

The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CARLOS FRANCISCO FUENTE
AND WILLIAM JAMES SCALES

Appeal 2007-1779
Application 10/447,351
Technology Center 2100

Decided: August 14, 2007

Before JAMES D. THOMAS, KENNETH W. HAIRSTON,
and JOHN A. JEFFERY, *Administrative Patent Judges*.
HAIRSTON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 5 to 16. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Appellants have invented a method and apparatus for providing control on metadata within a network of storage controllers. One of the storage controllers is designated as an owner storage controller, and the remainder of the storage controllers is designated as client storage controllers. The owner storage controller owns metadata controlling all input/output (I/O) operations associated with a region of storage. In response to an I/O request to one of the client storage controllers, the owner storage controller suspends the I/O request, and determines whether or not the region of storage has already been copied. If the region of storage has been copied, then the owner storage controller unpends the I/O request for processing by the client storage controller. If the region of storage has not been copied, then the owner storage controller places a lock against the metadata associated with the region of storage, copies data within the region of storage, and releases the lock record to process the I/O request (Specification 6, 9, and 19).

Claim 5 is representative of the claims on appeal, and it reads as follows:

5. A method for providing control on metadata within a network of storage controllers, said method comprising:

designating one of said storage controllers as an owner storage controller, wherein said owner storage controller owns metadata controlling all input/output (I/O) operations associated with a region of storage;

designating remaining of said storage controllers as client storage controllers;

in response to an I/O request to one of said client storage controllers, suspending said I/O request by said one client storage controller;

determining, by said owner storage controller, whether or not said region of storage has already been copied;

in a determination that said region of storage has been copied, suspending said I/O request by said one client storage controller to process said I/O request; and

in a determination that said region of storage has not been copied, placing a lock record against said metadata associated with said region of storage; copying data within said region of storage by said owner storage controller; and releasing said lock record to process said I/O request.

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

Franklin	US 6,061,770	May 9, 2000
Jiang	US 6,453,354 B1	Sept. 17, 2002
Pittelkow	US 7,003,688 B1	Feb. 21, 2006 (filed Jun. 28, 2002)

The Examiner rejected claims 5 to 16 under 35 U.S.C. § 103(a) based upon the teachings of Pittelkow, Franklin, and Jiang.

Appellants contend that the applied references, whether considered separately or in combination, do not teach or suggest all of the features of the claimed invention (Br. 6 and 7). Appellants additionally contend that the Examiner has used impermissible hindsight to pick and choose among disclosures in the prior art to make the obviousness rejection (Reply Br. 3).

ISSUE

Does the applied prior art teach or would have suggested to the skilled artisan all of the features of the claimed invention?

FINDINGS OF FACT

As indicated *supra*, Appellants describe a method and apparatus in which an owner storage controller controls all input/output (I/O) operations associated with a region of storage when an I/O request is made to a client storage controller. The owner storage controller determines whether or not the region of storage has already been copied. If the region of storage has already been copied, then the owner storage controller unpends the I/O request so that it can be processed by the client storage controller. If the region of storage has not been copied, then a lock is placed against the metadata associated with the region of storage so that data can be copied within the region of storage. Thereafter, the lock is released so that the I/O request may be processed by the client storage controller.

In a network of storage controllers, Pittelkow describes a master controller that operates to control server access to a storage space (col. 4, ll. 12 and 13). The other controllers in the network operate as slave controllers (col. 4, ll. 14 and 15). “The master controller functions as a storage controller to service I/O requests to connected disks and servers” (col. 30, ll. 18 and 19).

Franklin describes a method of backing computer system data in a backing store container that is of a smaller storage size than a read-write on-line container (Figures 1 and 2; Abstract; col. 1, ll. 7 to 11; col. 2, ll. 39 to 42). The Franklin method permits “reliable data mapping between copied

blocks of data in the smaller backing store container 212 with original blocks of data in the larger read-write container 210” (col. 5, ll. 7 to 11). When a user issues an input I/O request to the file system 110, the file system translates the request into an I/O request bound for a read-write container 210 in I/O subsystem 112 (col. 5, l. 65 to col. 6, l. 3). A container manager 201 in the I/O subsystem 112 checks to see if the I/O request is a read request or a write request (col. 6, ll. 3 to 7). If it is a write request, the container manager 201 checks a modified-bit-map table 214 to determine if the read-write on-line block where a file is stored has been modified (col. 6, ll. 7 to 11). If the block has been modified, then the I/O request is forwarded to read-write container driver 210 (col. 6, ll. 11 to 13). If the block has not been modified, then the container manager 201 copies the unmodified block from the read-write container 210 to the backing store container 212 (col. 6, ll. 14 to 17).

Jiang describes “request lock to owner controller for metadata and release lock after commit (Figures 20-21, column 30, lines 41-67, column 31, lines 1-15)” (Answer 5).

PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The Examiner’s articulated reasoning in the rejection must possess a rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”

In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

In an obviousness rejection, it is impermissible “to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *In re Wesslau*, 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965).

ANALYSIS

The Examiner contends that Pittelkow teaches “suspending said I/O request by said one client storage controller (column 30, lines 38-39)” (Answer 4). The referenced portion of Pittelkow merely states that “[t]he slave controller functions as a storage controller to service I/O requests to connected disks and servers.” Accordingly, we agree with the Appellants’ argument that the claimed “suspending said I/O request” step is not taught by Pittelkow (Br. 5). Neither Franklin nor Jiang teaches such a “suspending” step in their respective operations.

With respect to the claimed step of determining “whether or not said region of storage has already been copied,” we find that the determination in Franklin of whether or not a block of data has been modified is not the same as a determination of whether or not a region of storage has been copied.

Jiang describes several types of locking operations, but not in response to “a determination that said region of storage has not been copied” as set forth in the claims on appeal.

CONCLUSION OF LAW

In the obviousness rejection, the Examiner used impermissible hindsight reconstruction to pick and choose among disclosures in the applied prior art references. Obviousness has not been established by the Examiner because the applied references neither teach nor would have suggested to the skilled artisan all of the method steps and apparatus limitations.

DECISION

The obviousness rejection of claims 5 to 16 is reversed.

REVERSED

KIS

DILLON & YUDELL, L.L.P.
8911 N CAPITAL OF TEXAS HWY
SUITE 2110
AUSTIN, TX 78759