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Patent Services
115 Tabor Road
P.O.Box 377
MORRIS PLAINS, NJ 07950

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AARON GANNON,
JOHN G. SUDDRETH,
and BLAKE WILSON

Appeal 2014-002641[1]
Application 12/276,934[2]
Technology Center 3600

Before MICHAEL C. ASTORINO, NINA L. MEDLOCK, and MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–4, 6–16, and 18–20. We have jurisdiction under 35 U.S.C. § 6(b).

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[1] Our decision references Appellants' Appeal Brief ("Appeal Br.," filed October 28, 2013) and Reply Brief ("Reply Br.," filed December 12, 2013), the Examiner's Answer ("Ans.," mailed November 25, 2013), and Final Office Action ("Final Act.," mailed August 15, 2013).

[2] Appellants identify Honeywell International, Inc. as the real party in interest (Appeal Br. 2).

We AFFIRM–IN–PART.

CLAIMED INVENTION

Appellants' claimed invention "relates to input and steering mechanisms and aircraft control systems for use on aircraft" (Spec. ¶ 1).

Claims 1 and 13 are the independent claims on appeal. Claim 1, reproduced below, with minor formatting changes and added bracketed notations, is illustrative of the subject matter on appeal:

> 1. An input/steering mechanism for use with an aircraft control system, the input/steering mechanism comprising:
>
> [a] a handlebar;
>
> [b] a first panel attached to the handlebar and extending in a direction away from both the handlebar and from a seat for a user;
>
> [c] a first portion of an alphanumeric keyboard disposed on the first panel configured to receive a manual input from a user and to transmit an output signal to the aircraft control system in response to the manual input; and
>
> [d] an input device disposed on the handlebar adjacent to the first portion of the alphanumeric keyboard, the input device configured to translate a two-dimensional motion of the input device to an output signal[.]

REJECTIONS

Claims 1, 6, 7, 9, 13, and 19 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps (US 2004/0007644 A1, pub. Jan. 15, 2004) and Boorman (US 2004/0059474 A1, pub. Mar. 25, 2004).

Claims 2 and 14 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps, Boorman, and Taylor (US 2009/0321583 A1, pub. Dec. 31, 2009).

Claims 3 and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps, Boorman, and Sankrithi (US 2005/0218610 A1, pub. Oct. 6, 2005).

Claims 4 and 16 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps, Boorman, Sankrithi, and Macklin (US 2008/0232891 A1, pub. Sept. 25, 2008).

Claims 8 and 18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps, Boorman, and Macklin.

Claims 10 and 11 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps, Boorman, and Francois (US 2010/0205333 A1, pub. Aug. 12, 2010).

Claims 12 and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Phelps, Boorman, and Lundberg (US 2006/0073856 A1, pub. Apr. 6, 2006).

ANALYSIS

Independent claims 1 and 13, and dependent claims 6, 7, and 19

Appellants argue claims 1, 6, 7, 13, and 19 as a group (*see* Appeal Br. 9–18). We select claim 1 as representative. The remaining claims stand or fall with claim 1. *See* 37 C.F.R. §41.37(c)(1)(iv).

In rejecting independent claim 1 under 35 U.S.C. § 103(a) as unpatentable over Phelps and Boorman, the Examiner finds that the combination of Phelps and Boorman discloses all that is claimed, but fails to "specifically teach that the panels are arranged extending in a direction away from both the handlebar and from a seat for a user or that the input device is adjacent to the first portion of the alphanumeric keyboard; however, these

are considered obvious elements of design choice" (Final Act. 4). The Examiner takes the position

> [i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the panel such that it is oriented in a direction away from a user seat, and to rearrange the input device adjacent to the first portion of the alphanumeric keyboard, with the motivation of providing the user with convenient access to the controls (e.g., a tall person with long arms would find the claimed configuration provides convenient access to the controls) (see: M[PEP], Chapter 2144.04, Section VI., Part C. "Rearrangement of Parts").

(*Id.*). The Examiner further reasons

> it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the panel such that it is oriented in a direction away from a user seat, and to position the input device adjacent to the first portion of the alphanumeric keyboard, with the motivation of forwardly disposing the prior art elements within convenient reach of an operator seated in the operator seat (see: Phelps, paragraph 72), and/or with the motivation of making the data entry device(s) accessibly positioned forward of the pilot(s) (see: Boorman, paragraph 27).

(*Id.*).

Appellants argue that the Examiner erred in "rel[ying] on *In re Japikse*, 86 USPQ 70 (CCPA 1950) and § 2144.04(VI)(C) of the MPEP in support of his rejection" because "neither Phelps nor Boorman themselves provide motivation to arrange the first/second panels with the alpha numeric keyboards as required by the claims. Nor do they provide a motivation to dispose an input device on the handlebar adjacent to the first portion of the alphanumeric keyboard" (Appeal Br. 11; *see also* Reply Br. 3–5). More particularly, Appellants argue "the Examiner cannot point to an **express motivation** in the references to extend the control pane 36 away from the

user seat 34 and handle bar" to support a finding of obviousness based on rearrangement of parts (*see* Appeal Br. 10–13 (citing *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, (BPAI 1984))). Instead, Appellants argue

> the Examiner merely **speculates** in regard to Phelps and Boorman that a motivation to orient the panel in a direction away from the user's seat and handlebar would be for the **convenience of tall people with long arms** and to make the data entry device(s) accessibly positioned forward of the pilots.

(Appeal Br. 12).

Appellants' arguments are not persuasive of error in the Examiner's rejection at least because the Examiner does not rely solely on legal precedent as the source of rationale; but rather, provides motivation for the proposed modification of Phelps and Boorman, i.e., "it would have been obvious to rearrange the prior art elements into the claimed configuration with the motivation of providing the user with convenient access to the controls" (Ans. 4; *see also id.* at 5 (citing Phelps ¶ 72; Boorman ¶ 27, Figs. 1 and 4)).

In making this determination, we note that Phelps is directed to "to an ultralight coaxial helicopter system" with a "fly-by-wire" control scheme that receives pilot input "through a control panel, control stick," e.g., "a handlebar-like yoke, and a throttle lever" (Phelps ¶¶ 2, 20; *see also id.* ¶ 74). Phelps discloses "[a]n operator seat **34** and flight controls (including control panel **36**, control stick **38**, and throttle lever **40**) are located on a forward boom **42** extending forwardly from the frame **12**, below the coaxial rotor set **16**, along with a pair of footrests **44** for the operator" (*id.* ¶ 45). Phelps further discloses that an "electronic controller receives control input from the flight controls, including the control panel **36**, control stick **38**, and

throttle lever **40**, which are manipulated by the operator, and are forwardly disposed on the airframe within convenient reach of an operator seated in the operator seat." (*id.* ¶ 72; *see also id.* ¶ 84). More particularly, Phelps discloses that "control panel **36** preferably includes a conventional key-operated ignition switch **252**, and a variety of indicators and gauges **254**, as desired, for monitoring the functions of the craft. These may include engine rpm and fuel level gauges, electrical and safety system indicator lamps, and even attitude, altitude, and heading indicators, etc." (*id.* ¶ 72; *see also id.* ¶ 81).

Phelps also discloses that "the control stick **38** may be a joystick-type controller" in an alternative configuration to its handlebar-type control stick configuration (*id.* ¶ 76). In this configuration, "[t]he joystick may also include a throttle control button **278**, to replace the throttle control lever **40**. This button is preferably located atop the joystick, and is operable by the user's thumb, though other configurations may be employed" (*id.* ¶ 77). Phelps further discloses that "[t]his configuration advantageously allows complete one-handed control of the helicopter, allowing the user the make control changes while also handling equipment such as binoculars, a camera, etc." (*id.*).

We also note that Boorman is directed "to apparatuses and methods for displaying autoflight information and controlling auto flight systems" (Boorman ¶ 1). In this regard, Boorman discloses

> the flight deck **300** can include a first data entry device **460**, a second data entry device **462**, and an autoflight performance selector **450**. In one aspect of this embodiment, the first data entry device **460** can be accessibly positioned forward of the first pilot seat **402** and/or the second pilot seat **404**, and can include an alphanumeric keypad, a cursor control device (e.g., a track

> ball or touch screen), and/or a display screen for entry and/or manipulation of alphanumeric flight guidance data, such as strategic flight guidance data.

(*Id.* ¶ 27).

To the extent that the Examiner's reason for "rearrang[ing] the panel [of Phelps] such that it is oriented in a direction away from a user seat, and to position the input device adjacent to the first portion of the alphanumeric keyboard" of Boorman, is not expressly disclosed in Phelps or Boorman, the absence of such a statement in either reference is not fatal to the rejection on appeal. *See DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361 (Fed. Cir. 2006) ("The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself."). And, absent evidence of unexpected results on the record, we agree with the Examiner that it would have been obvious to rearrange the orientation of Phelps' control panel 36 and include the functionality provided by Boorman's alphanumeric keyboard and cursor control device, as the Examiner proposes (*see* Final Act. 2–4; *see also* Ans. 4–9). *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious.").

Further, as the Examiner points out, Phelps discusses that a control panel forwardly disposed places it "within convenient reach of an operator seated in the operator seat" and Figure 4 of Boorman depicts an alphanumeric keyboard placed "extending in a direction away from both the

handlebar and from a seat for a user," as the claim requires (*see* Ans. 5–7; *see also* Phelps ¶ 72; Boorman, Fig. 4). We note Appellants do not show that the Examiner's combination would do more than yield expected results, and consequently, the Appellants' arguments are unpersuasive as to error in the rejection.

Appellants also argue "because modifying Phelps by attaching the laptop 460 from Boorman to satisfy all of the claims elements would render the control stick 38 unfit for its intended purpose, all of the Examiner's contrived motivations to modify Phelps by the teachings of Boorman are effectively rebutted" (Reply Br. 5–7; *see also* Appeal Br. 14–18). More particularly, Appellants take the position:

> To modify Phelps by Boorman as asserted by the Examiner and still meet all of the claim limitations, one must necessarily attach the laptop 460 "as is" to the handlebar (not numbered) of Phelps (or the yoke shown in Boorman) to provide the panel extending away from the seat as well as the keyboard.

(Reply Br. 6–7).

Appellants' argument is not persuasive as it is based on the bodily incorporation of Boorman's laptop 460 (*see* Boorman ¶ 27, *see also id.* at Fig. 4) into Phelps' flight controls system (*see* Phelps ¶ 72; *see also id.* at Figs. 3, 4, 6). The test for obviousness is not whether the features of one reference may be bodily incorporated into the structure of another reference. Rather, the test is what the combined teachings of those references would have suggested to a person of ordinary skill in the art. *See In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) ("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.").

The Examiner does not propose any bodily incorporation of Boorman into Phelps or vice versa, but rather, proposes that one of ordinary skill in the art would recognize that it would be obvious to "combine the handlebar assembly elements of Phelps with the data entry and communication device assembly elements of Boorman" (Ans. 9). And, as the Examiner points out, "it is not that the keyboard of Boorman is in some way strapped to the handlebar of Phelps" (*id.* at 8), it is "the input devices in this case (e.g., cursor device and alphanumeric keys" that "are combined with the control panel already on the handlebar as taught by Phelps" (*id.* at 9). Here, we note that the Examiner's proposed combination does not fundamentally change the technical basis of how Phelps' control panel would operate; but rather, only modifies the control panel to the extent it would include "the data entry and communication device assembly elements of Boorman" (*id.*). Thus, the Examiner's proposed combination would not render Phelps unsatisfactory for its intended purpose or change its basic principles of operation. Consequently, Appellants' argument is unpersuasive because the Examiner does not propose any bodily incorporation of Phelps into Boorman or vice versa.

In view of the foregoing, we sustain the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a). We also sustain the Examiner's rejection of claims 6, 7, 13, and 19, which fall with claim 1.

Dependent claims 2–4, 8, 12, 14–16, 18, and 20

Claims 2–4, 8, 12, 14–16, 18, and 20 ultimately depend from independent claims 1 and 13, respectively. Appellants do not present any argument in support of the patentability of these dependent claims except to

assert that the claims are allowable based on their dependence from independent claims 1 and 13 (*see* Appeal Br. 20–21).

We are not persuaded, for the reasons set forth above, that the Examiner erred in rejecting independent claims 1 and 13 under 35 U.S.C. § 103(a). Therefore, we sustain the Examiner's rejections under 35 U.S.C. § 103(a) of claims 2–4, 8, 12, 14–16, 18, and 20.

Dependent claim 9

Claim 9 depends from independent claim 1 and recites:

> wherein the at least the first portion of the alphanumeric keyboard comprises a means for displaying at least a portion of a virtual keyboard on a portion of the panel implemented as part of the surface of the handlebar and a means for sensing movement of one or more of the fingers across the portion of the virtual keyboard to produce the output signal.

Appellants argue that the Examiner erred in rejecting dependent claim 9 under 35 U.S.C. § 103(a) because Boorman fails to describe "where 'a portion of the alpha numeric keyboard is displayed on a portion of the panel implemented **as part of the surface of the handlebar**'" (Appeal Br. 18–19; *see also* Reply Br. 7–8). More particularly, Appellants argue "[n]owhere is a portion of a keyboard ever described or suggested as being displayed on the yoke handlebar of Boorman at all" (Appeal Br. 19).

Appellants' argument is not persuasive at least because claim 9 is rejected as unpatentable over the combination Phelps and Boorman, and not over either Phelps or Boorman alone. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) ("Non-obviousness cannot be established by attacking the references individually where the rejection is based upon the

teachings of a combination of references."). Here, the Examiner relies on a combination of Phelps and Boorman, not Boorman, alone, as disclosing the argued limitation (*see* Ans. 10). More particularly, the Examiner relies on Phelps as disclosing "a control panel on the handlebars attached to the handlebar" (*see id.*) and Boorman as disclosing "a small alphanumeric keypad device having a touch screen for entry and/or manipulation of alphanumeric flight guidance data" (*id.* (citing Boorman ¶¶ 27, 28, 36)). In this regard, Boorman discloses that first data entry device 460 can include "a display screen for entry and/or manipulation of alphanumeric flight guidance data" (Boorman ¶ 27).

In view of the foregoing, we sustain the Examiner's rejection of claim 9 under 35 U.S.C. § 103(a).

Dependent claims 10 and 11

Appellants argue that the Examiner erred in rejecting dependent claim 11 under 35 U.S.C. § 103(a) because

> [i]n his rejection of claims 10 and 11, the Examiner cites the same portion of Francois as disclosing that the means for projecting **both moves** the virtual keyboard relative to the movement of the handlebar **and also does not move** the virtual keyboard relative to the movement of the handlebar.

(Appeal Br. 19; *see also* Reply Br. 9). Thus, Appellants argue that "that the Examiner's cited evidence cannot support both cases," and as such, "at least one of claim 10 and claim 11 is not obvious over the combination of Phelps, Boorman and Francois" (*id.*; *see also* Reply Br. 8–9).

The Examiner relies on paragraphs 21–24 and 61–65 of Francois as disclosing the subject matter of dependent claims 10 and 11 (Final Act. 14–16; *see also* Ans. 10–11). The Examiner takes the position

> [j]ust as Appellants['] claims include more than one element, so does the cited prior art teach more than one element. Francois [teaches] integration of [a] virtual keyboard projection system into a shelf system and thus that the virtual projection moves in a fixed manner relative to the shelf system to meet the broadly claimed elements of claim 10, and Francois teaches integration of [a] virtual keyboard projection system into a portion of the aircraft above the shelf system and thus the virtual projection is static and the shelf is allowed to move independent from the projection to meet the broadly claimed elements of claim 11.

(Ans. 11).

We have reviewed the cited paragraphs of Francois, and we agree with Appellants (*see* Reply Br. 9) that these cited paragraphs do not disclose "at least a portion of the virtual keyboard is further configured to project the virtual keyboard such that the virtual keyboard does not move relative to a movement of the handlebar," as recited in dependent claim 11. As Appellants point out, "[t]o maintain a non-movement of the virtual keyboard, the display device must also move as the shelf moves, which it does not in the reference" (*id.* (footnote omitted)). However, we agree with the Examiner that the cited paragraphs of Francois disclose "at least a portion of the virtual keyboard is further configured to project the virtual keyboard such that the virtual keyboard moves relative to a movement of the handlebar," as recited by dependent claim 10.

In view of the foregoing, we sustain the Examiner's rejection of claim 10, but do not sustain the Examiner's rejection of claim 11 under 35 U.S.C. § 103(a).

DECISION

The Examiner's rejections of claims 1–4, 6–10, 12–16, and 18–20 under 35 U.S.C. § 103(a) are affirmed.

The Examiner's rejection of claim 11 under 35 U.S.C. § 103(a) is reversed.

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

AFFIRMED-IN-PART