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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PHILIP McNALLY and MATTHEW LOW

Appeal 2018-003042
Application 13/802,671
Technology Center 2400

Before JEREMY J. CURCURI, BARBARA A. BENOIT, and PHILLIP A. BENNETT, *Administrative Patent Judges.*

BENNETT, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–7, 10–16, and 19–25. Claims 8, 9, 17, 18, 26, and 27 have been withdrawn. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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[1] We use the word "Appellant" to refer to "Applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as DreamWorks Animation LLC. Appeal Br. 2.

CLAIMED SUBJECT MATTER

In 3D animation, the illusion of depth perception is provided by using stereoscopic filming techniques which simulate human binocular vision and present slightly different viewpoints to a viewer's right and left eyes. Spec. ¶ 3. This illusion of depth perception makes computer-generated objects appear to extend outward from a two-dimensional screen. *Id.* One problem commonly faced by 3D animators is the problem of visual paradox. A visual paradox occurs when an object that protrudes from the screen plane is cutoff by the edge of the screen so as to appear simultaneously both in front of and behind the screen. *Id.* ¶ 6. Appellant's claims are directed to address problems related to visual paradox by inserting an opaque window object at the edge of the screen which is positioned between the computer-generated object and the viewer. Spec. ¶¶ 8–11. Because the window object appears in front of the computer-generated object, the computer-generated object is no longer cutoff by the screen behind the computer-generated object. Spec. ¶¶ 37–38. Instead, the visual paradox is resolved by masking or clipping the computer-generated object with the window object which appears to the viewer to be in front of, and not behind, the computer-generated object. Spec. ¶¶ 41–42.

Claim 1, reproduced below with the key limitation in *italics*, is illustrative of the claimed subject matter:

> 1. A computer-implemented method for placing a window object within a computer-generated scene, the computer-generated scene including a pair of stereoscopic cameras adapted to capture an image of at least one computer-generated object and the window object, the method comprising:
>
> obtaining a left portion and right portion of the image along the left and right edges of the image;

> *identifying the nearest computer-generated object to the pair of stereoscopic cameras within the left and right portions of the image*;
>
> placing the window object between the identified computer-generated object and the stereoscopic cameras at an offset distance from the identified computer-generated object; and
>
> storing, in a computer memory, the location of the window object.

Appeal Br. 36 (Claims Appendix).

REFERENCES

Name	Reference	Date
Montgomery	US 6,512,892 B1	Jan. 28, 2003
Redmann	US 2013/0010093 A1	Jan. 10, 2013
Ronfard et al., "Image and Geometry Processing for 3-D Cinematography," Geometry and Computer, Vol. 5, ISBN 978-3-642-12391-7, 2010 ("Ronfard")		
Autodesk, Stereoscopic Filmmaking Whitepaper (2008) ("Autodesk")		
1080p, Wikipedia, the free encyclopedia, downloaded from Internet Wayback Machine, October 8, 2010 ("Wiki-1080p")		

REJECTIONS

Claims 1, 2, 6, 7, 10, 11, 15, 16, 19, 20, 24, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Redmann and Ronfard. Final Act. 2–6.

Claims 2, 11, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Redmann, Ronfard, and Montgomery. Final Act. 6–7.

Claims 3, 12, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Redmann, Ronfard, and Autodesk. Final Act. 7.

Claims 4, 5, 13, 14, 22, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Redmann, Ronfard, and Wiki-1080p. Final Act. 7–8.

ISSUE

Has the Examiner erred in finding Redmann and Ronfard teach or suggest "identifying the nearest computer-generated object to the pair of stereoscopic cameras within the left and right portions of the image," as recited in claim 1?

ANALYSIS

The Examiner rejects claim 1 as being obvious over Redmann and Ronfard. Relevant here, the Examiner relies primarily on Redmann as teaching "identifying the nearest computer-generated object to the pair of stereoscopic cameras within the left and right portions of the image." Final Act. 3 (citing Redmann ¶¶ 62, 68, 80, and 81), 4 (citing Ronfard § 4.1).

With respect to Redmann, the Examiner explains:

> Redmann discloses scenarios for identifying the nearest computer-generated object to a viewer first on a left side and then on a right side. The claim language does not explicitly require identifying the nearest computer-generated object to a viewer within the left and right portions of the image at the same time, only that the nearest computer-generated object to a viewer is identified for both the left side and the right side.

Ans. 10. The Examiner additionally cites Ronfard, finding that "Ronfard teaches a pair of stereoscopic cameras adapted to capture the stereoscopic image pair and identifying a computer-generated object to the pair of stereoscopic camera within the left and right portions of the image." Ans. 11 (internal citations omitted). The Examiner explains that "[s]ince Ronfard discusses placing a floating window object relative to the 3-D scene and the stereoscopic (left and right) cameras that shoot the object in the 3-D scene, Examiner maintains that Ronfard discloses identifying a computer-generated object to the pair of stereoscopic cameras within the left and right portions of the image." Ans. 11.

Appellant contends the Examiner erred because neither reference, alone or in combination, teaches "identifying the nearest computer-generated object to the pair of stereoscopic cameras within the left and right portions of the image." Appeal Br. 10–16. Specifically, Appellant argues the claim is properly understood to require that the recited "identifying" must yield a *single* object that is nearest to the pair of stereoscopic cameras (i.e., the viewer). Appeal Br. 15. That is, the identifying step considers the objects in the left portion of the image and the objects in the right portion of the image, and selects the single, closest object from among them. Appellant asserts that neither reference teaches identifying a single object that is nearest the stereoscopic cameras.

With respect to Redmann, Appellant argues "the cited portions of Redmann teach identification of at least two objects, one for a left side of an image and another for a right side of an image, respectively." Reply Br. 6. Thus, according to Appellant, "Redmann discloses identification of two distinct objects, a first within [] a left region and a second within a right region, in distinct contrast to the singular object set forth in claim 1." Reply Br. 6. Appellant also disputes the Examiner's findings with respect to Ronfard, arguing that "Ronfard makes no reference to identifying any object in any manner, much less the manner claimed." Appeal Br. 16.

We are persuaded by Appellant's arguments. As discussed above, Appellant's invention seeks to correct the visual paradox problem which occurs when a foreground object is cut off by the edge of the viewing area causing the object to simultaneously appear to be both in front of the screen and behind the screen. Claim 1 recites placing a window between the viewer and the *identified, forward-most object* so that the object appears to be behind the window and no longer appears to be cutoff by the background screen.

Redmann teaches a process by which two objects—the foremost object in the left side of the image and the foremost object in the right side of the image—are separately identified and used to create floating edges on each side. Redmann ¶ 51, 53. We agree with Appellant that Redmann does not describe identifying the single, closest object of the two identified objects. Nor does the Examiner provide any reasoning for why a skilled artisan would have been motivated to modify Redmann to make such an identification. Without any such reasoning, we are constrained by the record before us to conclude the Examiner has erred in finding Redmann teaches the "identifying" step of claim 1.

We find Ronfard similarly deficient. Ronfard generally describes the use of a floating window to address conflicting visual cues in 3-D animation. Ronfard §§ 4.1–4.3. However, we agree with Appellant that Ronfard does not teach or suggest identifying the single, closest object to the cameras as required by the claim 1. As such, we are persuaded the Examiner erred in rejecting claim 1, and we do not sustain its rejection. For the same reasons, we also do not sustain the rejection of independent claims 7, 10, 16, 19, and 25 which recite the same "identifying" limitation.

Remaining Claims

The remaining claims depend from one of independent claims 1, 7, 10, 16, 19, and 25. By virtue of their respective dependencies, these claims also stand.

CONCLUSION

The Examiner's rejections are reversed.

DECISION SUMMARY

Claims Rejected	**35 U.S.C. §**	**Reference(s)/Basis**	**Affirmed**	**Reversed**
1, 2, 6, 7, 10, 11, 15, 16, 19, 20, 24, 25	103	Redmann, Ronfard		1, 2, 6, 7, 10, 11, 15, 16, 19, 20, 24, 25
2, 11, 20	103	Redmann, Ronfard, Montgomery		2, 11, 20
3, 12, 21	103	Redmann, Ronfard, Autodesk		3, 12, 21
4, 5, 13, 14, 22, 23	103	Redmann, Ronfard, Wiki-1080p		4, 5, 13, 14, 22, 23
Overall Outcome				1–7, 10–16, 19–25

REVERSED