

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ANTHONY D. ANDREWS

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Appeal No. 97-4408  
Application 08/579,314<sup>1</sup>

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ON BRIEF

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Before THOMAS, KRASS, and FLEMING, Administrative Patent  
Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

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<sup>1</sup> Application for patent filed December 27, 1995.  
According to appellant, this application is a continuation of  
Application 08/404,941, filed March 15, 1995, now U.S. Patent  
5,590,276, issued December 31, 1996; which is a continuation  
of Application 07/818,039, filed January 8, 1992.

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This is a decision on appeal from the final rejection of claims 18 through 39, all of the claims pending in the application.

The invention pertains to failure-tolerant data storage systems. More particularly, the invention employs data storage units divided into logical groups with each group including a reserved area for storing system information and including an update table that contains various values indicative of which logical groups of disk drives were being synchronized when a power failure occurred.

Representative independent claim 18 is reproduced as follows:

18. A redundant storage array system comprising:
- a) a plurality of failure-independent data storage units divided into at least two logical groups, more than one of said data storage units in each logical group including a reserved area for storing at least system information, and including an update table for storing at least a first value for indicating an interruption in a process for updating and synchronizing the reserved areas of the data storage units of the logical groups;
  - b) a controller for completely updating the reserved areas in a current logical group including said first value for indicating an interruption in a process before any updating may commence on the reserved areas within a next logical group to ensure that the reserved areas of either said current logical group or said next logical

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group may be used as a reference to update and synchronize the reserved areas in data storage units of another logical group, based upon said first values of said current and next logical groups.

The examiner relies on the following references:

Katz et al.	5,195,100	Mar. 16, 1993
(Katz)		(filed Mar. 2, 1990)
Williams (EP)	482,853 A2	Apr. 29, 1992
		(filed Oct. 18, 1991)

Claims 18 through 39 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1 through 10 and 18 of copending application Serial No. 08/404,941.<sup>2</sup>

Claims 18 through 22, 28 through 33 and 39 stand further rejected under 35 U.S.C. § 103 as unpatentable over Katz in view of Williams.

Reference is made to the brief and answer for the respective positions of appellant and the examiner.

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<sup>2</sup> Since this application has now matured into U.S. Patent No. 5,590,276, it would appear that the double patenting rejection is no longer "provisional," in nature.

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OPINION

Turning first to the rejection of claims 18 through 39 under the obviousness-type double patenting doctrine, we will summarily sustain this rejection since no substantive arguments thereagainst are offered by appellant.<sup>3</sup>

We now turn to the rejection of claims 18 through 22, 28 through 33 and 39 under 35 U.S.C. § 103.

We will sustain the rejection under 35 U.S.C. § 103.

Katz discloses a redundant storage array that stores update data in order to determine the point at which an interrupt occurred. However, as recognized by the examiner, Katz does not disclose an update table for each reserved area. Instead, Katz employs a single non-volatile memory 413 which stores a time stamp used for recovery of data after power restoration. In our view, it would have been equally obvious to store such update information (and the time stamp information of Katz would clearly constitute "update" information) in either a single, common non-volatile memory,

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<sup>3</sup> The rejection can be obviated by the filing of a proper terminal disclaimer which appellant has offered to file upon allowance of the application [see page 10 of Paper No. 8, filed January 14, 1997].

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as in Katz, or in the reserved area of each data storage unit. As pointed out by the examiner, at page 5 of the answer, page 3, lines 4-15 of the instant specification, in describing the prior art, recites that it was well known to allocate reserved areas in each data storage unit to store system configuration information. Thus, artisans would have been well aware of the capability to store various types of system information, including time stamp, or other kinds of update information, in these reserved areas.

With regard to the feature of updating the reserved area for each logical group before updating the reserved area for the next logical group, we agree with the examiner that the explicit teaching of Williams of updating "serially, thereby protecting against all volumes becoming corrupted at once" [Williams abstract] would have made this feature obvious to employ in Katz for the stated purpose set forth in Williams. If updates were performed simultaneously, i.e., in parallel, rather than serially, a power interruption would make it difficult, if not impossible, to resurrect the data in storage just prior to power interruption.

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Based on the problems recognized by the prior art, as recited in the background section of the instant specification, common sense would have motivated the artisan with a reason for providing a serial update in each data storage unit so that in case of a power interruption, data recovery may be had by reference to those units which had not yet been updated. The examiner has merely buttressed this reasoning by offering Williams as evidence of such a common sense approach.

While appellant states that "both Katz and Williams uses [sic, use] time-stamp-comparison as a basis for a recovery process" [brief-page 18, emphasis in the original], and argues [brief-page 21] that the artisan reading Katz and Williams would not come away "with any other teaching than the use of time stamp comparison to determine how to recover from a power failure," appellant never explains why such a time stamp comparison is not an "update table," as broadly claimed. After all, both the time stamp information of the prior art and appellant's "update table" contain information therein which will permit data recovery after a power interruption.

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Appellant argues, at page 21 of the brief, that the flag field of Katz "is not at all related to appellant's use [of] a reserved area and its flag field...wherein the value within the total of appellant's flag field at the time of a power interruption is unique to the state of the updating/synchronizing process when power interruption occurred." Yet, appellant never points out why the two flag fields are "not at all related." Further, while appellant's flag field may, in fact, be "unique" to the state of the process, it is unclear where, in the instant claims, such "uniqueness" is recited.

Appellant argues that the examiner has employed impermissible hindsight [brief-page 22] and fails to find any suggestion to modify Katz in order "to store appellant's write-data-update flag, having appellant's unique values, in appellant's reserved-area." Again, we find nothing in the instant claims, subject to rejection under 35 U.S.C. § 103, reciting anything about a flag having unique values. The claims reciting such specifics, claims 23-27 and 34-38, have been indicated by the examiner as patentable insofar as 35 U.S.C.

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§ 103 is concerned.

It is our view that the examiner has established a prima facie case of obviousness with regard to the subject matter of instant claims 18 through 22, 28 through 33 and 39 and appellant has not convinced us of any error therein. Arguments that there are differences (e.g., time stamp comparisons rather than update tables), per se, are unpersuasive of nonobviousness without some convincing line of reasoning to overcome the examiner's prima facie case (e.g., that the time stamp and update table are both, broadly, update tables). Similarly, arguments directed to limitations not appearing in the claims under rejection are unpersuasive. The examiner has apparently recognized that the instant invention differs from that disclosed by the prior art and, wherein patentably distinct limitations are included, the examiner has not rejected those claims under 35 U.S.C. § 103. However, the examiner views, as do we, the claims under rejection based on that statutory section as being overly broad in view of the applied references.

We have sustained both the rejection of claims 18 through 39 under the doctrine of obviousness-type double patenting and

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the rejection of claims 18 through 22, 28 through 33 and 39  
under

35 U.S.C. § 103.

The examiner's decision is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

	James D. Thomas	)	
	Administrative Patent Judge	)	
		)	
		)	
	Errol A. Krass	)	BOARD OF
PATENT	Administrative Patent Judge	)	APPEALS AND
		)	INTERFERENCES
		)	
	Michael R. Fleming	)	
	Administrative Patent Judge	)	

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