# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 14/262,298 | 04/25/2014 | Marc A. Schaub | 8888-34500 | 2173 |

81310          7590          09/12/2019

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| ART UNIT | PAPER NUMBER |
|---|---|
| 2136 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 09/12/2019 | ELECTRONIC |

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PTOL-90A (Rev. 04/07)

*Ex parte* MARC A. SCHAUB, JEFFREY J. IRWIN,
and PETER F. HOLLAND
_____

Appeal 2018-002736
Application 14/262,298[1]
Technology Center 2100
_____

Before DEBRA K. STEPHENS, JASON V. MORGAN, and
JEREMY J. CURCURI, *Administrative Patent Judges*.

STEPHENS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1, 5–8, 12, 15, 19, and 20, which are all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

CLAIMED SUBJECT MATTER

According to Appellants, the claims are directed to a request aggregation with opportunism (Abstract). Claim 1, reproduced below, is exemplary of the claimed subject matter:

1. A display pipeline comprising:

_____

[1] According to Appellants, the real party in interest is Apple Inc. (App. Br. 2).

a plurality of requestors, wherein each requestor of the plurality of requestors has a corresponding threshold number of a plurality of requests to be aggregated before transmission of a request is permitted; and

logic configured to monitor a number of pending requests that have been aggregated corresponding to each of the plurality of requestors;

wherein in response to determining a first requestor of the plurality of requestors has reached its corresponding threshold number of requests:

> issue pending requests of the first requestors; and

> issue pending requests of one or more requestors of the plurality of requestors other than the first requestor, even though said one or more requestors have not aggregated their corresponding threshold number of requests.

## REFERENCE

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Wasserman            US 2003/0137528 A1            July 24, 2003

## REJECTION

Claims 1, 5–8, 12, 15, 19, and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Wasserman (Final Act. 2–4).

## ANALYSIS

Appellants contend their invention as recited in claims 1, 5–8, 12, 15, 19 and 20 is patentable over Wasserman (App. Br. 6–17). Appellants contend Wasserman fails to disclose "each requestor of the plurality of

requestors has a corresponding threshold number of a plurality of requests to be aggregated before transmission of a request is permitted" and "in response to determining a first requestor of the plurality of requestors has reached its corresponding threshold number of requests: . . . issue pending requests of one or more requestors of the plurality of requestors other than the first requestor, even though said one or more requestors have not aggregated their corresponding threshold number of requests," as recited in claim 1 and similarly recited in claims 8 and 15 (App. Br. 6–13; Reply Br. 3–9). Specifically Appellants argue Wasserman's queued pixel/ display data does not disclose aggregated requests, as recited in claim 1 (App. Br. 7–8; Reply Br. 3–4); and further, Wasserman does not disclose:

> in response to determining a first requestor of the plurality of requestors has reached its corresponding threshold number of requests: . . . issue pending requests of the first requestors; and issue pending requests of one or more requestors of the plurality of requestors other than the first requestor, even though said one or more requestors have not aggregated their corresponding threshold number of requests,

as recited in claim 1 (App. Br. 10–11; Reply Br. 4–9).

First, Appellants contend Wasserman discloses a queue used to store pixel data or display output data; however, "the queued pixel/display data of Wasserman is not equivalent to the aggregated <u>requests</u> as recited" (App. Br. 7; Reply Br. 4).

We are persuaded by Appellants' argument (App. Br. 7–8; Reply Br. 3–4) and in particular, find the Examiner has not sufficiently explained how Wasserman's "queued pixel/display data" discloses the aggregated "requests" as claimed.

The Examiner points to several descriptions in Wasserman including Figures 7, 8, 12A, and B; and paragraphs 115–122 and 140–144 (Final Act. 3). The Examiner then finds Wasserman's descriptions disclose "requests for display information is asserted based on actual need which is dependent upon reaching a certain queue threshold of request in the queue. When the threshold is met there is an aggregation of requests in the queue" (*id.*). The Examiner does not identify the particular description, or elements therein, relied upon. Paragraph 115 of Wasserman describes:

> [R]equests for display information are asserted by one or more channels . . . In another embodiment, the channel may begin asserting requests when the level of a display information queue for that channel drops below a certain threshold. For example, the channel may assert a request if the level of its display output queue drops below half full

(Wasserman ¶ 115; *see* Final Act. 3; Ans. 3; *see also* App. Br. 5 (quoting Wasserman ¶ 115)). Thus, the Examiner seems to find Wasserman's "channel" discloses the recited "requestor" and Wasserman's "output data in queue" describes the aggregated "a plurality of requests" as claimed.

In the Answer, the Examiner determines "the term 'aggregated,' which means to collect or gather[, ] does not exclude collecting a number of requests that fall below a threshold" (Ans. 3). According to the Examiner, the recited limitation "merely states that a number of requests must be aggregated that meet a corresponding threshold number" (*id.*). The Examiner, however, does not set forth with specificity where Wasserman discloses "each requestor of the plurality of requestors has a corresponding threshold number of a plurality of requests to be aggregated *before transmission of a request is permitted*," as recited in claim 1 and as commensurately recited in claims 8 and 15. Rather, Wasserman discloses

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"the channel may begin asserting requests when the level of a display information queue for that channel drops below a certain threshold (Wasserman ¶ 115). Absent any detailed explanation, we are left to speculate as to what the Examiner is referring to when finding Wasserman discloses "requests for display information is asserted based on actual need which is dependent upon reaching a certain queue threshold of request in the queue" as asserted by the Examiner (Final Act. 3). We will not speculate.

Appellants further contend Wasserman does not disclose "in response to determining a first requestor of the plurality of requestors has reached its corresponding threshold number of requests: . . . issue pending requests of the first requestors; and issue pending requests of one or more requestors of the plurality of requestors other than the first requestor, even though said one or more requestors have not aggregated their corresponding threshold number of requests" as recited in claim 1 (App. Br. 10–11; Reply Br. 4–9).

The Examiner finds:

Requests are forwarded by the arbiter to a frame buffer if it has less than a particular threshold of data in its display queue (needy). Further, the system of Wasserman et al. will try to avoid accessing the same memory banks consecutively and will instead forward a request from a different requestor targeting a different memory bank even if it isn't needy (below threshold)

(Final Act. 3).

According to Appellants, Wasserman describes "issuing a request for data when an amount of pixel/display data in a queue falls below a threshold level (i.e., based on need)" (App. Br. 11; Reply Br. 4). In the Answer, the Examiner finds "the arbiter can attempt to avoid accessing the same memory banks consecutively instead of only using neediness as a parameter and therefore requestors can issue requests even if they are not considered needy

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(meet the threshold)" (Ans. 4). The Examiner has not, however, set forth with specificity, nor do we readily find, how Wasserman describes that "in response to determining a first requestor of the plurality of requestors *has reached its corresponding threshold number of requests*: . . . issue pending requests . . ." Indeed, the Examiner indicates Wasserman discloses issuing a request when the data in queue falls *below a threshold number*. The Examiner has not sufficiently explained how Wasserman discloses that in response to determining a first requestor of the plurality of requestors *has reached* its corresponding threshold number of requests: . . . issuing pending requests of the first requestor; and issuing pending requests of one or more requestors of the plurality of requestors other than the first requestor, even though said one or more requestors *have not* aggregated their corresponding threshold number of requests (App. Br. 10–11; Reply Br. 4–9). In particular, the Examiner has not sufficiently explained how the "arbiter" is able to monitor the threshold number of requests of a particular requestor and other requestors, and issue requests of the requestor that meets the threshold number of requests and also issue requests of other requestors even when the other requestors do not have threshold number of requests, as recited in claim 1 and commensurately recited in claims 8 and 15.

Accordingly, we are persuaded the Examiner fails to show the Wasserman discloses the limitations as recited in independent claim 1 and commensurately recited independent claims 8 and 15, not separately argued. Therefore, we do not sustain the rejection of claims 1, 8, and 15 under 35 U.S.C. § 102(a)(2) as being anticipated by Wasserman.

Therefore, we are persuaded by Appellants that Wasserman fails to anticipate independent claims 1, 8, and 15. The remaining claims depend

directly or indirectly from independent claims 1, 8, and 15; therefore, these claims fall with their respective independent claims. Because we agree with at least one of the arguments advanced by Appellants, we need not reach the merits of Appellants' other arguments (Ans. 3–5). As a result, we do not find Wasserman discloses claims 1, 5–8, 12, 15, 19, and 20 under 35 U.S.C. § 102(a)(2).

## DECISION

For the reasons above, we reverse the Examiner's rejection of claims 1, 5–8, 12, 15, 19, and 20 under 35 U.S.C. § 102 as unpatentable over Wasserman.

## REVERSED