UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte DENNIS ROMMEL BONILLA ACEVEDO and
ADAM PHILLIP ZUCKERMAN

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Appeal 2018-002621
Application 15/297,106[1]
Technology Center 2600

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Before DEBRA K. STEPHENS, DANIEL J. GALLIGAN, and
DAVID J. CUTITTA II, *Administrative Patent Judges.*

GALLIGAN, *Administrative Patent Judge.*

DECISION ON APPEAL

Introduction

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of
claims 1–20, which are all of the claims pending in the application. We
have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.[2]

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[1] According to Appellants, the real parties in interest are the inventors,
Adam Zuckerman and Dennis Bonilla. App. Br. 2.
[2] Our Decision refers to Appellants' Appeal Brief filed September 11, 2017
("App. Br."); Appellants' Reply Brief filed January 12, 2018 ("Reply Br.");
Examiner's Answer mailed November 13, 2017 ("Ans."); and Final Office
Action mailed April 19, 2017 ("Final Act.").

STATEMENT OF THE CASE

Claims on Appeal

Claims 1, 8, and 12 are independent claims. Claim 1 is reproduced below.

1.   A system for facilitating a virtual reality presentation based on a real-world route of a vehicle, the system comprising:

an in-vehicle computer system of a vehicle that comprises one or more processors programmed with computer program instructions that, when executed, cause the in-vehicle computer system to:

obtain destination information associated with the vehicle, wherein the destination information comprises information indicating a destination location of the vehicle;

obtain virtual reality content based on the destination information, wherein the virtual reality content is obtained based on:

(i) a determination of one or more environmental characteristics of one or more portions of a real-world route to the destination location using the destination information; and

(ii) a determination of one or more virtual route portions for a virtual route for a virtual reality presentation so that one or more environmental characteristics of the one or more virtual route portions are similar to the one or more environmental characteristics of the one or more real-world route portions, and

wherein the virtual reality content comprises one or more content portions related to the one or more virtual route portions;

monitor the current location of the vehicle with respect to the one or more real-world route portions; and

cause, via one or more output devices of the vehicle, a presentation of a content portion related to a virtual route portion of the one or more virtual route portions responsive to a determination, based on the monitoring, that the vehicle is on a

real-world route portion that corresponds to the virtual route portion, wherein the one or more content portions comprise the presented content portion.

References

Szczerba	US 2010/0292886 A1	Nov. 18, 2010
Hill	US 2013/0009994 A1	Jan. 10, 2013
Alaniz	US 2015/0100179 A1	Apr. 9, 2015

Examiner's Rejection

Claims 1–20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Szczerba, Alaniz, and Hill. Final Act. 7–29.

Our review in this appeal is limited only to the above rejection and the issues raised by Appellants. Arguments not made are waived. *See* MPEP § 1205.02; 37 C.F.R. §§ 41.37(c)(1)(iv) and 41.39(a)(1).

ANALYSIS

Independent Claims 1, 8, and 12

"virtual reality content"

Appellants contend the Examiner erred in finding Szczerba teaches "virtual reality content . . . related to the one or more virtual route portions," as recited in claim 1 and similarly recited in claims 8 and 12. App. Br. 6–8; Reply Br. 4–5. Specifically, Appellants argue Szczerba "is completely silent with respect to any *virtual reality* content being displayed to the user" and, instead, Szczerba "focuses on enhancing the display of the real world environment of the vehicle" and "presenting an image of the *operational environment* (i.e., the real-world environment in which the vehicle is disposed)." App. Br. 7; Reply Br. 4–5. Appellants further argue the Examiner erred by "asserting that 'operator inputs' depicted in Fig. 38 of

Szczerba correspond[] to the claimed 'virtual route portions.'" App. Br. 7;
Reply Br. 4–5.

We are not persuaded. We agree with the Examiner's finding that
(Final Act. 7–8; Ans. 11–12) Szczerba's enhanced vision system's (EVS)
display of "graphical images upon a windscreen of a vehicle" (Szczerba
¶ 49) teaches "virtual reality content . . . related to one or more portions of a
virtual route." For example, the Examiner points out (Final Act. 7–8; *see*
Ans. 11–12) that Figure 36 of Szczerba describes a system "to project upon
a windscreen turn by turn graphical navigational aids," such as navigation
arrow 264, which displays "vehicle maneuvers required to follow the
planned travel route to arrive at a navigational destination" (Szczerba ¶ 189).

Appellants' argument that Szczerba's "information representing a *real
world environment*" is precluded from the meaning of "virtual reality
content" (Ans. 7; Reply Br. 4) is not commensurate with the scope of the
claims. The Specification does not provide a definition of "virtual reality
content" and instead broadly describes that "[v]irtual reality . . . is a
computer technology that may, for example, replicate an environment, real
or imagined, and simulates a user's physical presence and environment."
Spec. ¶ 3. Consistent with that description of "virtual reality," the graphical
images displayed on Szczerba's windshields that create a virtual driving
environment teach "virtual reality content." For example, Szczerba's
projections provide an enhanced driving environment for the user by
"projecting turn by turn instructions upon the windscreen" (Szczerba ¶ 189,
Fig. 36) and by identifying "a destination building . . . with a graphical box."
(*id.* ¶ 191, Fig. 36). Szczerba's projections further replicate a driving
environment by electronically displaying "lane indicators 222 and 224;

vehicle indicator 228; pedestrian indicator 230; [and] vehicle speed display 234." *Id.* ¶ 180, Fig. 33; *see id.* ¶¶ 181–184, Figs. 34–35, 27. Moreover, even if Szczerba does not teach "virtual reality content," the Examiner also relies on the combination of Alaniz and Hill to teach "virtual reality content" (Ans. 12), which Appellants do not contest.

Furthermore, Appellants' argument that Szczerba's "operator inputs" do not teach "virtual route portions" (App. Br. 7; Reply Br. 4–5) does not address the Examiner's finding that Szczerba's proposed route teaches the use of "virtual route portions." *See* Final Act. 7 (citing Szczerba ¶¶ 156, 158, 189 ("the planned travel route")). In particular, the Examiner points out that "the data from Szczerba must be relied upon and used to set a corresponding virtual route." Ans. 15; Final Act. 7 (citing Szczerba ¶ 156). The data Szczerba uses is "information from a 3D map database to identify a proposed route to an identified destination." Szczerba ¶ 156. Szczerba's proposed route teaches the use of "virtual route portions" because that proposed route is based on a 3D map database, i.e., a database of virtual route portions.

Accordingly, we are not persuaded the Examiner erred in finding the combination of Szczerba, Alaniz, and Hill teaches "virtual reality content . . . related to one or more portions of a virtual route," as recited in claim 1 and similarly recited in claims 8 and 12.

Improper Combination

Appellants contend the Examiner improperly combined Szczerba, Alaniz, and Hill. App. Br. 5–6; Reply Br. 2–3. Appellants' arguments are premised on the assertion that Szczerba "is **not** related [to], or does not

describe or suggest the usefulness of presenting the vehicle operator with *virtual content*." App. Br. 6; Reply Br. 2–3. However, as discussed above, we agree with the Examiner that Szczerba teaches virtual content and, accordingly, Appellants' arguments are not persuasive.

Appellants' remaining arguments that the Examiner's combination is the result of "impermissible hindsight" because of "a lack of valid reasoning in the cited art to combine the references, and the fact that the combination is only present on the record in Appellant[s'] specification" (App. Br. 6; Reply Br. 2) are not persuasive. Initially, the teaching, suggestion, or motivation standard is no longer required in determining obviousness, and, therefore, the reason to combine need not be found in the references themselves. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Moreover, the Examiner provides articulated reasoning having "rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at 417–18. Specifically, the Examiner finds a skilled artisan would have combined the references to "provid[e] a virtual environment for immersive display that is substantially equivalent to the real environment/route but may be displaced in location, time, theme and various user determined preferences." Final Act. 10. We agree with the Examiner that user customization of content is a rational feature to incorporate into a content display system. Even further, the Examiner points out (Ans. 18) that Hill suggests a customized "virtual-world environment of the person's current location" as the user "walks through the [user's] real-world environment" (Hill ¶¶ 23–26). Appellants provide no arguments or evidence persuasively addressing the Examiner's articulated rationale.

Accordingly, we are not persuaded the Examiner improperly combined Szczerba, Alaniz, and Hill or failed to show the combination of Szczerba, Alaniz, and Hill teaches or suggests the limitations as recited in claim 1 and claims 8 and 12, not separately argued. Therefore, we sustain the rejection of claims 1, 8, and 12 under 35 U.S.C. § 103 as being unpatentable over Szczerba, Alaniz, and Hill.

Dependent Claims 2, 4, 6, 10, 13, 16, and 18
"selection of the one or more virtual route portions"

Appellants contend the Examiner erred in finding Szczerba teaches "the determination of the one or more virtual route portions comprises a selection of the one or more virtual route portions from a set of predefined virtual route portions for the virtual reality presentation," as recited in claim 2 and similarly recited in claims 4, 6, 10, 13, 16, and 18. App. Br. 8, 10; Reply Br. 5–6. Specifically, Appellants argue Szczerba "merely describe[s] the use of GPS information to obtain an estimate of the location of the vehicle (i.e., a real world location of the vehicle), and the use of a camera (disposed on the vehicle) to obtain a localized depiction of the environment of the vehicle" rather than teaching "virtual route portions compris[ing] a selection of the one or more virtual route portions from a set of predefined virtual route portions." App. Br. 8 (emphases omitted).

We are not persuaded. As discussed above, we agree with the Examiner's finding that Szczerba generates a "planned travel route," or "proposed route," from stored virtual route portions. Ans. 15; Final Act. 7 (citing Szczerba ¶¶ 156, 189). Specifically, the planned travel route, or "proposed route," is generated by selecting virtual route portions from

"information from a 3D map database." Szczerba ¶ 156. That is, Szczerba selects portions of the stored electronic 3D map, i.e., "predefined virtual route portions," to create a planned travel route made of the selected virtual route portions. Appellants' arguments directed to GPS information and localized environment information (App. Br. 8) do not address Szczerba's generation of a planned travel route by selecting virtual route potions stored in a 3D map database.

Accordingly, we are not persuaded the Examiner erred in finding Szczerba teaches "the determination of the one or more virtual route portions comprises a selection of the one or more virtual route portions from a set of predefined virtual route portions for the virtual reality presentation," as recited in claim 2 and similarly recited in claims 4, 6, 10, 13, 16, and 18.

"similar to the one or more environmental characteristics"

Appellants contend the Examiner erred in finding Hill teaches

a virtual representation of a second real-world environment different from the first real-world environment . . . the virtual reality presentation . . . selection being based on the one or more environmental characteristics of the one or more virtual route portions being similar to the one or more environmental characteristics of the one or more real-world route portions,

as recited in claim 4 and similarly recited in claim 16. App. Br. 9; Reply Br. 8. Specifically, Appellants argue "Hill merely describe[s] the virtual display may be modified by the user based on a certain theme" but Hill does not teach "content corresponding to a different real-world environment is selected for a user's virtual environment based on the different real-world environment-corresponding content having environment characteristics

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similar to the environment characteristics of the user's current location environment." App. Br. 9 (emphases omitted); Reply Br. 8.

We are not persuaded. The Examiner relies on (Final Act. 12–13) Hill's description that the "selection of some or all of the virtual-reality data 206 (e.g., virtual-reality graphics, textures, features, etc.) . . . may also be based on real-world data [that is] collected" (Hill ¶ 77; *see id.* ¶¶ 21–22). Hill explains that "if the real-world data is indicative of rainy/overcast conditions, the virtual reality data 206 may be darker-shade graphics and/or may include rain, lighted street lamps, wet pavements and/or other features characteristic of the rainy/overcast conditions." *Id.* ¶ 77; *see id.* ¶¶ 21–22. That is, based on rainy real-world environmental conditions, Hill selects environmentally similar rainy virtual reality content.

Appellants' arguments, addressing Hill's medieval themes or different city themes (App. Br. 9; Reply Br. 8) do not address Hill's content based on real-world environmental characteristics such as rain. Accordingly, we are not persuaded the Examiner erred in finding Hill teaches

> a virtual representation of a second real-world environment different from the first real-world environment . . . the virtual reality presentation . . . selection being based on the one or more environmental characteristics of the one or more virtual route portions being similar to the one or more environmental characteristics of the one or more real-world route portions,

as recited in claim 4 and similarly recited in claim 16.

"a time different from the current time"

> Appellants contend the Examiner erred in finding Hill teaches
>
> virtual reality content is a virtual representation of the first real-world environment at a time different from the current time . . . the one or more virtual route portions being selected for the

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> virtual reality presentation from a set of predefined virtual route portions that correspond to the different-time real-world route portions,

as recited in claims 6 and 18. App. Br. 9–10; Reply Br. 9. Specifically, Appellants argue Hill's "description of modifying a user's virtual environment based on a theme cannot be properly interpreted as virtual reality content that represents the same real world environment of the user at a time different from the current time, much less . . . the first real-world environment at the different time." App. Br. 9–10 (emphases omitted).

We are not persuaded. The Examiner relies on (Final Act. 13–14) Hill's "user-specified modifications of virtual-world graphics 208" (Hill ¶ 30; *see* Hill ¶ 26, Fig. 3) to teach "a virtual representation of the first real-world environment at a time different from the current time." Hill details that those modifications can

> modify the virtual-reality data 206 to represent a medieval environment, in which case buildings represented in the virtual-reality data 206 may be modified to have turrets, towers, sandstone construction, drawbridges, columns, gargoyles, battlement roof structures, or any other medieval-type features. If the person 104 elects to modify the virtual-reality data 206 to represent a futuristic environment, features and/or characteristics of the virtual-reality data 206 may be modified to have neon lighting, hover-craft vehicles, neon-lighted raceways or tracks as roadways and/or sidewalks, etc.

Id. ¶ 26.

Appellants' arguments that Hill's virtual environment modifications do not represent "the same real world environment of the user *at a time different from the current time*" (App. Br. 9–10; Reply Br. 9) are not commensurate with the scope of the claim. First, the claims only require that the time is "different from the current time," which broadly

encompasses any time that is not the immediate time. As such, Hill's generation of virtual reality worlds "in non-real time" (Hill ¶ 22) necessarily generates a virtual reality worlds "at a time different from the current time" because the virtual reality world is not generated at precisely the current time. Second, the Specification describes that "the virtual reality content may reflect the predicted features of the landscape one year later . . . such as buildings, forests, hills, swamps, rivers, streams, or other features of the landscape predicted to exist a year later)." Spec. ¶ 43. That is, the Specification broadly describes that content representing "a time different from the current time" is broadly "predicted" content. Consistent with the Specification's description, Hill describes such "predicted" content, e.g., "a futuristic environment" that predicts "neon lighting, hover-craft vehicles, neon-lighted raceways or tracks as roadways and/or sidewalks." Hill ¶ 26.

Moreover, the claimed feature merely recites varying the type of data displayed, namely, varying virtual content data to display an environment during a different time. We determine that it would not have been "uniquely challenging or difficult for one of ordinary skill in the art" to display different types of content data. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citation omitted). That is, Appellants' claims specify the type of data being displayed, but we are not persuaded that specifying the type of data displayed recites a non-obvious feature.

Accordingly, we are not persuaded the Examiner erred in finding Hill teaches

> virtual reality content is a virtual representation of the first real-world environment at a time different from the current time . . .
> the one or more virtual route portions being selected for the

virtual reality presentation from a set of predefined virtual route portions that correspond to the different-time real-world route portions,

as recited in claims 6 and 18.

Remaining Claims 3, 5, 7, 9, 11, 14, 15, 17, 19, and 20

Appellants do not argue separate patentability for dependent claims 3, 5, 7, 9, 11, 14, 15, 17, 19, and 20, which depend directly or indirectly from claims 1, 8, and 12. *See* App. Br. 5–10. Accordingly, for the reasons set forth above, we sustain the Examiner's decision to reject claims 5, 7, 9, 11, 14, 15, 17, 19, and 20.

DECISION

We affirm the Examiner's decision rejecting claims 1–20 under 35 U.S.C. § 103 as being unpatentable over Szczerba, Alaniz, and Hill.

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. § 41.50(f).

AFFIRMED