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14/134,828	12/19/2013	Zachary Bonig	4672-13022AUS	5883

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EXAMINER
GREGG, MARY M

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PTOL-90A (Rev. 04/07)

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte ZACHARY BONIG, HAIFENG ZHENG, DON MENDELSON,
MIKE DONAGHY, and AKRAPONG LIN

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Appeal 2019-002550
Application 14/134,828
Technology Center 3600

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Before NORMAN H. BEAMER, ADAM J. PYONIN, and GARTH D.
BAER, *Administrative Patent Judges*.

BAER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's

final rejection of claims 1–21, which are all pending claims. Appeal Br. 4.

We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

BACKGROUND

A. The Invention

Appellant's invention is directed to "efficient processing of a plurality

of electronic message packets communicated to an application via a network

from a plurality of message sources." Abstract. Independent claim 1 is

representative and reproduced below, with emphasis added to disputed

elements:

> 1.   A method for facilitation of efficient processing of
> a plurality of electronic message packets communicated to
> an application via a network from a plurality of message
> sources using a communications protocol which organizes
> received packets based on origin, the method comprising:
>   receiving, by a network interface coupled with the
> network, each of the plurality of electronic message
> packets from the network; and
>   storing, by a processor of the network interface,
> upon receipt thereof by the network interface from the
> network, each of the received electronic message packets
> in a common buffer, in which ***all received packets are
> stored, in an order of receipt with respect to others of the
> received packets irrespective of which message source of***

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37
C.F.R. § 1.42. Appellant identifies Chicago Mercantile Exchange, Inc. as
the real party in interest. Appeal Br. 2.

> *the plurality of message sources each of the received electronic message packets originated from*; and
>
> communicating the stored electronic message packets to the application from the common buffer as stored therein such that *the application does not receive a stored electronic message packet before the application receives a previously received stored electronic message packet*.

Appeal Br. 9 (Claims Appendix).

B.   The Rejections on Appeal

The Examiner rejects claims 1, 2, 4, and 7 under 35 U.S.C. § 103 as unpatentable over Pope (US 2012/0155256 A1; June 21, 2012) and Fraser (US 4,499,576; Feb. 12, 1985). Final Act. 5.

The Examiner rejects claim 3 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, and Rooney (US 2011/0145124 A1; June 16, 2011). Final Act. 10.

The Examiner rejects claim 5 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, and Ferguson (US 7,215,637 B1; May 8, 2007). Final Act. 12.

The Examiner rejects claim 6 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, Ferguson, and Short (US 5,633,865; May 27, 1997). Final Act. 13.

The Examiner rejects claims 8, 9, 11, and 14 under 35 U.S.C. § 103 as unpatentable over Pope and Fraser. Final Act. 14.

The Examiner rejects claim 10 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, and Rooney. Final Act. 20.

The Examiner rejects claim 12 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, and Ferguson. Final Act. 21.

The Examiner rejects claim 13 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, Ferguson, and Short. Final Act. 22.

The Examiner rejects claims 15, 16, 18, and 21 under 35 U.S.C. § 103 as unpatentable over Pope and Fraser. Final Act. 24.

The Examiner rejects claim 17 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, and Rooney. Final Act. 30.

The Examiner rejects claim 19 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, and Ferguson. Final Act. 31.

The Examiner rejects claim 20 under 35 U.S.C. § 103 as unpatentable over Pope, Fraser, Ferguson, and Short. Final Act. 33.

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments. Arguments Appellant could have made but chose not to make are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

A.   Obviousness Rejection of Claim 1

Appellant argues that "[t]he problems with the prior art is that the prior art teaches multiple FIFO [first-in-first-out] queues which limits the ability of the prior art to track order" and that

> [b]y dividing the packets into multiple queues (FIFO or not)
> both Pope and Fraser lose the ability to store the packets "in an
> order of receipt with respect to others of the received packets
> irrespective of which message source of the plurality of
> message sources each of the received electronic message
> packets originated from." Neither Pope or Fraser can
> distinguish whether a packet in queue A was received before a
> packet in queue B. Pope and Fraser disclose first in first out, but
> limited to the specific queues.

Reply Br. 3 (citing Pope ¶ 65; Fraser Abstract).

We are persuaded by Appellant. The Examiner finds, and we agree, that "Pope makes clear that all the buffers share the same address space and therefore, are a common memory." Ans. 4 (citing Pope ¶¶ 53, 56). The Examiner further finds, and we agree, that Pope teaches

> [t]he memory manager defines virtual FIFO queues in common memory 206 by storing at a descriptor table a representation of the sequence of buffers that make up each queue. Each ingress port of the NIC has at least one corresponding virtual FIFO queue.

Final Act. 6 (citing Pope ¶ 65). Pope's system requires that "[e]ach ingress port of the NIC [network interface device] has at least one corresponding virtual FIFO queue." Independent claim 1 requires the network has "a *plurality* of message sources," which in turn requires that a system using Pope's teachings (and corresponding to claim 1) must have at least *two* ingress ports and *two* virtual FIFO queues, corresponding to one virtual FIFO queue for each of two message sources.

However, we agree with Appellant that Pope and Fraser teach "multiple FIFO queues which limits the ability of the prior art to track order." Reply Br. 3. In Pope and Fraser, message receipt order is maintained *within* the FIFO queues, but neither Pope nor Fraser teaches or suggests that message receipt order is maintained for all messages. Independent claim 1 requires both

(1) "all received packets are stored, in an order of receipt with respect to others of the received packets irrespective of which message source of the plurality of message sources each of the received electronic message packets originated from", and

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(2) "communicating the stored electronic message packets to the

application from the common buffer as stored therein such that the

application does not receive a stored electronic message packet before

the application receives a previously received stored electronic

message packet."

The Examiner has not shown how Pope and Fraser, when combined, teach

or suggest how packets are received by the application in this manner,

because neither Pope's "priority level" (*see* Pope ¶ 68), nor Fraser's

"identification number" (*see* Fraser 1:45–59) appears to contain information

regarding the timing of a message's initial entrance into a queue.

Accordingly, we are constrained by the record to reverse the

Examiner's rejection of independent claim 1, as well as independent claims

8 and 15 commensurate in scope, and all dependent claims.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 4, 7–9, 11, 14–16, 18, 21	103	Pope, Fraser		1, 2, 4, 7–9, 11, 14–16, 18, 21
3, 10, 17	103	Pope, Fraser, Rooney		3, 10, 17
5, 12, 19	103	Pope, Fraser, Ferguson		5, 12, 19
6, 13, 20	103	Pope, Fraser, Ferguson, Short		6, 13, 20

Overall Outcome				1–21

REVERSED