, for the disputed “emitting” and “causing” limitations. *See* Final Act. 3–4 (citing Ruths Fig. 7B, item 88 (step of “[r]eceiv[ing] notification of collaborative data event”), item 92 (step of “[i]nvok[ing] application event within application”). But instead of explicitly challenging these findings in the Appeal Brief, Appellant waited until the Reply Brief to do so and did not explain why there was good cause for the delay. Appellant therefore forfeited these arguments. *See, e.g.*, 37 C.F.R. §§ 41.37(c)(1)(iv), 41.41(b)(2).

In any case, had Appellant timely made these arguments, we would have found them unpersuasive. Starting with the “emitting” limitation, Ruths discloses sending state information or messages indicating a desired change to other devices so that the devices can modify their representation of a collaborative resource accordingly. *See, e.g.*, Ruths ¶¶ 51, 66, 75, 86–87, 100. For instance, Ruths discloses “[a] mechanism for binding the application to the collaborative environment may receive notification of a collaborative data event, as indicated at 88. For example, a collaborative platform on the participant may receive a communication or command from a remote participant *indicating a change to a collaborative data resource.*” Ruths ¶ 75 (emphasis added). This teaches that the notifications of a collaborative data event include modifications to a collaborative data resource. Thus, for at least this reason, we see no merit in Appellant’s argument that “Ruths does not disclose exactly what the ‘notification of a collaborative data event’ includes” and thus does not teach the “emitting” limitation. Reply Br. 6.

Finally, Appellant’s argument about the “causing” limitation rests on Appellant’s belief that Ruths does not disclose different content. *See* Reply Br. 6. But as explained above, Ruths teaches “different content,” namely, the representations of the collaborative data resource on other devices before the platform has synchronized a change to the resource. *See, e.g.*, Ruths ¶ 74. We therefore find this argument unpersuasive.

For at least the above reasons, we sustain the Examiner’s rejection of claim 1.

Claim 23

Claim 23 recites “[t]he method of claim 1, wherein the dimensionality of the content is a two dimensional space and dimensionality of the different content is a one dimensional space.” Appeal Br. 46. Appellant contends that Pabla does not teach or suggest this limitation because “Pabla merely describes that a collaboration framework may store information describing input events.” Appeal Br. 20. According to Appellant, “Pabla does not include a description or mention of a dimensional space for an input event, or for any information derived from an input event” and therefore “cannot serve as basis to teach or suggest [the] subject matter of claim 23.” Appeal Br. 21. Appellant also contends that the Examiner’s combination of Ruths and Heusermann does not remedy this deficiency. *See* Appeal Br. 18–19.

We find these arguments unpersuasive. The Examiner found that the combination of Ruths and Heusermann teaches “wherein the dimensionality of the content is a two dimensional space” but does not teach the “dimensionality of the different content is a one dimensional space.” *See* Final Act. 8; Ans. 17. The Examiner found that Pabla teaches the “dimensionality of the different content is a one dimensional space” because the written description teaches that a one-dimensional space includes timelines and Pabla discloses an event log that is similar to a timeline. *See* Ans. 16–18. The Examiner concluded that it would have been obvious to modify the combination of Ruths and Heusermann with the teachings of Pabla to arrive at the claimed invention. *See* Final Act. 8–9; Ans. 16–18. Appellant’s arguments against subsets of the Examiner’s combination of Ruths, Heusermann, and Pabla have not persuaded us that the Examiner erred because these arguments do not address the rejection made by the

Examiner. *Cf. In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (“[O]ne cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references.”).

Appellant also asserts that the combination of Ruths, Heusermann, and Pabla “is unable to affect a change to different content having a second dimensionality in a one dimensional space in response to detecting a change to a logical state of content having a first dimensionality in a two dimensional space.” Appeal Br. 18 (emphasis omitted). Not only has Appellant provided no persuasive evidence or reasoning to support this assertion, *see* Appeal Br. 18, but also claim 23 does not recite affecting a change to different content in response to detecting a change to a logical state of content having a first dimensionality in a two dimensional space. Claim 23, by virtue of its dependence from claim 1, requires affecting a change to the different content “in response to emitting the state stream.” Appeal Br. 44, 46. We thus find this argument unpersuasive.

For at least the above reasons, we sustain the Examiner’s rejection of claim 23.

#### Claim 24

Claim 24 recites “[t]he method of claim 1, wherein the content is a navigable map and the different content is one of a video, an image, audio, a text document, or an interactive game.” Appeal Br. 46. Appellant argues that the Examiner has not shown that Gordon teaches the limitations recited in claim 24 through its dependency from claim 1 when “the content” and “the different content” are limited in the manner recited in claim 24. *See* Appeal Br. 24–25.

We find this argument unpersuasive. The Examiner did not rely on Gordon for the limitations recited in claim 1 (and incorporated into claim 24 through its dependency from claim 1). The Examiner found that a combination of Ruths and Heusermann teaches the limitations recited in claim 1 and that this combination teaches that the different content is an image as recited by claim 24. *See* Final Act. 3–4, 9. The Examiner found that this combination does not teach the interactive map content recited in claim 24 but found that Gordon remedies this deficiency. *See* Final Act. 9–10. The Examiner concluded that a combination of the teachings of Ruths, Heusermann, and Gordon would have made the subject matter recited in claim 24 obvious. *See* Final Act. 9–10. Appellant’s arguments about Gordon alone have not persuaded us that the Examiner erred. *See Keller*, 642 F.2d at 426.

Appellant also argues in passing that the combination of Ruths, Heusermann, and Gordon “has not been shown to teach or suggest affecting a change to a video, an image, audio, a text document, or an interactive game in response to detecting a change to a logical state of a navigable map.” Appeal Br. 22 (emphasis omitted). Appellant has provided no persuasive evidence or reasoning to support this argument. In any event, claim 24 (by its dependency from claim 1) requires causing a change in this content in response to emitting a state stream, not detecting a change to a logical state of a navigable map. *See* Appeal Br. 44, 46. We therefore find this argument unpersuasive.

For at least the above reasons, we sustain the Examiner’s rejection of claim 24.

### Claim 35

Claim 35 recites “determining a difference between a current logical state of the content and a previous logical state of the content in response to detecting the scripted event” and “causing the external entity to affect a change to different content by emitting the processed sliver for receipt by the external entity.” Appeal Br. 49. Appellant argues that Abt does not teach these limitation because “Abt’s collaborative environment is only described with respect to multiple users sharing *the same content*” and therefore “is unable to affect a change to different content in response to determining a difference between a current logical state of content and a previous logical state of the content.” Appeal Br. 42 (emphasis modified).

We find this argument unpersuasive. Abt discloses comparing current and previous versions of content (“the content”) to identify modifications and sending the identified modifications to a collaboration unit. *See* Abt ¶¶ 41–42, *cited in* Final Act. 10. The collaboration unit in turn sends the modifications to a client that reproduces the modifications on local content (“the different content”). *See* Abt ¶ 45, *cited in* Final Act. 11. Thus, contrary to Appellant’s argument, Abt discloses causing a change to different content in response to determining a difference between a current logical state of content and a previous logical state of the content.

For at least the above reasons, we sustain the Examiner’s rejection of claim 35.

### Remaining Claims

For claims 4–8, 25–34, and 36, Appellant relies on the unpersuasive arguments addressed above. We therefore sustain the Examiner’s rejections of these claims.

CONCLUSION

| <b>Claims Rejected</b> | <b>35 U.S.C. §</b> | <b>References</b>         | <b>Affirmed</b>    | <b>Reversed</b> |
|------------------------|--------------------|---------------------------|--------------------|-----------------|
| 1, 4, 5, 25–29, 34     | 103(a)             | Ruths, Heusermann         | 1, 4, 5, 25–29, 34 |                 |
| 6, 30                  | 103(a)             | Ruths, Heusermann, Abt    | 6, 30              |                 |
| 7, 8, 31               | 103(a)             | Ruths, Heusermann, Pegg   | 7, 8, 31           |                 |
| 23, 32                 | 103(a)             | Ruths, Heusermann, Pabla  | 23, 32             |                 |
| 24, 33                 | 103(a)             | Ruths, Heusermann, Gordon | 24, 33             |                 |
| 35, 36                 | 103(a)             | Abt, Heusermann, Brattain | 35, 36             |                 |
| <b>Overall Outcome</b> |                    |                           | 1, 4–8, 23–36      |                 |

No 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