



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO. Includes application details for Fujitsu Technology & Business of America and examination information.

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

- fpc-mailroom@fujitsu.com
pamelabrisky@system.foundationip.com
tiep.nguyen@fujitsu.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* MICHAEL KLEINEBERG, BERNHARD SCHRÄDER, and  
VAN SON NGUYEN<sup>1</sup>

---

Appeal 2019-002990  
Application 14/385,302  
Technology Center 2100

---

Before JOSEPH L. DIXON, JOHN A. EVANS, and  
JUSTIN BUSCH, *Administrative Patent Judges*.

EVANS, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of Claims 13–16, 18–23, 27–32, 35, and 36. Appeal Br. 2. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We REVERSE.

---

<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). The Appeal Brief identifies Fujitsu Technology Solutions Intellectual Property GmbH, as the real party in interest. Appeal Br. 3.

## INVENTION

The invention is directed to a modular server system. *See* Abstract. Claims 13, 22, 29, and 30 are independent. Claim 13, reproduced below, is illustrative of the invention.

13. A modular server system comprising:

[a]<sup>2</sup> a plurality of server groups, wherein each server group is adapted to receive a plurality of server modules, and

[b] a plurality of I/O groups, wherein each I/O group is adapted to receive a plurality of I/O components and comprises at least one switch element,

[c] wherein, for each given I/O group of the plurality of I/O groups, the given I/O group is allocated to exactly one given server group of the plurality of server groups,

[d] each one of the server modules of only the given server group is directly coupled by a first point-to-point connection to the at least one switch element of the given I/O group;

[e] each one of the I/O components of the given I/O group is directly coupled by a second point-to-point connection to the at least one switch element of the given I/O group,

[f] the at least one switch element of the given I/O group is coupled by a third point-to-point connection to the at least one switch of another I/O group of the plurality of I/O groups allocated to another server group of the plurality of server groups,

[g] each one of the server modules of the given server group establishes dedicated first data connections with I/O components of the given I/O group using only a single switch element of the given I/O group to directly connect a

---

<sup>2</sup> Limitation designators, e.g., “[a],” added to facilitate discussion. *See* Appeal Br. 14.

corresponding first point-to-point connection to a corresponding second point-to-point connection, and

[f] each one of the server modules of the given server group establishes shared second data connections with I/O components of the other I/O group using the at least one switch element of the given I/O group and the at least one switch element of the other I/O group to indirectly connect the corresponding first point-to-point connection via the third point-to-point connection to a corresponding second point-to-point connection.

#### PRIOR ART

| <b>Name<sup>3</sup></b> | <b>Reference</b>   | <b>Date</b>   |
|-------------------------|--------------------|---------------|
| Uehara                  | US 2009/0265501 A1 | Oct. 22, 2009 |
| Felton                  | US 8,005,999 B1    | Aug. 23, 2011 |

#### REJECTIONS<sup>4</sup> AT ISSUE<sup>5</sup>

1. Claims 13–16, 18–23, 27, 28, 30–32, 35, and 36 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Uehara. Final Act. 2–9.
2. Claim 29 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Uehara and Felton. Final Act. 9–12.

---

<sup>3</sup> All citations herein to the references are by reference to the first named inventor/author only.

<sup>4</sup> The present application was being examined under the pre-AIA first to invent provisions. Final Act 2.

<sup>5</sup> Throughout this Decision, we refer to the Appeal Brief (“Appeal Br.”) filed November 1, 2018, the Reply Brief (“Reply Br.”) filed March 5, 2019, the Final Office Action (“Final Act.”) mailed May 18, 2018, the Examiner’s Answer mailed January 8, 2019, and the Specification (“Spec.”) filed September 15, 2014.

## ANALYSIS

We have reviewed Appellant's arguments in the Briefs, the Examiner's rejection, and the Examiner's response to Appellant's arguments. Appellant's arguments have persuaded us of error in the Examiner's rejections.

CLAIMS 13–16, 18–23, 27, 28, 30–32, 35, AND 36:

OBVIOUSNESS OVER UEHARA.

Appellant argues the claims as a group in view of the limitations of Claim 13. *See* Appeal Br. 15.

Claim 13 recites, *inter alia*:

[E]ach one of the server modules of the given server group establishes dedicated first data connections with I/O components of the given I/O group using only a single switch element of the given I/O group to directly connect a corresponding first point-to-point connection to a corresponding second point-to-point connection.

Claim 13 (Limitation [g]).

The Examiner finds this limitation is not taught by Uehara. Final Act.

4. The Examiner finds:

[I]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a single switch in place of two switches (e.g., using only a single switch 300e in place of both switches 300c and 300e), since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art.

*Id.* (citing *Ex parte Wu*, 10 USPQ2d 2031 (Bd. Pat. App. & Inter. 1989); *In re Kuhle*, 526 F.2d 553 (CCPA 1975)).

Appellant contends: using only a single switch 300e in place of both switches 300c and 300e does not result in an omission of an element, where the remaining elements perform the same function as before. Appeal Br. 16. Appellant argues in addition to failing to teach Limitation [g], Uehara further fails to teach Limitations [d], [f], and [h]. *Id.* Specifically, with respect to Limitation [d], Appellant contends active servers 100a through 100d and the standby servers 110e and 110f are not coupled directly to a switch element of a given I/O group, i.e. the I/O side switches 300e or 300f. *Id.*

Appellant contends:

In order to maintain the same functionality as provided in the original system disclosed in Figure 25 of Uehara, the skilled person would have to provide four connections between the “left” switch 300e and the “right” switch 300f. This is due to the fact that the original system architecture of Uehara allows two cross-connections from each of the server side switches 300c and 300d to each of the I/O side switches 300e and 300f, effectively allowing up to two dedicated data connections from the active servers 100a to 100c to any of the I/O devices connected to the I/O side switch 300f. Inversely, the system disclosed by Uehara also discloses up to two cross-connections from the servers 100d, 100e and 100f to any of the I/O devices connected to the left I/O side switch 300e. Such a functionality can only be implemented by providing at least four independent point-to-point connections between the left and right switches 300e and 300f.

Appeal Br. 18–19. Appellant argues:

Moreover, the applicant notes that the required 3x4x8 port switches of such a *hypothetical*, vertically combined system would greatly increase the complexity of the switch elements. Not only would they result in switches having a great number of ports, but it would also result in a significantly more

complicated internal switching circuitry for providing five parallel channels per switch, each with a large number of independent data lanes in case of PCI express connections.

Appeal Br. 19.

The Examiner does not respond to Appellants analysis of the Examiner's proposed modification of Uehara. Rather, the Examiner finds: "[t]he only modification of the Uehara system would be omitting the switch 300e. As stated in the Final Office action (see page 4), this modification is supported by relevant case law." Ans. 3; *see* Final Act. 4 (citing *Kuhle*, 526, F.2d 553).

*Kuhle* found a prior art switch, and its function, could be omitted where the deleted function was provided by other members. *See Kuhle*, 526 F.2d at 555.

Appellant argues with evidence that the Examiner's proposed modification would result in the omission of a claimed function. *See* Appeal Br. 18–26. Rejections based on obviousness must be supported by "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (citation omitted) (quoted in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007)). The Examiner does not substantively reply to Appellant's argument. Here, the Examiner has not provided an "articulated reasoning with some rational underpinning" to support modifying Uehara. Rather, the Examiner merely states: "this modification is supported by relevant case law." Ans. 3. The Examiner merely speculates that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a single switch in place of two switches (e.g., using only a single switch 300e in place of both switches 300c and 300e)." Final

Act. 4. “The Patent Office . . . may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis.” *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967).

In view of the foregoing, we decline to sustain the rejection of Claims 13–16, 18–23, 27, 28, 30–32, 35, and 36 under 35 U.S.C. § 103(a).

CLAIM 29: OBVIOUSNESS OVER UEHARA AND FELTON.

Appellant contends Claim 29 is patentable in view of Claim 13.

Appeal Br. 31. The Examiner does not separately discuss Claim 29. *See Answer.*

In view of the foregoing, we decline to sustain the rejection of Claim 29 under 35 U.S.C. § 103(a).

CONCLUSION

In summary:

| Claims Rejected                     | 35 U.S.C. § | Reference(s)/Basis | Affirmed | Reversed                            |
|-------------------------------------|-------------|--------------------|----------|-------------------------------------|
| 13–16, 18–23, 27, 28, 30–32, 35, 36 | 103(a)      | Uehara             |          | 13–16, 18–23, 27, 28, 30–32, 35, 36 |
| 29                                  | 103(a)      | Uehara, Felton     |          | 29                                  |
| <b>Overall</b>                      |             |                    |          | 13–16, 18–23, 27–32, 35, 36.        |

REVERSED