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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAHUL GHOSH and AARON J. QUIRK

Appeal 2019-000367
Application 14/839,227
Technology Center 2400

Before ROBERT E. NAPPI, SCOTT E. BAIN, and MICHAEL T. CYGAN,
Administrative Patent Judges.

CYGAN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 3, 4, and 6–8. Appeal Br. 13, 14 (Claims App.). We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as International Business Machines Corporation. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to a computer program product for reducing workloads of neighboring virtual machine tenants in a cloud environment having shared storage. Abstract. Such workloads may be data intensive and may require frequent writes to large databases, including logging activity.

Spec. ¶ 3. A computer may determine current input/output characteristics of an application enabled on a virtual machine, select and offload logs based on trends found in the input/output characteristics, and aggregate portions of the logs that have been directed to separate file locations. *Id.* ¶ 5. Independent claim 1 is illustrative, with limitations at issue italicized for emphasis:

1. A method to enhance tenant performance in a cloud shared-storage environment, comprising:
 - determining current input/output characteristics of an application enabled on a virtual machine;
 - predicting a future workload on a disk system associated with the virtual machine using the input/output characteristics;
 - selecting and offloading logs based on trends found in the input/output characteristics; and
 - aggregating portions of the logs that have been directed to separate file locations to reconcile portions that may have been separated, wherein aggregating portions of the logs includes pulling the portions of the logs from remote locations and relocating the portions back into original positions in the virtual machine.

Dependent claims 3, 4, and 6–8 each incorporate the limitations of claim 1. Claims 2 and 5 have been cancelled. Final Act. 1.

REFERENCES

Name	Reference	Date
Colgrove et al. (Colgrove)	US 2013/0086006 A1	Apr. 4, 2013
Nirantar	US 2014/0310709 A1	Oct. 16, 2014
Gladkikh et al. (Gladkikh)	US 9,128,779 B1	Sep. 8, 2015 Filed July 31, 2014

REJECTIONS

Claims 1, 3, 4, and 6–8 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1–4, 13, 15, 16, and 18–20 of copending Application number 14/562,457. Claims 1, 3, 4, 6, and 8 are rejected as being obvious under 35 U.S.C. § 103 over Nirantar in view of Gladkikh. Claim 7 is rejected as being obvious under 35 U.S.C. § 103 over the combination of Nirantar, Gladkikh, and Colgrove.

ANALYSIS

A. Double Patenting

The Examiner has provisionally rejected claims 1, 3, 4, and 6–8 on the ground of nonstatutory double patenting as being unpatentable over claims 1–4, 13, 15, 16, and 18–20 of U.S. Application number 14/562,457. Final Rej. 5. Appellant has not contended that the Examiner erred in this rejection. Due to its provisional nature, we do not reach the Examiner’s provisional rejection of claims 1, 3, 4, and 6–8 on the ground of nonstatutory double patenting. *Ex parte Moncla*, 95 U.S.P.Q.2d 1884 (BPAI 2010) (precedential).

B. Obviousness

Claims 1, 3, 4, 6, and 8 are rejected under 35 U.S.C. § 103 as being obvious over Nirantar in view of Gladkikh. With respect to claim 1, the

Examiner has determined that Nirantar teaches or suggests each limitation except for the operational data being input/output characteristics, and for monitoring the select and offload activity of logs to control a configuration of a disk system, aggregating portions of the logs that have been directed to separate file locations to reconcile portions that have been separated, and pulling the portions of the logs from remote locations and relocating those portions back into original positions in the virtual machine. The Examiner finds each of these limitations to be taught or suggested by Gladkikh. Final Act. 6–8.

Appellant first argues that the combination of Nirantar and Gladkikh does not teach a cloud shared-storage medium and computer-usable code stored on the cloud shared-storage medium that performs the recited features. Appeal Br. 7; Reply Br. 5. The Examiner finds that Nirantar teaches or suggest that feature through a virtual machine that receives configuration data to establish a copy of a mobile application and execute the copy of the mobile application. Final Act. 2. Appellant characterizes Nirantar as “offloading applications *from* a mobile device *to* a cloud-based virtual machine.” Appeal Br. 10.

We do not find Appellant’s argument persuasive, because claim 1 does not recite any limitation to a cloud shared-storage medium. To the extent that Appellant argues that claim 1 recites a limitation to a cloud shared-storage environment, we agree with the Examiner’s finding that Nirantar teaches or suggests a cloud shared-storage environment that performs the recited features. Appellant’s characterization of Nirantar as merely offloading applications from a mobile device is not persuasive of error in the Examiner’s finding, because Nirantar teaches the use of a cloud-

based server to perform the operations of traffic management, content caching, resource conservation, and facilitating mobile application offloading between mobile devices. Nirantar ¶¶ 32, 37, 41. Accordingly, we are not persuaded by Appellant’s argument that Nirantar fails to teach or suggest a cloud shared-storage medium having computer-usable code stored thereon that performs the recited features.

Appellant next argues that a person of ordinary skill in the art would not have had a reason to combine the references because of the “substantial deficiencies” of Nirantar. Appeal Br. 10. We are not persuaded by Appellant that the Examiner has erred. The test for obviousness is “what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091 (Fed. Cir. 1986). The Examiner finds that the references would have suggested to a person of ordinary skill combining Nirantar and Gladkikh “for the purpose of synchronizing supplemental job information between multiple machines, thereby ensur[ing] that the root cause of performance problem of primary and secondary machines is quickly diagnosed.” Final Act. 8. (citing Gladkikh 12:1–17). We find the Examiner’s rationale is supported by the record, Gladkikh 12:1–17, and the Examiner has provided “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Moreover, Appellant has provided no evidence or reasoning to rebut the Examiner’s findings. Accordingly, we are not persuaded that the Examiner erred.

Appellant next argues that Nirantar teaches operational data, but not input/output characteristics. Appeal Br. 10. However, one cannot show

nonobviousness by attacking references individually where the rejection is based on combinations of references. *In re Keller*, 642 F.2d 413 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091 (Fed. Cir. 1986). The Examiner, however, relied on Gladkikh as teaching the claimed input/output characteristics (Final Act. 7–8). Accordingly, Appellant’s argument regarding Nirantar does not persuade us of error.

Appellant next argues that the combination of Nirantar and Gladkikh does not teach or disclose aggregating portions of logs to reconcile separated portions, and pulling portions of logs and relocating those portions back into original positions in the virtual machine. Appeal Br. 10–11; Reply Br. 7. Specifically, Appellant argues that Gladkikh’s action of synchronizing distributed tasks from multiple remote and local data stores does not teach or suggest those limitations of distributing logs. Appeal Br. 11 (citing Gladkikh 2:13–26, 6:38–52), Reply Br. 7.

We are not persuaded. Contrary to Appellant’s argument, the Examiner has not solely relied upon Gladkikh’s teaching of task distribution, but instead relies on other teachings of Gladkikh relating to log distribution. Ans. 11. The Examiner finds that Gladkikh teaches distributed logs in a data store, in which the data store exists at separate locations and is synchronized. *Id.* (citing Gladkikh Fig. 1, 2:13–26, 4:60–67, 5:1–2, 6:38–52). The Examiner’s findings are supported by Gladkikh, which teaches aggregating machine-generated data, such as logs, from sources such as servers, and using distributed tasks to perform synchronizing data from a secondary data store to a primary data store. Gladkikh 3:9–21, 5:1–2, 9:6–13. Accordingly, we are not persuaded of error in the Examiner’s obviousness rejection of claim 1, and we sustain that rejection. Appellant relies upon the same

arguments for claims 3, 4, 6, and 8; however, because those claims are rejected under the same grounds, they stand or fall with claim 1, and we consequently sustain the Examiner’s rejection of those claims.

With respect to dependent claim 7, the Examiner’s rejection relies upon the base combination of Nirantar and Gladkikh, further in view of Colgrove. However, Appellant relies upon the same arguments against the rejection of claim 7 as for claim 1. Reply Br. 8. Accordingly, for the same reasons as discussed above with respect to Appellant’s arguments against the rejection of claim 1, we are not persuaded of error in the Examiner’s rejection of claim 7.

CONCLUSION

For the above-described reasons, we affirm Examiner’s obviousness rejections of claims 1, 3, 4, and 6–8. We do not reach the Examiner’s provisional nonstatutory rejection of claims 1, 3, 4, and 6–8.

DECISION SUMMARY

In summary,

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
1, 3, 4, 6–8		Provisional Obviousness-type Double Patenting ²		
1, 3, 4, 6, 8	103	Nirantar, Gladkikh	1, 3, 4, 6, 8	
7	103	Nirantar, Gladkikh, Colgrove	7	

² As explained above, we do not reach this rejection per *Ex parte Moncla*, 95 U.S.P.Q.2d 1884 (BPAI 2010) (precedential).

Appeal 2019–000367
Application 14/839,227

Overall Outcome			1, 3, 4, 6–8	
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TIME PERIOD FOR RESPONSE

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