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MICROSOFT CORPORATION ONE MICROSOFT WAY REDMOND, WA 98052			LHYMN, SARAH	
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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* SCOTT RAMSBY, JOE THOMPSON, DAN OSBORN, SHAWN  
CRISPIN WRIGHT, BRIAN KRAMP, MEGAN SAUNDERS, and  
FOREST WOODCROFT GOUIN

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Appeal 2018-006164  
Application 14/745,151  
Technology Center 2600

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Before MAHSHID D. SAADAT, CARL L. SILVERMAN, and  
MICHAEL J. ENGLE, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>2</sup> appeals from the Examiner's decision to reject claims 1–20, which are all the claims in this application. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> An oral hearing was held for this appeal on January 9, 2020.

<sup>2</sup> 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 Microsoft Technology Licensing, LLC. Appeal Br. 3.

### STATEMENT OF THE CASE

Appellant’s disclosure is directed to adjusting a displayed augmented reality object with respect to the field of view (FOV) of a wearer of a near-eye display device. In particular, the disclosed system creates “a virtual spring” by defining “a target region of interest of the augmented reality object . . . as well as overlap parameters that define how much of the target region of interest is to be displayed,” which “allows the augmented reality object to stay in a relatively stable position when the FOV changes by a small amount and then quickly pulls the augmented reality object along with the FOV when the FOV moves by a larger amount.” Spec. ¶ 13.

Claim 1 is illustrative of the invention and reads as follows:

1. A wearable, head-mounted display system comprising:

a near-eye display to display an augmented reality object perceivable at an apparent real world location by a wearer of the head-mounted display system; and

a controller to adjust the apparent real world location of the augmented reality object as a function of a field of view (FOV) of the wearer, including moving the apparent real world location of the augmented reality object along with the FOV when the FOV is changing, the function based on a bounding region of the augmented reality object and one or more overlap parameters between the bounding region of the augmented reality object and the FOV of the wearer.

### REFERENCES AND REJECTIONS

The prior art relied upon by the Examiner is:

Name	Reference	Date
Adamczyk	US 5,577,961	Nov. 26, 1996
Southworth	US 2012/0275755 A1	Nov. 01, 2012
Vaught	US 2013/0021373 A1	Jan. 24, 2013
Cajigas	US 2013/0120224 A1	May 16, 2013

Grinberg	WO 2013/171731 A1	Nov. 21, 2013
Fyke	US 2014/0225898 A1	Aug. 14, 2014

Claims 1–13, 15, and 17–20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Fyke, Cajigas, Vaught, and Southworth. Final Act. 4–25.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Fyke, Cajigas, Vaught, Southworth, and Grinberg. Final Act. 26.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Fyke, Cajigas, Vaught, Southworth, and Adamczyk. Final Act. 27.

#### ISSUE ON APPEAL

Appellant’s arguments in the Appeal Brief present the following dispositive issue<sup>3</sup>:

Whether the Examiner erred in finding the combination of Fyke, Cajigas, Vaught, and Southworth teaches or suggests the following limitation recited in independent claims 1, 17, and 20:

a controller to adjust the apparent real world location of the augmented reality object *as a function of a field of view (FOV)* of the wearer, including moving the apparent real world location of the augmented reality object along with the FOV when the FOV is changing, *the function based on a bounding region of the augmented reality object and one or more overlap parameters between the bounding region of the augmented reality object and the FOV of the wearer.*

Appeal Br. 15–22.

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<sup>3</sup> We do not address Appellant’s other contentions because this contention is dispositive of the issue on appeal.

## ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellant’s contentions in the Appeal Brief and the Reply Brief that the Examiner has erred, as well as the Examiner’s response to Appellant’s arguments in the Appeal Brief.

For the limitation at issue, the Examiner relies on the disclosure in Cajigas of a processor that determines the FOV and adjusts “the apparent real world location of a virtual object (augmented reality object) as a function of changing FOV of the user” and the disclosure in Vaught of moving “an augmented real[i]ty image as the HMD device moves, or along with the FOV when the FOV is changing.” Final Act. 6 (citing Cajigas ¶¶ 31, 34, 45–49, 70–78; Vaught ¶ 153). The Examiner also relies on the disclosure in Southworth of incorporating a bounding box for a graphical object “whereby the virtual object being able to move according to such control within a boundary that is set relative to a marker corresponds to Applicant’s claimed ‘bounding region of the augmented reality object.’” Final Act. 6 (citing Southworth ¶¶ 56–58). Finally, the Examiner finds the disclosure in Fyke of using “a hypothetical spring joining an augmented reality object to an anchor location” teaches “*the function based on a bounding region of the augmented reality object and one or more overlap parameters between the bounding region of the augmented reality object and the FOV of the wearer*, the overlap parameters relating to the spring constant.” Final Act. 7 (citing Fyke Fig. 4, ¶¶ 68–73).

Appellant argues “Southworth identifies a distinctive real-world marker in the real-world environment, and presents a graphics object (e.g., a virtual pet) such that it appears to the user at the position of the real-world

object.” Appeal Br. 16. Appellant points to paragraph 56 of Southworth and argues the location of the disclosed “bounding box” does not change with a changing FOV, which is different from the claimed “bounding region” that causes the augmented reality object to be adjusted as a function of FOV. *Id.* Appellant further contends Fyke fails to disclose the recited “one or more overlap parameters between the bounding region . . . and the FOV” because the “spring function” of Fyke “is used to tether the identifier to its tracked object,” and is not in the form of an overlap that “in tandem with a bounding region of the identifier, influence[s] how the identifier moves with a FOV of the wearer.” Appeal Br. 17–18.

In response, the Examiner explains the proposed rejection is based on the combination of the references. Ans. 9–11. The Examiner finds combining the bounding box for a graphical object in Southworth with the hypothetical spring joining an augmented reality object to another location in Fyke would have taught or suggested the claimed “the function based on a bounding region of the augmented reality object and **one or more overlap parameters between the bounding region of the augmented reality object and the FOV of the wearer.**” Ans. 11.

To the extent the spring 501 of Fyke joining the object 310 and the identifier 311 can be characterized as “a bounding region,” such connection relates the way an object moves according to spring physics. *See* Fyke ¶¶ 68–73. We find no teaching or suggestion in Fyke of describing the movement of an augmented object with respect to the movement of FOV of the wearer. In addition, as Appellant argues, although Southworth discloses “an associated bounding box that defines how far the graphics object may move away from the real-world object,” the recited relationship between the

augmented reality object and the FOV of the wearer is not discussed. Reply Br. 8. We also agree with Appellant’s assertion that “the location of Southworth’s bounding box never changes, even when the FOV of the wearer changes.” *Id.*

Accordingly, we agree with Appellant that the Examiner does not provide prima facie support for the rejection. “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Therefore, on the record before us, we are constrained to find the Examiner errs in rejecting independent claims 1, 17, 20 as obvious.

#### CONCLUSION

For the reasons stated above, we do not sustain the obviousness rejection of independent claims 1, 17, and 20, as well as claims 2–13, 15, and 18–20 dependent therefrom, over *Fyke*, *Cajigas*, *Vaught*, and *Southworth*. The Examiner has not relied upon the additional references to teach or suggest the above-identified limitation in rejecting claims 14 and 16. *See* Final Act. 26–27. Accordingly, for reasons similar to those above for independent claims 1, 17, and 20, we do not sustain the remaining rejections.

#### DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–13, 15, 17–20	103(a)	<i>Fyke</i> , <i>Cajigas</i> , <i>Vaught</i> , <i>Southworth</i>		1–13, 15, 17–20

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<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
14	103(a)	Fyke, Cajigas, Vaught, Southworth, Grinberg		14
16	103(a)	Fyke, Cajigas, Vaught, Southworth, Adamczyk		16
<b>Overall Outcome</b>				1-20

REVERSED