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EXAMINER
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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* ALBERTO FERNANDEZ DELL OCA

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Appeal 2015-004363  
Application 13/502,808<sup>1</sup>  
Technology Center 2600

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Before DANIEL N. FISHMAN, SHARON FENICK, and  
JOHN R. KENNY, *Administrative Patent Judges*.

FENICK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 7–15, all pending claims of the application. (Appeal Br. 1.) We have jurisdiction under 35 U.S.C. § 6(b)(1).

We affirm.

*Invention*

Appellant's invention relates to positioning a hollow needle and a wire held by the hollow needle into a bone. (Abstract.) An X-ray image of the bone, hollow needle, and wire is captured. (*Id.*) A 3D model of the

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<sup>1</sup> Appellant identifies Siemens Aktiengesellschaft as the real party in interest. (Appeal Br. 1.)

bone, hollow needle and wire is opened, and used to determine the position of the actual bone, hollow needle, and wire. (*Id.*)

*Representative Claim*

Claim 7, reproduced below, is representative:

7. A method of determining a relative position of a hollow needle with a wire partially held by the hollow needle and a bone of a creature, comprising the following steps:

i) acquiring into a computer an X-ray image of the hollow needle inserted into the creature, with the X-ray image including at least an image of:

the bone of the creature;

the hollow needle; and

the wire inserted inside of the hollow needle into a bone region;

ii) opening a 3D virtual bone model of the bone region, the bone region including:

a virtual bone;

a virtual hollow needle; and

a virtual wire;

iii) opening a 3D virtual model of the hollow needle actually used and the wire actually used;

iv) assessing a 3D virtual exact position of the hollow needle and wire actually used with respect to the bone region by freely moving, rotating and zooming the 3D virtual bone, virtual hollow needle, and virtual wire.

*Rejections*

The Examiner rejects claims 7 and 9 under 35 U.S.C. § 103(a) as unpatentable over Sukovic et al. (US 2005/0075563 A1; Apr. 7, 2005) and von Jako et al. (US 2006/0063998 A1; Mar. 23, 2006). (Final Action 4–6.)

The Examiner rejects claim 8 under 35 U.S.C. § 103(a) as unpatentable over Sukovic, von Jako, and Shahidi (US 6,167,296; Dec. 26, 2000). (Final Action 6.)

The Examiner rejects claim 10 under 35 U.S.C. § 103(a) as unpatentable over Sukovic, von Jako, and Lieberman (US 2006/0085010 A1; Apr. 20, 2006). (Final Action 6–7.)

The Examiner rejects claims 11 and 12 under 35 U.S.C. § 103(a) as unpatentable over Sukovic, von Jako, Lieberman, and Garcia-Bengochea et al. (US 2008/0221586 A1; Sept. 11, 2008). (Final Action 7–8.)

The Examiner rejects claim 13 under 35 U.S.C. § 103(a) as unpatentable over Sukovic and Crainich et al. (US 2008/0249481 A1; Oct. 9, 2008). (Final Action 9–10.)

The Examiner rejects claims 14 and 15 under 35 U.S.C. § 103(a) as unpatentable over Sukovic, Crainich, Lieberman, and Garcia-Bengochea. (Final Action 10–12.)

#### *Issues*

(A) Did the Examiner err in finding that the combination of Sukovic and von Jako teaches or suggests “a 3D virtual bone model of the bone region . . . including: a virtual bone; a virtual hollow needle; and a virtual wire,” as recited in claim 7?

(B) Did the Examiner err in finding that the combination of Sukovic and von Jako teaches or suggests “assessing a 3D virtual exact position of the hollow needle and wire actually used with respect to the bone region by freely moving, rotating and zooming the 3D virtual bone, virtual hollow needle, and virtual wire,” as recited in claim 7?

(C) Did the Examiner err in combining Sukovic and von Jako in the rejection of claim 7?

## ANALYSIS

*(A) “a 3D virtual bone model of the bone region . . . including: a virtual bone; a virtual hollow needle; and a virtual wire”*

The Examiner finds that the combination of Sukovic and von Jako teaches or suggests all the elements of claim 7, including a 3D virtual bone model of a bone, hollow needle, and wire. (Final Action 4–5.)

Sukovic relates to an image-guided robotic surgical system including CT scanning. (Sukovic, Abstract.) A low dose scan of a general area of interest of the patient’s body is performed and “a three-dimensional model or image” is displayed. (*Id.* ¶ 18.) This display is continuously updated using additional images prior to and during a procedure. (*Id.* ¶¶ 19–20.) The Examiner maps these teachings of Sukovic, in combination with von Jako’s teachings, to the claimed 3D virtual model of the bone region in claim 7. (Final Action 4–5; Answer 11–12.)

Appellant argues that Sukovic does not teach or suggest a virtual model at all. (Appeal Br. 6–8.) Appellant contends that because “Sukovic’s images are all real X-ray images” and “[t]he 3D model displayed/selected by Sukovic is an actual X-ray image” that Sukovic does not teach or suggest a virtual 3D model. (Appeal Br. 8.)

The Examiner finds that

the model is distinguished from the actual bone, actual hollow needle, and actual wire, because the model is constructed from images and resides solely on the computer, whereas the actual bone, actual needle, and actual wire do not reside on a computer.

(Answer 12.) Thus, the Examiner finds, in accordance with a broadest reasonable interpretation of “virtual model,” Sukovic’s model is a virtual model. (*Id.* 11–13.)

We agree with the Examiner’s claim interpretation. Additionally, we note that Appellant’s invention also uses data from actual images in Appellant’s model in order to more accurately represent the surgical situation. (Spec. ¶ 29, “The adaptation of the models to the images takes place with a 2D/3D registration.”)

Appellant additionally argues, with respect to the claim’s inclusion of virtual elements in the bone region being modeled, that neither Sukovic nor von Jako “deal with any virtual objects and with 3D modeling of virtual objects.” (Appeal Br. 8–9.) However, we agree with the Examiner that a 3D model, constructed from images and residing on a computer, would include virtual elements. (Answer 12.)

Therefore, we are not convinced that the Examiner erred in finding that Sukovic teaches the claimed 3D model.

*(B) “assessing a 3D virtual exact position of the hollow needle and wire actually used with respect to the bone region by freely moving, rotating and zooming the 3D virtual bone, virtual hollow needle, and virtual wire”*

The Examiner finds that the combination of Sukovic and von Jako teaches or suggests the disputed limitation of “assessing a 3D virtual exact position . . . by freely moving, rotating[,] and zooming the 3D virtual bone, virtual hollow needle, and virtual wire. (Final Action 4–5.)

Appellant argues that Sukovic does not teach the manipulation of a model, but only of a displayed image. (Appeal Br. 4–5, 9.) Additionally, Appellant argues that the claim language requires that the model objects

(virtual bone, virtual hollow needle, and virtual wire) be movable independently of each other. (*Id.* 9–10.) Appellant argues that, “[t]he claims do not manipulate these elements together and as one.”

We agree with the Examiner’s findings with respect to these arguments. (Final Action 4–5; Answer 11–13.) Sukovic discloses that a three-dimensional model is generated and displayed, and that this display can be rotated, enlarged, or manipulated during the procedure. (Sukovic ¶¶ 18–19.) The inclusion of rotation in the Sukovic disclosure indicates that Sukovic’s manipulation is not limited to not simple two-dimensional image manipulation.

Although Appellant argues in a conclusory fashion that the claim language, properly interpreted in light of the Specification, requires the independent movement of the elements represented in the model (Appeal Br. 10), this conclusory argument does not convince us of error in the Examiner’s conclusions regarding the proper interpretation of the claim and Sukovic’s teachings.

*(C) Combination of Sukovic and von Jako*

Appellant argues that the combination of Sukovic and von Jako would “destroy the intended functionality” of the Sukovic invention. (Appeal Br. 8.)

We disagree. A skilled artisan would “be able to fit the teachings of multiple patents together like pieces of a puzzle” because the skilled artisan is “a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420–21 (2007). On this record, Appellant does not present evidence that the combination of the cited references was “uniquely challenging or difficult for one of ordinary skill in the art” or

“represented an unobvious step over the prior art.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418–19). Therefore, we are not convinced that the combination of Sukovic and von Jako would not function.

### *Conclusion*

Thus, we are not persuaded that the Examiner erred in rejecting claim 7 under 35 U.S.C. § 103(a) as unpatentable over Sukovic and von Jako, or independent claim 13 (argued on the same basis) under 35 U.S.C. § 103(a) as unpatentable over Sukovic and Crainich. Additionally, we are not persuaded of error in the rejection of dependent claims 8–12, 14, and 15, argued on the same basis, under 35 U.S.C. § 103(a) (claims 4, 6–8, 10, 14, 16–18, and 20–24) as unpatentable over Sukovic in various combinations with other prior art.

### DECISION

We affirm the Examiner’s decision rejecting claims 7–15 under 35 U.S.C. § 103(a) as unpatentable.

Pursuant to 37 C.F.R. § 1.136(a)(1)(iv), no time period for taking any subsequent action in connection with this appeal may be extended.

AFFIRMED