

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

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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 THOMAS R. CROWLEY,  
MICHAEL S. FAUNCE, DENNIS R. MARTIN,  
and MICHAEL J. McDERMOTT

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Appeal No. 1999-2216  
Application 08/805,399<sup>1</sup>

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ON BRIEF

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Before BARRETT, RUGGIERO, and DIXON, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

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<sup>1</sup> Application for patent filed February 24, 1997, entitled "Method and System for Recovering a Computer System from a Loadsource Located at a Remote Location."

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This is a decision on appeal under 35 U.S.C. § 134 from  
the final rejection of claims 1-11.

We reverse.

BACKGROUND

The disclosed invention relates to a method, system, and program code means for recovering a computer system after catastrophic damage to a local loadsource direct access storage device (DASD).

Claim 1 is reproduced below.

1. A method for recovering a computer system from a loadsource direct access storage device located at a remote location after catastrophic damage to a local loadsource direct access storage device, said method comprising the steps of:

replacing said damaged local loadsource direct access storage device with a replacement local loadsource direct access storage device;

setting an indicator on said replacement local loadsource direct access storage device such that said replacement local loadsource direct access storage device cannot be utilized for initial program load;

copying contents from said loadsource direct access storage device located at a remote location to said local loadsource direct access storage device;

resetting said indicator on said replacement local loadsource direct access storage device such that said replacement local loadsource direct access storage device can be utilized for initial program load; and

performing an initial program load on said computer system from said replacement local loadsource direct access storage device.

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THE PRIOR ART

The Examiner relies on Appellants' admitted prior art (APA) at Fig. 2 and page 1, line 20 to page 2, line 25, and on following prior art:

1992	Platteter et al. (Platteter)	5,083,264	January 21,
1993	Shinjo et al. (Shinjo)	5,269,022	December 7,
1996	Payne et al. (Payne)	5,519,869	May 21,
1996	Larson et al. (Larson)	5,548,712	August 20,
1997	Jones et al. (Jones)	5,657,439	August 12,
1995)		(filed November 3,	
1996	Yanai et al. (Yanai '347 <sup>2</sup> )	5,544,347	August 6,
1998	Yanai et al. (Yanai '792)	5,742,792	April 21,
1996)		(filed May 28,	

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<sup>2</sup> Although not part of the official statement of the rejection, the Examiner relies on Yanai '347 because it is incorporated by reference in Yanai, U.S. Patent 5,742,792, which is part of the rejection. This is not good practice. The rejection must contain a mention of references applied in the rejection. See In re Hoch, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970); Ex parte Movva, 31 USPQ2d 1027, 1028 n.1 (Bd. Pat. App. & Int. 1993). Accord Ex parte Hiyamizu, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Int. 1988); In re Raske, 28 USPQ2d 1304, 1304-05 (Bd. Pat. App. & Int. 1993); MPEP § 706.02(j) (7th ed., rev. 1, Feb. 2000).

Shinjo, the main reference, is directed to a method and apparatus for quickly booting a computer system after an initial boot process. The normal mode of Shinjo has a "quick start mode" in which a high speed boot can be executed using the backup data, and a "saving mode" in which the main memory data stored in the main memory 12 is saved in the backup memory 13 as backup data immediately after a normal boot (col. 2, lines 57-62). A backup flag 15 is set to indicate the quick start mode and is reset to indicate the saving mode (col. 2, lines 62-67). When Shinjo is started in the normal mode and the backup flag is reset, a saving mode is selected (the "NO" path from step S2 in Fig. 2). A conventional boot process is executed comprising executing the operating system (OS) initialization process (step S4) and the application initialization process (step S5) by the initialization program (Fig. 2, col. 3, lines 16-23); main memory data is copied into backup memory 13 and the backup flag 15 is set (step S8); and then a system reboot is executed. Since the backup flag has been set, the boot process is started in the quick start mode through steps S2 and S3 (to the "YES" path in FIG. 2) after

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the reboot (col. 3, lines 35-37). In step S6 the backup data stored in the backup memory 13 is restored into the main memory 12. Since the computer system is restored to the state immediately after the boot process and the running environment is set, the boot process can be completed without executing the OS initialization process of step S3 or the application initialization process of step S4 (col. 3, lines 39-45).

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THE REJECTIONS

Claims 1, 5, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the APA in view of Shinjo further in view of Yanai.

Claims 2 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the APA, Shinjo, and Yanai, further in view of Larson.

Claims 3 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the APA, Shinjo, and Yanai, further in view of Platteter.

Claims 4 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the APA, Shinjo, and Yanai, further in view of Jones.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the APA, Shinjo, and Yanai, further in view of Payne.

We refer to the final rejection (Paper No. 5) (pages referred to as "FR\_\_") and the examiner's answer (Paper No. 10) (pages referred to as "EA\_\_") for a statement of the Examiner's position, and to the brief (Paper No. 9) (pages

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referred to as "Br\_\_") for a statement of Appellants'  
arguments thereagainst.

OPINION

Appellants group the claims as follows (Br6):

(1) claims 1-3, 5, and 7-10 stand or fall together with claim 1; (2) claims 4 and 11 stand or fall together with claim 4; and (3) claim 6 stands or falls separately. It turns out that it is only necessary to address independent claim 1.

The Examiner finds (FR2):

[The APA] teaches a method and system for recovering a computer system from a loadsource DASD located at a remote location after failure of a local loadsource DASD allowing the remote DASD to be utilize [sic] for IPL processings, instead of the failed local DASD's IPL data. (Figure 2, and page 1 line 20 to page 2 line 25 and page 7 line 28 to page 8 line 22).

Appellants' Figure 2 shows remote IPL (initial program load), i.e., IPL from a mirrored loadsource DASD at the remote site (specification: p. 1, lines 20-28; p. 2, lines 20-25; p. 7, line 28 to p. 8, line 22). However, the claimed invention is directed to an indirect local IPL method, i.e., communication with the remote loadsource DASD to copy its contents to a local loadsource DASD followed by IPL from the local loadsource DASD. The prior art local (non-remote) IPL method involves physically transporting the

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loadsource DASD from the remote site to the local site for attachment to the replacement computer system (specification: p. 2, lines 1-18). Thus, the rejection starts with remote IPL, which is a different kind of method than the local IPL method of claim 1.

The Examiner finds that "the applicant's admitted prior art does not teach the use of indicators representing whether the local DASD can be used, nor the specifics of copying the data from the remote location to the local DASD" (EA4).

At best, the APA implies the first step of "replacing said damaged local loadsource direct access storage device with a replacement local loadsource direct access storage device." None of the other steps of setting, copying, resetting, and performing an IPL are taught or suggested by the APA.

The Examiner finds (FR2-3):

Shinjo teaches a system and method for recovering from a failure associated with a local (main) storage device by allowing a mirrored backup storage device to be utilized. The system allows the data in the backup device to be copied into the local storage device, when the local device is not to be used, based on an indicator stored in the backup memory device which indicates whether or not the data in the local or main

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memory will not be available (or used), via the data in the backup device will have to be copied to the main memory for subsequent use by the computer system. (Abstract and column 1 lines 31-64 and column 2 lines 25-68 and column 3 line 7 to column 4 line 57).

. . .

As per the use of indicators, as described previously, Shinjo shows the use of indicators which reflect when the system is to perform the copying functions from the backup devices to the main device, thus in a sense, preventing the main device's data from being used.

Appellants argue (Br5): "[T]he indicator as recited in Claim 1 is utilized to prevent the local loadsource DASD from performing an initial program load instead of 'preventing the main device's data from being used' as asserted by the Examiner on page 3, first [sic, second] paragraph of the Final Office Action. Hence, the Examiner has improperly modified the language of Claim 1 to make the rejection."

The Examiner responds that Shinjo shows a flag for preventing use of a specific device (EA16).

Setting the flag in Shinjo prevents the main memory (corresponding to a local DASD<sup>3</sup>) from being used for IPL and

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<sup>3</sup> A "direct access storage device (DASD)" is defined as "[a] device in which access time is effectively independent of

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Appellants have not argued otherwise. The Examiner's description of Shinjo's flag as "preventing the main device's data from being used" (FR3) would have been more complete if he added "for initial program load," but is not viewed as error.

Appellants argue (Br6): "Because Shinjo teaches that in initial program load can be performed when the backup flag is set, the backup flag in Shinjo does not teach or suggest the indicator recited in Claim 1."

The Examiner responds that "the fact that Shinjo's system can perform IPL when its indicator is set does not preclude the use of an indicator to prevent a memory device's use, as suggested by Yanai" (EA17).

We do not understand Appellant's argument or the Examiner's response. When the backup flag 15 is set in Shinjo, no IPL is performed using the main memory 12; instead, the data from the backup memory 13 is copied to the main memory 12 (step S6). Thus, setting the flag does

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the location of the data." IBM Dictionary of Computing (10th ed., McGraw-Hill, Inc. 1993). Although DASDs are usually thought of as hard disks and the like, the memory in Shinjo meets the general definition of a DASD.

prevent the main memory 12 functioning for IPL, i.e., "such that said . . . local loadsource direct access storage device cannot be utilized for initial program load," as claimed. An IPL is performed using the main memory 12 when the backup flag is reset (the "NO" option from step S2). If Appellants' point was intended to be that the functions during set and reset are reversed in Shinjo, even if that were true, the states are arbitrary and could be reversed.

Appellants do not provide any other arguments as to claim 1. Although we do not find Appellants' arguments regarding Shinjo persuasive of error, we nonetheless conclude from our own analysis that the rejection fails to establish a prima facie case of obviousness.

We accept the Examiner's conclusion that it would have been obvious to one of ordinary skill in the computer art to utilize the quick start boot method in Shinjo as a disaster recovery method. One of ordinary skill would have recognized that the memory failure requiring booting in Shinjo could encompass a catastrophic failure requiring replacement of the main memory. While the definition of DASD is broad enough to include main memory 12, there is

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some question in our minds whether the main memory 12 in Shinjo can be considered a "local loadsource direct access storage device." A "local loadsource DASD[] contains system code utilized to perform initial program load (IPL) of the computer system" (specification, p. 2, lines 21-22). Main memory 12 in Shinjo only stores the results of an IPL (the boot process of steps S4 and S5) using programs and data from the disk unit 16; it is not a source of programs used to perform an IPL. Thus, it would seem that disk unit 16 best corresponds to a loadsource DASD. Since this issue is not argued, we assume main memory 12 is the local loadsource DASD and backup memory 13 is the remote loadsource DASD.

We start by considering Shinjo at the point where the saving mode has already occurred, i.e., there has been a normal boot (steps S4 and S5), the contents of main memory 12 have been copied (mirrored) to backup memory 13 and the backup flag 15 has been set (step S8), and the system has been rebooted. Now we assume there has been a failure in the main memory, such as a power loss or catastrophic damage, that requires a system boot (the same thing as an IPL). We assume, because it has not been

argued, that it would have been obvious to replace the main memory 12 in the event of a failure and to locate the flag 15 or 25 in the replacement main memory. The flag 15 in Shinjo, when set, prevents the main memory 12 from being used for an IPL; the main memory 12 is only used for IPL (the booting process) when the flag is reset. The system starts up in the quick start mode because flag 15 is set, and the contents of the backup memory 13 (the remote loadsource DASD) are copied into main memory 12 (the local loadsource DASD). There is no step of resetting the flag (indicator) such that the main memory 12 (the local loadsource DASD) can be utilized for IPL, nor is there a step of performing an IPL after copying ) there is no need for an IPL because the state immediately after the system is booted is restored by the copy process. The Examiner admits that Shinjo does not show resetting the indicators (FR4), but says nothing about performing an IPL after resetting the indicator and copying.

Having arrived at this point in the analysis, we fail to understand how the Examiner proposes to modify Shinjo to arrive at the claimed invention. There is no step in Shinjo

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of resetting the flag (indicator) after the copying step such that the main memory 12 (the local loadsource DASD) can be utilized for IPL. The flag remains set until the backup data is lost (e.g., when the power is turned off, col. 4, lines 37-43) or changed (when a maintenance mode is performed, step S3). Furthermore, there is no step of performing an IPL after copying the contents from backup memory 13 to main memory 12. There is no need for an IPL because the state immediately after the system is booted (i.e., after an initial IPL) is restored by the copy process. If Shinjo were modified so as to reset the flag after copying and to perform an IPL using main memory 12, this would destroy the purpose of Shinjo which is to avoid performing an IPL. Thus, there are major changes and inconsistencies to be resolved in modifying Shinjo into the claimed method. We have reviewed in detail the Examiner's rationale regarding Yanai '347 and Yanai '792, but do not find any appreciation of these differences or any answers thereto. Accordingly, we conclude that the Examiner has failed to establish a prima facie case of obviousness. The rejections of claims 1-11 are reversed.

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REVERSED

	LEE E. BARRETT	)	
	Administrative Patent Judge	)	
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		)	BOARD OF
PATENT		)	
	JOSEPH F. RUGGIERO	)	APPEALS
	Administrative Patent Judge	)	AND
		)	INTERFERENCES
		)	
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		)	
	JOSEPH L. DIXON	)	
	Administrative Patent Judge	)	

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