

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* ORI STERN and MENAHEM LASSER

---

Appeal 2008-0649  
Application 10/376,504  
Technology Center 2100

---

Decided: September 2, 2008

---

Before JOSEPH L. DIXON, JEAN R. HOMERE, and  
STEPHEN C. SIU, *Administrative Patent Judges*.

DIXON, *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 1, 3-14, 16, 18-48, and 50-57. We have  
jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

## BACKGROUND

Appellants' invention relates to efficient flash memory device driver. (Spec. 1). An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. A method whereby a host accesses a data storage device during execution of an application program, comprising the steps of:
  - (a) storing, in an executable memory of the host, a software device driver of the data storage device;
  - (b) initiating a first access of the data storage device, by the host executing code of said software device driver;
  - (c) while the data storage device satisfies said first access, continuing the execution of the application program, by the host, until a second access of the data storage device is required by the application program; and
  - (d) querying a success of said first access prior to said second access, by the host executing code of said software device driver.

## PRIOR ART

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

|          |                 |              |
|----------|-----------------|--------------|
| Shiota   | US 6,744,692 B2 | Jun. 1, 2004 |
| Miloicic | US 6,851,074 B2 | Feb. 1, 2005 |

Andrew S. Tanenbaum; Structured Computer Organization; Prentice Hall; Fourth Edition; 1999; Page 8.

Microsoft Computer Dictionary, Microsoft Press, Fourth Edition, 1999, Page 170.

#### REJECTIONS

Claims 1, 3-7, 9-13, 16, 18-22, 24-27, 29-30, 32-35, 37-39, 41-42, 44-46, 48, 50-54 and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota in view of Miloicic and further in view of Tanenbaum wherein Tanenbaum is solely used as an evidentiary reference.

Claims 8, 14, 23, 28, 31, 36, 40, 43, 47, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota in view of Miloicic and Microsoft Computer Dictionary, wherein the dictionary is used as an evidentiary reference.

Rather than reiterate the conflicting viewpoints of the Examiner and Appellants regarding the above-noted rejection, we refer to the Examiner's Answer (mailed May 23, 2007) for the reasoning in support of the rejections, and to Appellants' Brief (filed Dec. 29, 2006) and Reply Brief (filed Jun. 28, 2007) for the arguments thereagainst.

#### OPINION

In reaching our decision in this appeal, we have carefully considered Appellants' Specification and claims, the applied prior art references, and the respective positions articulated by Appellants and the Examiner. As a consequence of our review, we determine the following.

35 U.S.C. § 103(a)

Section 103 forbids issuance of a patent when '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.'

*KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007).

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *Id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. *KSR*, 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)). The Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

The Federal Circuit recently recognized that "[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (citing *KSR*, 127 S. Ct. 1727, 1739 (2007)). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined

device was “uniquely challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.” *Id.* (citing *KSR*, 127 S. Ct. at 1740-41).

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

With respect to independent claim 1, from our review of the Examiner's statement of the rejection it appears upon first review that the Examiner has made a proper initial showing of obviousness and sets forth reasoned explanations for the modifications. (Answer 3-6). Appellants argue that the Examiner has not shown the limitations in independent claim 14 elements (a), (b) and (d). (App. Br. 12). Appellants argue that any code of controller 4 of Shiota is executed by CPU 14 of controller 4 and not of the host 3. (App. Br. 12). We agree with Appellants and further find that the Examiner's line of reasoning with respect to the logical equivalents of any operation being performed by software or hardware is too broad sweeping with respect to the teachings of Shiota.

From our review of the teachings of Shiota, there is more to this intermediate control by CPU 14 with respect to the arbitration, buffering, and control of the data flow, which is not addressed in the Examiner's generalized substitution of a software component for hardware components. Here, the arbitration and buffering with respect to buffer memories 5, 20, and 22 must be controlled in some manner for proper data flow within the system. Here, the transfer of control from CPU 14 into a host 3 would not be as simple of a task as the Examiner infers in the stated rejection.

While we do agree with the Examiner's line of reasoning with respect to the substitution of software functionality for hardware functionality as a general proposition, we do not readily appreciate how the mere substitution without more explanation or modification with respect to the control of the data flow with regards to the various buffer memories would be effectuated by a mere incorporation of CPU 14 of controller 4 in into host 3. While we do not preclude the Examiner's ultimate conclusion, it is not readily apparent to us how the host 3 would interact with the various buffer memories, as described in Shiota, and what additional modifications would be required without the use of hindsight reconstruction.

Appellants argue that the evidence of Tanenbaum is directed to the equivalents (software and hardware) within the same device (App. Br. 14-16) wherein the Examiner extends the teachings or evidence of Tanenbaum to incorporate hardware from one device into a second device. We agree with Appellants that the teaching of equivalents between hardware and software is not as broad sweeping as the Examiner seems to imply in the rejection. Furthermore, we do not find that the Examiner has set forth a persuasive line of reasoning to modify the teachings of Shiota in the manner described by the Examiner. Therefore, we do not find that the Examiner has set forth the requisite initial showing of obviousness of independent claim 1 and its respective dependent claims.

With respect to independent claims 16, 32, and 44, while the language of each independent claim is slightly different, we do not find that the Examiner has set forth substantial evidence in the express teachings of the references applied or set forth convincing lines of reasoning as to why the

Appeal 2008-0649  
Application 10/376,504

claimed invention would have been obvious to one of ordinary skill in the art at the time the invention is made. Therefore, we do not find that the Examiner has set forth the requisite initial showing of obviousness of independent claim 1 and its respective dependent claims and cannot sustain the rejection of these claims.

#### CONCLUSION

In summary, we have reversed the rejection of claims 1, 3-14, 16, 18-48, and 50-57 under 35 U.S.C. § 103(a).

REVERSED

pgc

MARK M. FRIEDMAN  
C/O DISCOVEY DISPATCH , 9003 FLIRIN WAY  
UPPER MARLBORO, MD 20772