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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHRISTOPHER J. SENESAC

Appeal 2017-011357
Application 14/467,706¹
Technology Center 2100

Before THU A. DANG, MATTHEW J. McNEILL, and SCOTT E. BAIN,
Administrative Patent Judges.

BAIN, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–12, 17–22, and 24–26, which constitute all claims pending in the application. Claims 13–16 and 23 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellant identifies The Boeing Company as the real party in interest. App. Br. 2.

STATEMENT OF THE CASE

The Claimed Invention

Appellant's claimed invention relates to aircraft assembly, and particularly, to providing contextual information for parts (such as location to find a part, where it goes on the aircraft, how it is assembled, etc.) in complex assemblies that typically span many locations and many workers. Spec. ¶¶ 3–9. Claims 1 and 17 are independent. Claim 1 is illustrative of the invention and the subject matter of the appeal, and reads as follows:

1. A method for visualizing a group of parts in an aircraft during manufacture of the aircraft, the method comprising:

receiving a shop order instance at a processor, the shop order instance defining instructions for assembling a particular assembly and providing an identification of parts for the particular assembly, the particular assembly to be assembled in the aircraft as part of manufacture of the aircraft;

identifying, by the processor, a volume in the aircraft from the shop order instance, wherein the volume is a physical volume within the aircraft where the particular assembly is to be located in the aircraft;

identifying, using the processor, a group of parts for the particular assembly within the volume;

displaying, on a display device in communication with the processor, the group of parts within the volume on a display system to form a visualization, wherein the visualization enables locating the group of parts within the aircraft; and

displaying, on the display device together with the group of parts, instructions from the shop order instance, the instructions describing how the group of parts are to be assembled.

App. Br. 2 (Claims App'x).

Prior Art

The Examiner relies upon the following prior art:

Nelson	US 6,487,479 B1	Nov. 26, 2002
McCloskey	US 2012/0304059 A1	Nov. 29, 2012
Xu et al.	US 2012/0306666 A1	Dec. 6, 2012

The Rejection on Appeal

Claims 1–12, 17–22, and 24–26 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Xu et al. (“Xu”), Nelson, and McCloskey. Final Act. 5–16.

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellant’s arguments presented in this appeal. Arguments which Appellant could have made but did not make in the Brief are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv). On the record before us, we are not persuaded the Examiner erred. We adopt as our own the findings and reasons set forth in the rejections from which the appeal is taken and in the Examiner’s Answer, and provide the following discussion for highlighting and emphasis.

Appellant argues the Examiner erred in finding the prior art teaches or suggests “identifying, by the processor, a volume in the aircraft from the shop order instance,” as recited in claim 1.² App. Br. 9–10; Reply Br. 2–5. Specifically, Appellant contends the prior art teaches neither a “shop order

² Appellant and the Examiner group independent claims 1 and 17 for argument, and we choose claim 1 as representative. 37 C.F.R. § 41.37(c)(iv).

instance” nor determining a “volume” in an aircraft from the shop order instance. App. Br. 9–11. We, however, are not persuaded of error.

The Examiner relies on Nelson Figure 4, and its accompanying description, as teaching or suggesting a “shop order.” Figure 4 is reproduced below.

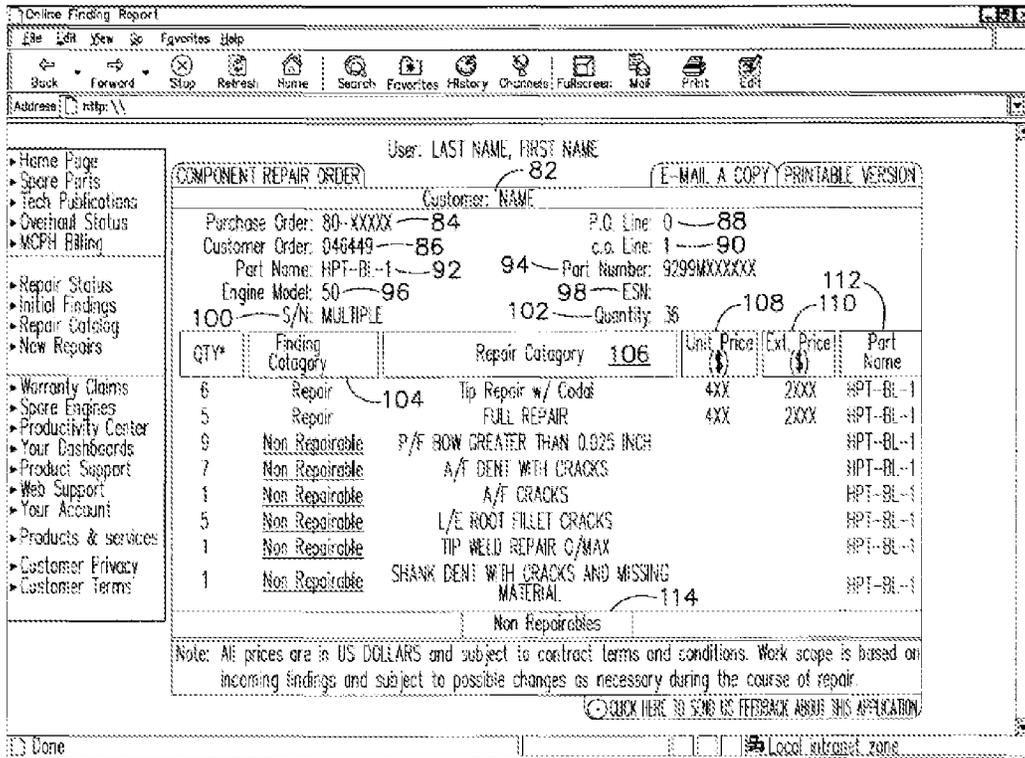


FIG. 4

As the Examiner finds, Figure 4 illustrates an aircraft component “repair order” containing a variety of information such as part name 92, part number 94, repair status, warranty, product support, and description of the part and repair. Nelson Fig. 4, col. 2, ll. 64–70, col. 3, ll. 19–45, col. 5, ll. 39–56; Ans. 6. Appellant’s Claim 1, similarly, recites that a shop order instance “defin[es] instructions for assembling a particular assembly and providing an identification of parts for the particular assembly.” App. Br. 2. Appellant’s definition in the Specification provides that a “shop order instance”

identifies “parts to be assembled, work instructions for assembling the parts, and a location where assembly should be performed.” Spec. ¶ 7.

We discern no error in the Examiner’s finding that Nelson Figure 4, and the accompanying description, teaches or suggests a “shop order instance” as Appellant uses the term. Figure 4 illustrates an aircraft parts order with a wide variety of information, including part name, part number, and links to assembly instruction. Although Figure 4 lacks an express reference to “location,” we find including that information would have been obvious to one of ordinary skill in the art, because the objective of the repair order plainly is to complete the repair (which would require knowing where the repair is to occur). Moreover, even if Nelson did not teach or suggest that element, Xu teaches “location information” of aircraft part repairs. Xu ¶ 56.

Regarding the claim limitation “volume in the aircraft,” as the Examiner observes, Appellant refers to “volume” not in the numerical sense, but to mean a three dimensional space within the aircraft. Spec. ¶¶ 11–12 (“A volume in the aircraft is identified. . . . The *group of parts within the volume* are displayed on a display system to form a visualization.”) (emphasis added). Similarly, as the Examiner finds, Xu teaches identifying a “zone” in aircraft repair, wherein the zone is a “volume” in which a particular part is located. Xu ¶ 56; Ans. 5. Accordingly, we discern no error in the Examiner’s finding that Xu teaches or suggests “identifying . . . a volume in the aircraft.” Xu does so based on information received via a list or log in process, Xu Fig. 9, ¶¶ 106–107, Ans. 5, and the Examiner combines this teaching with Nelson’s teaching of a “shop order instance” as being the source of information for repair. Accordingly, as the Examiner finds, the

combination teaches “identifying, by the processor, a volume in the aircraft from the shop order instance,” as recited in claim 1.

Appellant also argues that even if the prior art references (i.e., Xu, Nelson, and McCloskey) cumulatively teach or suggest the disputed limitations, the Examiner has not articulated a sufficient rationale or motivation for combining the references. App. Br. 10, 12–13; Reply Br. 9–10. We are not persuaded.

The Examiner finds one of ordinary skill in the art would combine McCloskey (directed to a visual instruction manual for “a product”) with Xu and Nelson (both directed to repair or assembly of aircraft parts) to “allow the system to provide further information than just a user manual which can be insufficient for repair and assembly purposes.” Final Act. 7. The Examiner elaborates in the Answer, observing that all three of Xu, Nelson, and McCloskey relate to the same objective of assembly of parts. Ans. 6–7; *Innovention Toys, LLC v. MGA Entertainment, Inc.*, 637 F.3d 1314, 1322–23 (Fed. Cir. 2011) (finding no error in combining references that share the “same purpose,” “goal,” or “objective”). Although McCloskey does not relate exclusively to “aircraft” assembly or repair (and illustrates toy assembly as one example), it describes a broadly applicable process of “interactive build instructions” that improves upon standard “build instructions” such as those described in Nelson. McCloskey Abstract, ¶ 1.

Appellant does not identify the alleged error in the combination, nor point to any evidence of record that the resulting arrangements of the cited references were “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 Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007)). On this record, we find the Examiner has provided adequately articulated reasoning, with rational underpinning, to support the combination of references and the conclusion of obviousness. *KSR*, 550 U.S. at 418.

Accordingly, for the foregoing reasons, we sustain the Examiner's obviousness rejection of independent claims 1 and 17. Appellant's arguments regarding the remaining claims are redundant to claim 1. App. Br. 19–21. For the reasons set forth above, we also sustain the obviousness rejections of the remaining claims.³

DECISION

We affirm the Examiner's decision rejecting claims 1–12, 17–22, and 24–26.

AFFIRMED

³ In the event of further prosecution, the Examiner and Appellant may wish to consider whether the claims constitute patent-ineligible subject matter under 35 U.S.C. § 101, in light of *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014).