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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TAKESHI YAMAZAKI, TSUTOMU HORIKAWA,
KENICHI MURATA, and MICHAEL NORMAN DAY

Appeal 2011-003349
Application 11/341,702
Technology Center 2100

Before JOSEPH L. DIXON, ST. JOHN COURTENAY III, and
CARLA M. KRIVAK, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Patent Examiner finally rejected claims 1-3, 5-13, and 15-28. Appellants appeal therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

INVENTION

This invention relates to methods and apparatus for transferring data within a multi-processing system. (Spec. 1). Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A method, comprising:

[a] logically-partitioning respective processors of a multi-processing system into a plurality of resource groups;

[b] associating respective ranges of a shared memory of the multi-processing system with respective sets of cache memory lines, the respective sets of cache memory lines being resources;

[c] receiving a request for one or more of the resources from a given one of the processors;

[d] time-allocating some or all of the requested resources among the resource groups as a function of a predetermined algorithm and based upon whether such resources are available; and

[e] dynamically changing the association of the ranges with the respective sets of cache memory lines as a function of the predetermined algorithm,

[f] wherein the receiving a request and time-allocation of the requested resources is automatically carried out and not instructed directly by a user of the multi-processing system.

REJECTION(S)

R1. The Examiner rejected claims 1, 2, 5-13, 15, 17, 19-21, and 24-28 as obvious under 35 U.S.C. § 103(a) over the combined teachings and suggestions of Hoffman (U.S. Pat. App. Pub. No. 2005/0216716 A1), Hahn (U.S. Pat. App. Pub. No. 2005/0198102 A1), and Kirk (U.S. Pat. 5,875,464).

R2. The Examiner rejected claim 16 as obvious under 35 U.S.C. § 103(a) over the combined teachings and suggestions of Hoffman, Hahn, and Toda (U.S. Pat. App. Pub. No. 2002/0029301 A1), and official notice taken by the Examiner.

R3. The Examiner rejected claims 3, 18, 22, and 23 as obvious under 35 U.S.C. § 103(a) over the combined teachings and suggestions of Hoffman, Hahn, and Suzuoki (U.S. Pat. App. Pub. No. 2002/0138701 A1).

PRINCIPLES OF LAW

Obviousness

A claimed invention is unpatentable “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a).

Where “a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the

field, the combination must do more than yield a predictable result.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

Automation

A claimed invention is not patentable if it merely automates a prior art process. Broadly providing an automatic way to replace a manual activity accomplishing the same result is not sufficient to distinguish an automated process over the prior art. *In re Venner*, 262 F.2d 91, 95 (CCPA 1958). An improved product in the art is obvious if that “product [is] not [one] of innovation but of ordinary skill and common sense.” *KSR*, 550 U.S. at 421.

FINDINGS OF FACT

1. Hoffman discloses:

[0009] Thus, there is a need for a *mechanism in partitioned computer systems to provide additional I/O resources which are easily expandable to meet system user needs*. The present invention addresses the aforementioned needs and solves them with additional advantages as expressed herein.

(¶ [0009]; emphasis added).

2. Hoffman discloses:

[0051] In one embodiment, a balance between any two partitions in a partitioned computer system may be performed dynamically. In such an embodiment, a user would initiate an I/O balancing command from one partition specifying another partition to which the balance of I/O allotment is to be shared.

(¶ [0051]).

ANALYSIS

R1.

Issue: Under § 103, did the Examiner err in combining the cited references relied upon in the rejection R1?

Appellants contend:

To modify the system of the *primary*, Hoffman reference to include automated re-allocation *without user intervention* (as in the *secondary*, Hahn reference) would change the principle of operation of the Hoffman system, and such modification would render the Hoffman system inoperable for its intended purpose - which is that a change in resource allocation is based on *user* requests and *user* initiation. This is not permitted under MPEP §2143.01.

(App. Br. 12).

The Examiner disagrees:

The principle of operation of Hoffman is allocation of resources. In the same field of endeavor, Hahn teaches the allocation of resources. Hoffman teaches that allocation of resources is in response to a user's request (Paragraph 46). . . . Hahn thus teaches the partitioning of resources in an automated mode, alleviating the administrator from manually reconfiguring the system by allowing the administrator, i.e. the user, to set objectives and constraints for dynamic resource partitioning (Paragraph 22). So, the user can still control the allocation of resources by setting the user's objectives and constraints. Once this is done, the dynamic reallocation of resources due to workload changes can be automatically achieved.

(Ans. 12).

We are not persuaded by Appellants' contention that "[t]he objective of the system of the Hoffman reference is to provide the user with control of the resource allocation, as clearly established by [0008], [0046], and [0051]

of the Hoffman reference." (App. Br. 10). Hoffman teaches that the invention's objective is to provide a "mechanism in partitioned computer systems to provide additional I/O resources which are easily expandable to *meet system user needs*," not provide user control. (FF1; emphasis added).

Furthermore, in Hoffman paragraph [0046], the user altering the initial allocation is optional, not required. (*See* ¶ [0046]). The initial resource allocation was set by Hoffman's system in Figure 2, step 235. (*See* ¶ [0044], ¶ [0046]; Fig. 2). This indicates that Hoffman's principle of operation does not require user control. (*Id.*).

In combining Hoffman's system/method for allocating computer resources (FF2; ¶ [0046], ¶ [0051]; Ans. 3) with Hahn's teaching of automatically allocating resources (¶ [0022]), Hoffman's principle of operation is not changed. Hoffman's method/system operates as intended (Ans. 3) with the initial "I/O balancing command" in the Examiner's combined Hoffman/Hahn method being issued *automatically* by Hahn's system (Hahn ¶ [0022], Ans. 3-4), instead of by a user. Therefore, there is no change in the principle of operation of Hoffman's system since there is no change in the operation of Hoffman's system when the initial "I/O balancing command" is sent by a user or by Hahn's system.

For these reasons, we find that combining Hoffman's system/method for allocating computer resources with Hahn's automatically allocating resources does not change Hoffman's principle of operation. *See In re Moutte* 686 F.3d 1322, 1332 (Fed. Cir. 2012) (finding *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959) inapplicable where the principle of operation of the primary Falk reference's optical crossbar array was not changed by substituting a crossbar array implemented with electrical wires.). Similarly,

we find Hoffman's principle of operation of allocating computer resources does not change when the initial "I/O balancing command" is initiated by Hahn's system, instead of by a user.

Moreover, we find that the substituting Hahn's automatically allocating resources for Hoffman's user initiated I/O balancing command is merely a substitution of one familiar element for another with the resultant combination yielding a predictable result. *See KSR*, 550 U.S. at 416. Further, merely automating Hoffman's manual user initiated I/O balancing command with Hahn's automatic process which accomplishes the same result is "not sufficient to distinguish an automated process over the prior art." *See In re Venner*, 262 F.2d 91, 95 (CCPA 1958).

For these reasons, we are not persuaded of Examiner error. Accordingly, we sustain the Examiner's obviousness rejection R1 of claims 1, 2, 5-13, 15, 17, 19-21, and 24-28.

R2 AND R3

Regarding the remaining rejections R2 of claim 16 and R3 of claims 3, 18, and 22-23, Appellants contend these claims are patentable by virtue of their dependency from their respective parent claims. However, we find no defects in the Examiner's findings as discussed above. Therefore, we sustain the Examiner's rejections of these claims.

DECISION

We affirm the Examiner's rejections of claims 1-3, 5-13, and 15-28 under § 103.

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Application 11/341,702

No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

Vsh