UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEPHEN H. BLENDERMANN, ALAN RAY SUTTON, ROBERT RAICER, L. MICHAEL ANDERSON, CLAYTON E. RUFF, and WILLIAM G. KAFAUVER

Appeal 2007-1958
Application 11/130,940
Technology Center 2100

Decided: April 30, 2008

Before JAMES D. THOMAS, ROBERT E. NAPPI, and JOHN A. JEFFERY, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 through 37. We have jurisdiction under 35 U.S.C. § 6(b).

The Decision in this appeal mailed on September 11, 2007 is vacated *sua sponte*. In the September 11, 2007 decision we reversed the Examiner

on procedural grounds and did not reach the merits of the anticipation rejections. Upon further reflection, we now vacate the procedural reversal of that decision and decide the appeal of the anticipation rejections on the merits and the arguments presented in the Appellants' Briefs. Accordingly, this Decision is substituted in the place of the September 11, 2007 decision.

As best representative of the disclosed and claimed invention, independent claim 1 is reproduced below:

1. A data storage management system comprising:

a physical storage device;

an interim storage device which acts as a virtual storage device of the physical storage device; and

a storage manager in communication with the interim storage device, a plurality of computers, and the physical storage device, wherein the storage manager provides the computers with access to the physical storage device via a serial access data control such that the physical storage device is able to be allocated to only one computer at any given time;

wherein the storage manager allocates a first interim storage device portion to a first computer for a time duration in lieu of the physical storage device being allocated to the first computer upon receipt of an allocation request from the first computer requesting allocation of data storage space on the physical storage device, and wherein the storage manager allocates a different interim storage device portion to a second computer for a time duration in lieu of the physical storage device being allocated to the second computer upon receipt of an allocation request, during the time duration in which the first interim storage device portion is allocated to the first computer, from the second computer requesting allocation of data storage space on the physical storage device such that the computers have simultaneous access to the interim storage device and the physical storage device is free from allocation monopolization by any one of the computers;

wherein the interim storage device portions emulate the physical storage device with respect to storing and retrieving data for the computers while being allocated to the computers in lieu of the physical storage device being allocated to the computers such that the interim storage device portions appear to the computers as being the physical storage device.

The following references are relied upon by the Examiner:

Tzelnic	US 5,829,046	Oct. 27, 1998 (Filed June 10, 1996)
Carlson	US 6,173,359 B1	Jan. 9, 2001 (Filed August 27, 1997)

In an initial rejection, the Examiner considers Tzelnic to anticipate all claims on appeal, claims 1 through 37, under 35 U.S.C. § 102(e) (Ans. 3-5). In a second stated rejection under 35 U.S.C. § 102(b), the Examiner relies upon Carlson to also anticipate claims 1 through 37 (Ans. 5-6).

Rather than repeat verbatim the positions of the Appellants and the Examiner, general reference is made to the Brief and Reply Brief for the Appellants' positions, and to the Answer for the Examiner's positions.

OPINION

On the one hand, while we reverse the rejection of all claims on appeal under 35 U.S.C. § 102(b) as being anticipated by Carlson, we sustain the rejection of these claims under 35 U.S.C. § 102(e) as being anticipated by Tzelnic.

At the outset, according to Appellants' positions set forth in the Brief at Page 10, the bottom of Page 13, the top of Page 14, and the bottom of Page 15, Appellants consider independent claim 1 as representative of all

claims on appeal. Since no arguments are presented in the Brief and Reply Brief as to any other independent claim and no dependent claim from any of these independent claims is argued, any arguments that could have been made against the rejection of them are waived.

As stated at the bottom of Page 11 of the Brief regarding Tzelnic and at the bottom of Page 14 of the Brief as to Carlson, Appellants state that "independent claim 1 differs from Tzelnic in that different ISD portions are allocated to computers in lieu of the PSD being allocated to the computers upon receipt of allocation requests from the computers requesting allocation of data storage space on the PSD during the same time duration." The same position is essentially taken at the bottom of Page 2 of the Reply Brief.

This position only indirectly reflects the subject matter actually set forth in representative independent claim 1 on appeal. The essential feature of the storage manager (recited in the first wherein clause of claim 1) is that overlapping or parallel operations occur with respect to a second computer being allocated a second portion of the interim storage device "during the time duration in which the first interim storage device portion is allocated to the first computer." This simultaneity of functionality is further refined by the additional statement that this quoted functionality occurs "such that the computers have simultaneous access to the interim storage device." There is no positive statement in claim 1 of any actual allocation to the physical storage device.

It is these arguments as to Carlson as well as the corresponding features actually recited in claim 1 that lead us to conclude that the Examiner

has erred in the application of Carlson to representative independent claim 1 on appeal.

Figure 2 of Carlson shows the data storage subsystem 200 which includes a plurality of host computers 202 accessing through the storage interface 204 the cache 206 and the automated tape library 208. Whereas the Examiner's statement of the rejection of independent claim 1, at pages 5 and 6 of the Answer, relies upon the paragraph bridging columns 8 and 9 of Carlson as to the operation of cache 206, this discussion does not meet the simultaneous accessibility of the interim storage device by both computers essentially during the same time duration for different requests according to the features quoted earlier in this opinion. This is believed to be the essence of Appellants' argument urging error on the part of the Examiner rejecting the claims on appeal under Carlson. The Examiner's responsive arguments as to this rejection at Pages 8 and 9 of the Answer fail to come to grips with the argued limitations and only appear to repeat again the Examiner's reliance upon the paragraph bridging columns 8 and 9 of Carlson. We are unaware of any other portion of this reference that teaches the claimed features. Therefore, we must reverse the rejection of representative independent claim 1 and of all remaining claims on appeal relying upon Carlson as a basis of anticipation since corresponding features appear in the remaining independent claims 7, 13, 19, 25, and 31.

On the other hand, we sustain the alternative anticipation rejection relying upon Tzelnic. We do so for the reasons set forth by the Examiner in the Answer as embellished upon by the following remarks.

Tzelnic's Figure 1 shows video files server 20 that includes a tape silo 24 and an integrated cached disk array storage subsystem 23 as well as a plurality of controller servers 28, 29, all of which are shown in more detail in Figure 2. A plurality of clients 54, including client computers to the extent claimed, access the storage system through switch and network 25 feeding in a parallel architecture format the plural controller servers 28, 29 as well as plural stream servers 21 providing concurrent accessibility of the tape silo 24 and the integrated cache disk array 23 in a parallel manner. It is the tape silo that corresponds to the physical storage device of the claims as well as the integrated cache disk array 23 corresponding to the interim storage device. The controller servers 28, 29 as well as the stream servers 21 correspond to the storage manager as functionally claimed in representative independent claim 1 on appeal. The details of the interim storage element 23 in Figures 1 and 2 of Tzelnic are shown in Figure 3. Thus, contrary to the assertion made at Page 12 of the principal Brief, the detailed view of the cached interim storage system 23 in Figure 3 is of significant bulk and complexity to perform the massive data transfer capabilities according to the reference for both read and write operations.

To the extent that the claimed interim storage device acts or functions as a virtual storage device and or emulates physical storage devices, the software approaches outlined in Figures 4 through 6 clearly indicate to the artisan that such features are within Tzelnic. The common file system 71 in Figure 5 is plainly taught to be a virtual file system (VFS) that provides bases for the buffer cache 62 to interface directly to the massive physical storage devices or physical file systems, 79/80. The feature of the interim

storage device portions emulating or otherwise "appearing" to the computers to be a physical storage device is also inherent in the nature of the use of cache memories as recognized by the Examiner in the Answer. To the extent this is second basic argument of patentability, such as the positions set forth at Pages 12 and 13 of the principal Brief on Appeal, we observe that this emulation feature also appears to have been admitted to be in the prior art according to Appellants' discussion at Specification page 8, lines 25 through 28.

As to the first argument relating to simultaneity of functionality of the manner in which the interim storage device allocates memories for accessibility by plural computers during the same time duration, the Examiner's references to Figures 16 and 19 of Tzelnic and the corresponding discussion are persuasive of unpatentability as to this feature. The plurality of network clients/computers in Figure 16 are fed in a concurrent manner not only by the stream server's random access (buffer) memories (RAMs) within the various stream servers 21, but are also, as depicted in Figure 16, separately allocatable within the integrated cache memory 41 and its associated disk array 47, both of which comprise the interim storage device 23 of figures 2 and 3, for example.

The Examiner's reliance upon Figure 19 and its corresponding discussion at column 25 through the showing in Figure 20 and the end of the patent is persuasive evidence of the claimed simultaneity or overlapping operations feature as we noted earlier in this appeal. This is well explained by the Examiner at Page 4 of the Answer with confirming positions at pages 6 and 7 of the Answer as well. Significantly, the statement is made at

column 25, lines 36 through 41 of Tzelnic, that "[b]ackup data can be streamed, concurrently by all the stream servers, to the IDCA 23 at an aggregate speed on the order of 150 gigabytes per hour. The backup data are then sorted and written to tape at a tape transport speed on the order of 7 gigabytes per hour per device." (The noted transfer rates are not pertinent here.) Consistent with the showings in Figures 16 and 19, the concurrence of allocations and accessibility to the interim storage device by plurality of clients/computers, as claimed, is shown among these figures and taught by the discussion at columns 25 through 27 as argued by the Examiner. This operability appears to be confirmed by the showings in Figure 7 from a software perspective as well as the statements made at column 11, lines 53 through 56 from a frame rate/period perspective.

We are therefore unpersuasived by Appellants' urging that Tzelnic does not met this claimed features as asserted at pages 11 and 12 of the principal Brief on appeal, as well as the corresponding arguments at pages 2 through 4 of the Reply Brief. To the extent argued in the principal and reply Briefs, the claimed computer requesting allocations does not relate to any "specific" PSD. Only a single physical storage device is recited in representative independent claim 1 on appeal.

In view of the foregoing, we have reversed the Examiner's rejection of all claims on appeal under 35 U.S.C. § 102 as being anticipated by Carlson. On the other hand, we have sustained the alternative rejection of all claims on appeal under 35 U.S.C. § 102 as being anticipated by Tzelnic. Since we have sustained at least one rejection of all claims on appeal, the decision of the Examiner is affirmed since Appellants have not presented

convincing arguments as to any Examiner error as to the Examiner's reliance upon Tzelnic for representative independent claim 1 on appeal.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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