Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JACK BENKUAL,
and IAN G. COLLOFF

Appeal No. 96-1229
Application 08/104,819[1]

ON BRIEF

Before THOMAS, FLEMING and LEE, Administrative Patent Judges.

LEE, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 5-10. Claims 1-4 have been canceled. No claim has been allowed.

**References relied on by the Examiner**

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| Pagé et al. (Pagé) | Patent 5,329,619 | July 12, 1994 (filed Oct. 30, 1992) |
| Johnson et al. (Johnson) | Patent 5,317,715 | May 31, 1994 |

[1] Application for patent filed August 10, 1993.

(filed July 10, 1992)

**The Rejections on Appeal**

Claims 5-10 stand finally rejected under 35 U.S.C. § 103 as being unpatentable over Pagé in view of Johnson.

**The Invention**

The invention is directed to an apparatus and method for inter - [data processing] node communication, using two message queues, one in each data processing node. When sending a message to another node, the sender node puts the message into the local message queue, and when receiving a message from another node, the receiving node performs a read from the message queue in the other node. Claim 6 further recites a head pointer means in each node, which points to the head of the message queue in the other node and a tail pointer means in each node, which points to the tail of the message queue in the same node.

The applicants have grouped claims 5, 7, 9 and 10 together as one group, and claims 6 and 8 together as another, for purposes of this appeal. Representative claims 5 and 6 are reproduced below:

5. A data processing system comprising:

(a) a first data processing node, including first memory means for holding a first queue of messages,

(b) a second data processing node, including second memory means for holding a second queue of messages, and

(c) an inter-node network interconnecting said first data processing node to said second data processing node,

(d) said first data processing node further comprising:

(i) first message send means for writing messages, destined for said second data processing node, into said first queue of messages, and

(ii) first message receive means for performing remote reads of said second memory means, by way of said inter-node network, to read messages from said second queue of messages,

(e) and said second data processing node further comprising:

(i) second message send means for writing messages, destined for said first data processing node, into said second queue of messages, and

(ii) second message receive means for performing remote reads of said first memory means, by way of said inter-node network, to read messages from said first queue of messages.

6. A data processing system comprising:

(a) a first data processing node, including first memory means for holding a first queue of messages,

(b) a second data processing node, including second memory means for holding a second queue of messages, and

(c) an inter-node network interconnecting said first data processing node to said second data processing node,

(d) said first data processing node further comprising:

(i) first tail pointer means for pointing to a tail location in said first queue of messages,

(ii) first head pointer means for pointing to a head location in said second queue of messages,

(iii) first message send means for using said first tail pointer means to write a message, destined for said second data processing node, into said tail location in said first queue of messages, and

(iv) first message receive means for performing a remote read of said second memory means, by way of said inter-node network, using said first head pointer means, to read a message from said head location in said second queue of messages, and

(e) said second data processing node further comprising:

(i) second tail pointer means for pointing to a tail location in said second queue of messages,

(ii) second head pointer means for pointing to a head location in said first queue of messages,

(iii) second message send means for using said second tail pointer means to write a message, destined for said first data processing

node, into said tail location in said second queue of messages, and

(iv) second message receive means for performing a remote read of said first memory means, by way of said inter-node network, using said second head pointer means, to read a message from said head location in said first queue of messages.

**Opinion**

We do not sustain the rejection of claims 5-10 as being unpatentable over Pagé and Johnson.

A reversal of the examiner's rejection here is not an affirmative indication that the claims on appeal are patentable over prior art, even that cited and applied by the examiner. We focus only on the examiner's rationale and stated position for rejecting these claims.

With regard to claim 6, the examiner erred in finding (answer at 5) that Pagé discloses or suggests use of a message queue top pointer located in a different node from the node in which the message queue resides. The examiner stated:

> Pagé clearly shows the use of a client with a pointer to a conversation control block (CCB) chain including a CCB for a conversation with a server; and the server with a pointer to a CCB chain including a CCB for the same conversation and each participant's CCB for the conversation with a pointer to the CCB of the other participant for that

> conversation; and the use of each participant's CCB with a pointer to a head message queue (e.g., fig. 7E and column 24).

But the applicants are correct that in Pagé the CCB chains and the corresponding message queues are all within the broker processing node. There is no indication that any message queue or CCB chain referred to by the examiner is located within a client or server node. The examiner has made no reasonable demonstration as to why a conversation control block CCB containing the head pointer to a message queue and its corresponding message queue are located in different data processing nodes as is required by applicants' claim 6. The fact that a client's CCB contains a partner CCB pointer leading to the CCB for the server on the other side of the broker which is communicating with the client does not mean the client's CCB is located in the client node and the server's CCB is located in the server node. It is apparent that the CCB's and message queues are tools used by the interconnecting broker and thus are contained within the broker data processing node. See Pagé column 19, line 58, to column 20, line 2, and column 24, lines 22-24. We agree with the following statement of the applicants (Reply at 2):

> There is no suggestion in Pagé that the conversation control blocks (CCB) and message queues (MQ) would be held in different processing nodes. On the contrary, it is clear from Pagé (column 19, last paragraph - column 20, first paragraph) that the CCBs and MQs are part of the data maintained by the "broker" and hence would all be located in the same node as the broker itself.

See also Pagé's Figure 6 and column 6, lines 6-14.

In a supplemental answer, the examiner responds by stating that in Pagé the client head pointer is held in a different "location" from a message queue to which it points. But of course the pointer is held in a different physical location from the message queue to which it points. It cannot occupy the same physical space as the message queue. What claim 6 requires, however, is that the message queue and the head pointer pointing to the message queue be held in different data processing nodes. In light of the applicants' specification, a data processing node would be a facility like the server, client, or broker in the system of Pagé and not simply a physical memory space.

While it may be true that a pointer can work just as well whether the message queue it points to is located in the same or a different processing node, the examiner has articulated no reasonable motivation, stemming from Pagé, for locating the

message queue in a different processing node. The mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), cert. denied, 117 S.Ct. 80 (1996).

For the foregoing reasons, we do not sustain the rejection of claims 6 and 8.

Claim 5 requires a first data processing node containing a first message queue and a second data processing node containing a second message queue. Messages from the first node to the second node are written into the message queue in the first node to be read remotely by the second node, and messages from the second node to the first node are written into the message queue in the second node to be read remotely by the first node.

The applicants correctly point out (Brief at 4) that in Pagé all the message queues are contained in the same data processing node, i.e., the broker node interconnecting the server nodes and client nodes, even though there is a separate message queue for each server and client. In that connection, the applicants correctly point out that claim 5 requires that the means in each data processing node for performing the remote reading is located in a processing node different from the processing node containing the message queue to be read. The examiner explicitly acknowledges that Pagé does not show such remote reading as claimed by the applicants (answer at 4).

Nevertheless, the examiner states (answer at 4): "Johnson shows the use of a remote read of a remote bus (e.g., column 9)." In the supplemental answer on page 2, the examiner further states in connection with the remote read feature that Pagé suggests the use of remote procedure call between remote participants in the network. But neither Johnson's general reference to reading from a remote bus nor Pagé's disclosure of a remote procedure call involves the use of message queues. For instance, Pagé's remote procedure call

indicates only that the called procedure resides in a different processing node, and Pagé specifically describes that for the remote procedure call there is no connection or communication between the client and the server (column 5, lines 56-59).

Johnson's general teaching that data on a bus can be read remotely and Pagé's teaching of a remote procedure call do not reasonably suggest putting Pagé's message queues in different data processing nodes and having the apparatus or facility for reading a message queue located in a different processing node than the particular processing node containing the message queue. Both of those features are required by applicants' claim 5. There is also insufficient logical connection between Johnson's data bus and Pagé's message queues. Furthermore, in Pagé, it is the broker node itself which contains the pointers to the message queues which are also contained within the broker node. The examiner has not articulated a meaningful basis for concluding that applicant's claim 5 would have been prima facie obvious over Pagé and Johnson.

For the foregoing reasons, we do not sustain the rejection of claims 5, 7, 9 and 10.

Conclusion

The rejection of claims 5-10 under 35 U.S.C. § 103 as being unpatentable over Pagé and Johnson is reversed.

**REVERSED**

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| JAMES D. THOMAS<br>Administrative Patent Judge | ) | |
| MICHAEL R. FLEMING<br>Administrative Patent Judge | ) | BOARD OF PATENT<br>APPEALS AND<br>INTERFERENCES |
| JAMESON LEE<br>Administrative Patent Judge | ) | |

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