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pto@sherinianlaw.net

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KONRAD V. SHERINIAN

Appeal 2015-006708
Application 11/875,931
Technology Center 2400

Before MICHAEL J. STRAUSS, JOHN F. HORVATH, and
MICHAEL J. ENGLE, *Administrative Patent Judges*.

ENGLE, *Administrative Patent Judge*.

DECISION ON APPEAL

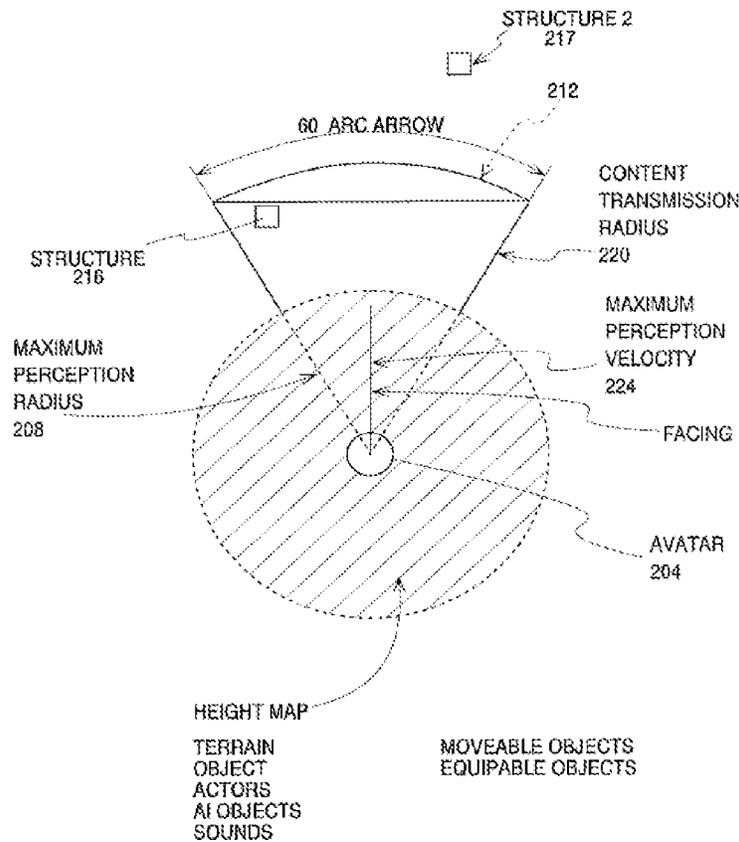
Appellant appeals under 35 U.S.C. § 134(a) from a final rejection of claims 19–37, which are all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

Technology

The application relates to “predicting virtual world content required by a virtual world user,” such as in a “Massively Multiplayer Online Role Playing Game (MMORPG).” Spec. ¶¶ 15, 4.

Figure 2 of the present application is reproduced below.



“FIG. 2 visually depicts . . . an avatar 204 located at the center. Using virtual sight, . . . the avatar has a maximum perception radius 208. In addition, a geometrical shape 212 . . . is projected from the avatar in the direction that the avatar is looking.” Spec. ¶ 33. The avatar can only see objects in the direction it is facing and even then can only see as far as the maximum perception radius 208. However, if the avatar turns or moves forward, it will see different things. The system thus attempts to “determine what content the client computer is most likely to require next” and “predictively transfer[]” such content to the client. *Id.* ¶ 27; *see also* ¶ 37. Thus, in Figure 2, “[a]ll virtual world content unknown to the avatar’s [computer] which is within either the avatar’s maximum perception radius 208 or the boundaries of the geometrical shape 212 are transmitted to the avatar’s [computer].” *Id.* ¶ 33.

Representative Claim

Claim 19 is representative and reproduced below with the limitations at issue emphasized:

19. A method for transmitting virtual world content to at least one client computer from one or more servers maintaining a virtual world, the at least one client computer maintaining a cache of virtual world content, the method comprising the steps of:

i) defining a position of an avatar associated with a particular client computer within said virtual world at a particular time, said avatar having one or more virtual senses including virtual sight;

ii) *defining a first radius about said position encompassing a first set of virtual world content, said first radius being at least equal to a maximum visual perception radius of said avatar;*

iii) *projecting a geometrical shape extending a distance from said position and defining a second set of said virtual world content, said geometrical shape having three dimensions, at least some of said content defined by said geometrical shape being predicted to be within said first radius at a future time and not being within said first radius at said particular time; and*

iv) *queueing content that is not within the content cache of said particular client computer and that is within said first set of virtual world content or said second set of virtual world content;*

v) *transmitting the queued content from the at least one server to the particular client computer.*

Rejections

Claims 19–22, 24–32, and 34–37 stand rejected under 35 U.S.C. § 103(a) as obvious over Rasinski et al. (US 5,787,333; July 28, 1998) and Shaw et al. (US 6,640,284 B1; Oct. 28, 2003). Final Act. 5.

Claims 23 and 33 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Rasinski, Shaw, and the Hero Quest Game System manual (“Hero Quest”). Final Act. 13.

ISSUES

1. Did the Examiner err in finding Rasinski teaches or suggests “defining a first radius about said position encompassing a first set of virtual world content, said first radius being at least equal to a maximum visual perception radius of said avatar” and “projecting a geometrical shape extending a distance from said position and defining a second set of said virtual world content, said geometrical shape having three dimensions, at least some of said content defined by said geometrical shape being predicted to be within said first radius at a future time and not being within said first radius at said particular time,” as recited in claim 19?

2. Did the Examiner err in finding the combination of Rasinski and Shaw teaches or suggests “queueing content that is not within the content cache of said particular client computer and that is within said first set of virtual world content or said second set of virtual world content” and “transmitting the queued content from the at least one server to the particular client computer,” as recited in claim 19?

3. Did the Examiner err in finding Rasinski teaches or suggests “said virtual world content includes height map data and structure data,” as recited in claim 20?

4. Did the Examiner err in finding the combination of Rasinski and Shaw teaches or suggests “said virtual world content includes a plurality of data types selected from the group consisting of structure data, height map data, object data, texture data, audio data, object data, actor data, and artificial intelligence data,” as recited in claim 21?

5. Did the Examiner err in finding Shaw teaches or suggests “said step of queueing comprises queueing less than all structure data within said

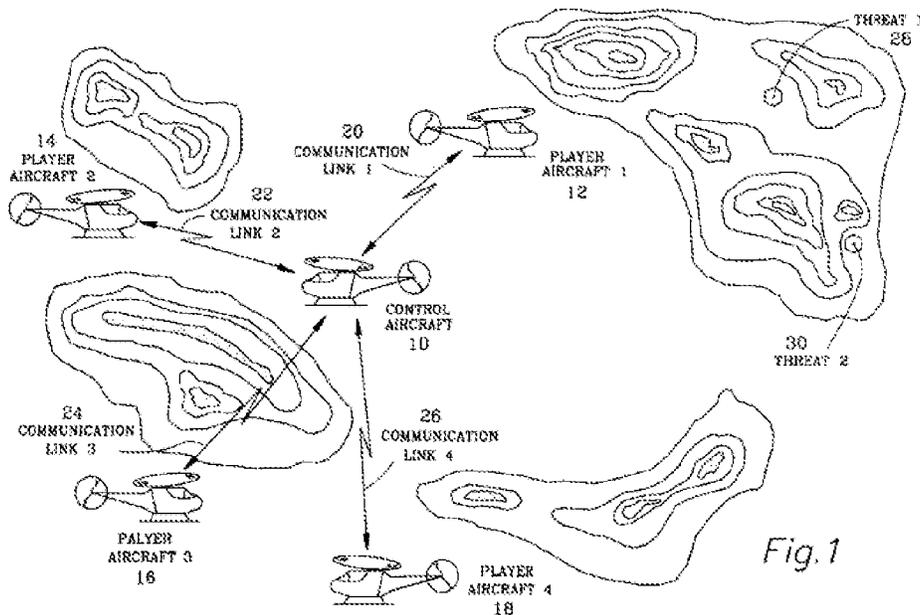
first set of virtual world content and said second set of virtual world content,” as recited in claim 22?

6. Did the Examiner err in finding Shaw teaches or suggests a “story line,” as recited in claim 28?

THE PRIOR ART: RASINSKI

Rasinski teaches aircraft training for multiple players where “threats are simulated by the central controller and transmitted to each player aircraft.” Rasinski Abstract. “The technology . . . is a realistic training platform because it can utilize multiple aircraft and contains terrain data for ‘line of sight’ targeting strategies for low flyers.” *Id.* at 2:33–36.

Figure 1 of Rasinski is reproduced below.



“FIG. 1 is [a] pictorial depiction of a training scenario” that includes “control aircraft 10”; “player aircraft 12, 14, 16 and 18”; threats 28 and 30; and terrain data. Rasinski 6:33–42. In Figure 1, “player aircraft 12 would be unable to ‘see’ threat 28 until reaching a line of site over the simulated terrain data.” *Id.* at 6:42–45.

Because of “delay times for transmission and receipt of data,” Rasinski teaches how to “predict the [future] position of the player aircraft.” Rasinski 11:55–12:3. That predicted position is used “to ascertain visible threats 160 to each player aircraft” based on the predicted “‘line of sight’ for each player.” *Id.* at 12:3–10. An “updated threat list” is then prepared for “transmission . . . to each player aircraft.” *Id.* 12:26–28.

ANALYSIS

We have only considered the arguments Appellant actually raised in the briefs. Arguments that Appellant could have made but chose not to are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2013).

Claim 19

A) “defining a first radius . . .”

Independent claim 19 recites “defining a first radius about said position encompassing a first set of virtual world content, said first radius being at least equal to a maximum visual perception radius of said avatar.”

For this limitation, the Examiner relies on Rasinski teaching a “line of sight” from an aircraft. Ans. 8–9. The Examiner interprets “perception radius” as “pertaining to anything currently within the perception of the player, which may include line-of-sight, but may not include objects that are hidden and thus not within the player’s perception.” Ans. 3.

Appellant contends “line of sight” is not the claimed radius because “Figure 2 clearly depicts [the perception radius] as including content behind the user’s avatar, and therefore, opposite the facing vector.” Reply Br. 3; App. Br. 15–16. Instead, “it would be more appropriate to define ‘perception radius’ as ‘a fixed radius about a player that encompasses

anything that a player's avatar could sense using any of the senses encompassed by the game.” Reply Br. 3.

We agree with Appellant that a circle centered at the avatar and having a radius equal to the perception radius could encompass objects not currently perceived by the avatar, such as objects behind the avatar. Spec. FIG. 2. However, we agree with the Examiner that the “first radius” can be equal to the “perception radius.” Ans. 8. We also are not persuaded by Appellant's argument regarding Rasinski's line of sight. At any given time, an aircraft has a fixed distance it can see in the absence of any obstructions (i.e., a maximum visual perception radius). Appellant's argument that “all threat data within the perception radius would need to be transferred to meet this claim element” (Reply Br. 4) is neither commensurate with claim 19 as written nor consistent with dependent claim 22, which instead queues for transfer “*less than all* structure data.” Whether Rasinski ultimately transmits “less than all” content within the “maximum visual perception radius” of Rasinski's aircraft (e.g., because certain threats within the circle cannot be seen due to terrain) is irrelevant to whether Rasinski's line of sight has “a maximum visual perception radius.” Thus, we agree with the Examiner that Rasinski teaches or suggests this limitation.

B) “projecting a geometrical shape . . .”

Claim 19 recites “projecting a geometrical shape extending a distance from said position and defining a second set of said virtual world content, said geometrical shape having three dimensions, at least some of said content defined by said geometrical shape being predicted to be within said first radius at a future time and not being within said first radius at said particular time.”

We agree with the Examiner that “Rasinski uses the current momentum of the players’ aircraft to predict a next location of the aircraft” and “calculates all threats *that would be visible from the new position* that were not visible from the old position.” Ans. 10 (citing Rasinski 11:55–12:12). We are not persuaded by Appellant’s conclusory arguments, such as that the shape cannot be based on a predicted perception radius or that an aircraft’s line of sight is “two-dimensional.” Reply Br. 4–5; App. Br. 16–17.

C) “*queueing content . . .*” & “*transmitting the queued content . . .*”

Claim 19 recites “queueing content that is not within the content cache of said particular client computer and that is within said first set of virtual world content or said second set of virtual world content” and “transmitting the queued content from the at least one server to the particular client computer.” The Examiner relies on a combination of Rasinski and Shaw for these limitations. Ans. 12–14; Final Act. 7.

Appellant contends these limitations “require[] the transfer of two content sets,” i.e., one for the “first radius” *and* a second for the projected “geometrical shape.” App. Br. 18–19. However, this argument is not commensurate with the scope of the claim as currently written which instead only requires queueing “content” (i.e., not *all* content) within the first set “or” the second set of virtual world content. Thus, the queueing of *any* non-cached content from *either* the first set *or* the second set falls within the scope of this limitation.

Appellant also disputes the meaning of the term “content,” arguing Shaw’s categorizing player’s moves as either predictable or unpredictable is not “world content; i.e., height maps, structures, sounds, etc.” App. Br. 18. However, we are not persuaded by Appellant’s conclusory argument that the

term content “leaves out things like updates to movements.” Reply Br. 1–2. To the contrary, the Specification teaches “[v]irtual world content includes . . . avatar data, actor data, and artificial intelligence data.” Spec. ¶ 9. Notably, Appellant elsewhere concedes the Examiner “appears to be correct” that Shaw “discloses artificial intelligence and actor data.” App. Br. 22; *see also* Final Act. 5 (“the prediction of players’ moves to prefetch and cache would be useful to update the other player’s caches, and eventually their maps”). Thus, we agree with the Examiner that Shaw teaches or suggests “content.” Ans. 14.¹

We also are not persuaded by Appellant’s argument that “the asserted combination changes the principle of operation of Rasinski.” App. Br. 13–14. A “difference” between two prior art references does not necessarily affect the “principle of operation.” *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012). Here, we agree with the Examiner in finding Rasinski and Shaw “both solve the same problem of predicting a user’s next move so that the relevant reactionary data is available by the time that move is completed” (Final Act. 3) and that “[e]ach teaching continues to . . . function unconflicted by the actions of the other.” Ans. 7.

Thus, we sustain the Examiner’s rejection of claim 19, and claims 20, 21, 24–27, 29–31, and 34–36, which Appellant argues are patentable for similar reasons.² *See* App. Br. 15–20, 28–33; 37 C.F.R. § 41.37(c)(1)(iv).

¹ Although not relied on for our decision, we note in passing Rasinski queues and transmits threats that are not within an aircraft’s current line of sight but are within its predicted line of sight thereby also teaching or suggesting the disputed limitation. Rasinski 11:55–12:8.

² In the event of further prosecution, the Examiner may wish to consider whether claims 29 and 32, as well as their dependent claims, are indefinite

Claims 20 and 30

Claim 20 recites “said virtual world content includes height map data and structure data.” We agree with the Examiner that Rasinski teaches “local terrain and elevation data. This represents height map data.” Ans. 15 (citing Rasinski FIG. 1, 11:38). We also agree with the Examiner that Rasinski discloses threats, which teach or at least suggest structure data (e.g., an anti-aircraft emplacement). Final Act. 7 (citing Rasinski 12:17–28).

Appellant contends the height map data and structure data must be “encompassed within the first radius and the geometrical shape . . . as well as queued and transmitted.” App. Br. 20. However, this argument is not commensurate with the scope of claim 20 as written. Claim 20 depends from claim 19, which recites “a first set of virtual world content” and “a second set of *said* virtual world content.” Thus, the first and second sets are *subsets* of the “virtual world content.” Claim 20 only addresses what “said virtual world content” must include and says nothing about the first or second sets.

Appellant further contends Rasinski fails to teach “structure data” because “structures are buildings that can be entered.” Reply Br. 6. The Specification, however, merely teaches that in some embodiments, an avatar can see through or enter *portals*; it does not limit structures to features that can be entered nor does it require that all structures have portals. *See* Spec. ¶¶ 36, 35 (“One example . . . in FIG. 2A. . . . utilizes a portal structure

due to a lack of antecedent basis for “the first set of virtual world content” (claim 29) and “said first set of virtual world content” (claim 32). Unlike claim 19, claim 29 does not introduce “a first set of virtual world content.”

However, the principles of this invention can easily be extended . . . to other spatial data structures.”).

Accordingly, we sustain the Examiner’s rejection of claim 20, and claim 30, which Appellant argues is patentable for similar reasons. *See* App. Br. 33–35; 37 C.F.R. § 41.37(c)(1)(iv).

Claims 21 and 31

Claim 21 recites “said virtual world content includes a plurality of data types selected from the group consisting of structure data, height map data, object data, texture data, audio data, object data, actor data, and artificial intelligence data.”³

Appellant’s arguments against claim 21 are similar to those for claim 20 (e.g., arguing there is no *transmission* of the specified data) and we reject them for the same reasons. Appellant concedes Shaw “discloses artificial intelligence and actor data.” App. Br. 22. Nothing further is required based on the claim as written. And even if transmission were required, we agree with the Examiner that Shaw teaches or suggests “‘transferring’ the data types, such [as] actor data and AI data.” Ans. 16.

Accordingly, we sustain the Examiner’s rejection of claim 21, and claim 31, which Appellant argues is patentable for similar reasons. *See* App. Br. 35; 37 C.F.R. § 41.37(c)(1)(iv).

Claims 22, 23, 32, and 33

Claim 22 recites “said step of queueing comprises queueing less than all *structure data* within said first set of virtual world content and said

³ We note that “object data” appears twice in this list. In the event of further prosecution, consideration may be given to an amendment to eliminate the repetition.

second set of virtual world content” (emphasis added). Claim 32 similarly recites “to queue less than all *structure data*” (emphasis added).

The Examiner finds Shaw “teaches . . . the entirety of the results [of] a *player’s moves* need not be transmitted, as ‘only a small amount of information need be transmitted’, which indeed represents ‘less than all’ of all possible such information.” Ans. 17–18 (emphasis added). However, we agree with Appellant that “a player’s moves” are not “structure data.” App. Br. 24. Thus, the Examiner has not sufficiently tied Shaw’s “less than all” specifically to the claimed “structure data.”

Accordingly, we are constrained to not sustain the Examiner’s rejection of claims 22 and 32, or their dependent claims 23 and 33.⁴

Claims 28 and 37

Claims 28 and 37 recite “defin[ing] at least one story line associated with said avatar” and “determin[ing] a next most likely element . . . based on said story line.”

The Examiner finds “the storyline is the current game state that brought the player to the point of using the weapon at that time.” Ans. 22. However, this is an unreasonably broad interpretation of “story line.” Moreover, Shaw does not teach or suggest what brought the player to the current point. The Specification discloses “[s]tory line 404 comprises multiple sequential story elements,” and “a story element comprises a story

⁴ In the event of further prosecution, the Examiner may wish to consider whether Rasinski’s queueing and transmitting only visible threats within an aircraft’s line of sight—and only active threats rather than defeated threats—teaches or suggests “less than all structure data.” See Rasinski 12:3–28. Similarly, the Examiner may wish to consider Hero Quest revealing some data within a structure (e.g., objects within line of sight) but not others (e.g., objects blocked by a wall, or hidden traps). See Hero Quest 13, 15, 17–18.

event, such as finding an object or solving a puzzle.” Spec. ¶¶ 42–43. We agree with Appellant that the Examiner has not shown Shaw teaches or suggests such a story line nor determining likely elements based on story lines. App. Br. 25–28.

Accordingly, we are constrained to not sustain the Examiner’s rejection of claims 28 and claim 37.⁵

DECISION

For the reasons above, we affirm the Examiner’s decision rejecting claims 19–21, 24–27, 29–31, and 34–36.

We reverse the rejection of claims 22, 23, 28, 32, 33, and 37.

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-IN-PART

⁵ In the event of further prosecution, the Examiner may wish to consider whether the quests in Hero Quest teach or suggest a story line, and whether a combination of Hero Quest with Shaw would teach or suggest that certain player moves are predictable and cached based on such a story line. *See* Hero Quest 12 (“It is important that the Heroes understand the history behind the Quest and the goal set before them.”).