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KONRAD, RAYNES, DAVDA & VICTOR LLP ATTN: IBMTUC 350 SOUTH BEVERLY DRIVE, SUITE 360 BEVERLY HILLS, CA 90212			FAYE, HANNAH A	
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* THERESA M. BROWN, NEDLAYA Y. FRANCISCO,  
SUGUANG LI and BETH A. PETERSON

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Appeal 2018-008603  
Application 14/071,529  
Technology Center 2100

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Before JOHNNY A. KUMAR, STEVEN M. AMUNDSON, and  
JASON M. REPKO, *Administrative Patent Judges*.

KUMAR, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Appellant<sup>2</sup> seeks our review under 35 U.S.C. § 134(a) from a final rejection of claims 1, 2, 23, 25, and 26, i.e., all pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> Appellant has filed a related Appeal in copending U.S. Patent Application No. 13/759,935. App. Br. 3.

<sup>2</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 (2017). Appellant identifies the real party in interest as International Business Machines Corporation. App. Br. 2.

## STATEMENT OF THE CASE

### *The Invention*

The invention concerns “performing point in time copy operations from source volumes to space efficient target volumes in two stages via a non-volatile storage.” Spec. ¶ 1.<sup>3</sup>

### *Representative Claim*

Independent claim 1 exemplifies the subject matter of the claims under consideration and reads as follows:

1. A method, comprising:

in response to receiving, by a controller, a request from a host to perform a point in time copy operation from a source volume to a space efficient target volume, performing a first set of operations, the first set of operations comprising:

updating a bitmap metadata to indicate tracks to be copied for the point in time copy operation, and in response to updating the bitmap metadata sending an indication to the host that the point in time copy operation is complete even though a corresponding physical point in time copy of data stored in the tracks has not committed;

and

in response to updating the bitmap metadata, copying, via the controller, by using the bitmap metadata, data stored in the tracks indicated in the bitmap metadata, from the source volume to a non-volatile storage to preserve the point in time copy operation;

and  
subsequent to completion of the first set of operations, performing a second set operations, comprising asynchronously copying, via a background process, the data copied in the first set

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<sup>3</sup> This decision employs the following abbreviations: “Spec.” for the Specification, filed Nov. 4, 2013; “Final Act.” for the Final Office Action, mailed July 27, 2017; “App. Br.” for the Appeal Brief, filed Mar. 7, 2018; “Ans.” for the Examiner’s Answer, mailed June 28, 2018; and “Reply Br.” for the Reply Brief, filed Aug. 28, 2018.

of operations to the non-volatile storage, from the nonvolatile storage to the space efficient target volume to perform a commit of the physical point in time copy of the data from the source volume to the space efficient target volume, wherein the copying of the data from the source volume to the non-volatile storage takes less time in comparison to directly copying the data from the source volume to the space efficient target volume, and wherein the asynchronous copying of the data via the background process takes more time than the copying of the data from the source volume to the non-volatile storage.

App. Br. 21 (Claims App.).

*The Rejections on Appeal*

Claim 1, 23, 25 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Burton et al. (US 2005/0251634 A1, pub. Nov. 10, 2005) and in view of Lorenz et al. (US 2008/0077629 A1, pub. Mar. 27, 2008).

Claim 2 rejected under 35 U.S.C. § 103(a) as being unpatentable over Burton and Lorenz in view of Kiselev (US 8,001,085 B1, iss. Aug. 16, 2011).

ANALYSIS

We have reviewed the rejection of the pending claims in light of Appellant's arguments that the Examiner erred. In doing so, we have evaluated only the arguments that Appellant actually makes on appeal.

*Independent Claim 1*

Claim 1 recites a method where a first set of operations require, *inter alia*, "copying . . . data stored in the tracks indicated in the bitmap metadata, from the source volume to a non-volatile storage to preserve the point in time copy operation" (step 1); and a second set of operations require, *inter alia*, "asynchronously copying, via a background process, the data copied in the first set of operations to the non-volatile storage" (step 2); and "wherein

the asynchronous copying of the data via the background process takes more time than the copying of the data from the source volume to the non-volatile storage” (disputed time limitation). App. Br. 21 (Claims App.).

The Examiner finds that Burton discloses the disputed time limitation of claim 1. Final Act. 3–4 (citing Burton ¶ 3).

Paragraph 3 of Burton discloses:

Point in time copying is as of a point in time, unlike synchronous mirroring which is a continuous process of copying data as it updated, but which prevents any updating from occurring by failing to complete the updating storage transaction for the data at a source until after that updating data has also been stored at a target. Asynchronous mirroring also is continuous, but may appear to be quicker, and is a complex process that requires that the updating data is first stored by the source data storage, and requires that safeguards are in place to assure that it will ultimately be stored at the target data storage.

Among other things, Appellant argues that Paragraph 3 of Burton does not teach the disputed time limitation, i.e., “wherein the asynchronous copying of the data via the background process takes more time than the copying of the data from the source volume to the non-volatile storage” Reply Br. 3–4 (emphasis added). In particular, Appellant argues that “[p]aragraph 3 of the cited Burton appears to be comparing asynchronous mirroring to synchronous mirroring, and seems to be indicating that asynchronous mirroring may appear to be quicker than synchronous mirroring.” *Id.* at 4 (citing Burton, ¶ 3).

We agree with Appellant that the Examiner has not adequately explained how Burton teaches the disputed time limitation of claim 1.

Accordingly, we find that the Examiner has failed to show that Burton teaches that the asynchronous copying of the data via the background

process takes more time than the copying of the data from the source volume to the non-volatile storage as required by the claims.

Based on the record before us, we do not sustain the obviousness rejection of claim 1 based on Burton and Lorenz. Because this determination resolves the appeal with respect to this claim, we need not address Appellant's other arguments regarding Examiner error.

*Dependent Claims 2, 23, 25, and 26*

Claims 2, 23, 25, and 26 depend directly from claim 1. App. Br. 21–23 (Claims App.). For the reasons discussed regarding independent claim 1, we do not sustain the obviousness rejections of these dependent claims.

CONCLUSION<sup>4</sup>

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 23, 25, 26	103	Burton, Lorenz		1, 23, 25, 26
2	103	Burton, Lorenz, Kiselev		2
<b>Overall Outcome</b>				1, 2, 23, 25, 26

REVERSED

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<sup>4</sup> We note claim 1 recites wherein the asynchronous copying of the data via the background process (step 2) takes more time than the copying of the data from the source volume to the non-volatile storage (step 1).

Our reviewing court guides: where “the problem is known, the possible approaches to solving the problem are known and finite, and the solution is predictable through use of a known option,” a solution that is **obvious to try** may indeed be obvious. *Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1351 (Fed. Cir. 2008) (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007)). Applying this reasoning here, we note the limited, finite set of three possibilities—the steps may occur such that (1) step 1 takes more time than step 2; (2) step 2 takes more time than step 1; or (3) step 1 and step 2 take the same time. Therefore, in the event of further prosecution the Examiner should ascertain whether modifying Burton (1) would have merely been a predictable result and (2) would have been obvious to try, and thus claim 1 should be rejected under 35 U.S.C. § 103(a).