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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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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* WOLFGANG HOLZAPFEL, SIEGFRIED REICHHUBER,  
HERBERT HUBER-LENK, and JOERG DRESCHER

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Appeal 2010-005848  
Application 11/265,967  
Technology Center 2800

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Before MAHSHID D. SAADAT, ROBERT E. NAPPI, and JUSTIN  
BUSCH, *Administrative Patent Judges*.

BUSCH, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-19. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

### *Introduction*

According to Appellants, the invention relates to a "position measuring system for determining the relative position of two objects [that] includes a power supply unit for generating a variable operating current for a laser light source." Abstract.

## STATEMENT OF THE CASE

### *Exemplary Claim*

Claim 1 is exemplary and reproduced below:

1. A position measurement system for determining a relative position of two objects, comprising:
  - a power supply unit adapted to generate a variable operating current for a laser light source, the power supply unit adapted to supply to the laser light source, in measurement operations, a direct current having a superimposed alternating current component;
  - at least two optical measuring scales having gratings, adapted to split light from the laser light source into different orders of diffraction and combine the different orders of diffraction to result in interference; and
  - photodetectors adapted to generate position-dependent output signals from the light received from the laser light source;wherein the photodetectors are adapted to detect different interfering ray bundles and to output signals that are out of phase with respect to each other.

*Reference*

Ohtsuka	US 5,106,191	Apr. 21, 1992
Bartram	US 5,162,862	Nov. 10, 1992
Burghoorn	US 2001/0006413 A1	Jul. 5, 2001
Langdon	US 6,285,288 B1	Sep. 4, 2001
Holzapfel	US 2004/0090636 A1	May 13, 2004
Joyce	US 2006/0049347 A1	Mar. 9, 2006

*Rejections*

Claims 1-5, 11, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Burghoorn and Langdon.

Claims 1, 6, 7, and 12 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Burghoorn and Bartram.

Claims 8-10 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Burghoorn, Langdon, and Holzapfel.

Claims 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Burghoorn, Langdon, and Ohtsuka.

Claims 15-17 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Burghoorn, Bartram, and Joyce.

ISSUES

Appellants argue that there is no motivation to combine Burghoorn with Langdon. App. Br. 6-8; Reply Br. 1-4. Appellants also argue that there is no motivation to combine Burghoorn with Bartram. App. Br. 9-10; Reply Br. 4. Appellants further argue that there is no motivation to combine

Langdon with Holzapfel. App. Br. 10. Finally, Appellants argue that Joyce has “a bandwidth of at least about 400 kHz,’ whereas the crystal oscillator” of Bartram “operates nominally at 10.7 MHz” and, thus, the combination of Joyce and Bartram is in error because Joyce’s bandwidth is not greater than Bartram’s frequency. App. Br. 11.

*Issue 1a:* Has the Examiner erred in combining Burghoorn with Langdon?

*Issue 1b:* Has the Examiner erred in combining Burghoorn with Bartram?

*Issue 1c:* Has the Examiner erred in combining Langdon with Holzapfel?

*Issue 2:* Has the Examiner erred in finding that the combination of Burghoorn, Bartram, and Joyce teaches “an amplifier having a bandwidth that is above a frequency of the alternating current component”?

## ANALYSIS

We have reviewed Appellants’ arguments in the Appeal Brief and Reply Brief, the Examiner’s rejection, and the Examiner’s response to the Appellants’ arguments. We agree with the Examiner.

### *Issue 1*

Appellants have made various assertions in support of an argument that the references teach away from their combination. Specifically, Appellants have asserted that Burghoorn teaches away from its combination

with Langdon because Burghoorn “seeks to avoid frequency pulling or mode hopping” whereas the laser source in Langdon “has a frequency that is modulated by a triangular modulation signal.” App. Br. 6-7.

The Examiner responds to Appellants’ argument that Burghoorn teaches away from Langdon by pointing out that both Burghoorn and Langdon modulate their respective lasers, but use different methods. Ans. 14. Moreover, the Examiner points out that, rather than teaching away from using the modulation method of Langdon, incorporation of such a method could eliminate the piezoelectric device, which may remove unwanted back reflections. *Id.*

We agree with the Examiner’s findings and conclusions. We are not persuaded by Appellants’ arguments that changing the modulation method would increase the chances of frequency jumping or mode hopping. Thus, Appellants have not pointed to, nor do we find, anything in Burghoorn to persuade us that a person of ordinary skill in the art would have been discouraged or led away from using a modulation method different from the method taught in Burghoorn. “Teaching an alternative or equivalent method does not teach away from the use of a claimed method.” *In re Dunn*, 349 F.2d 433, 438 (CCPA 1965).

Appellants also argue that the proposed combination of Burghoorn and Bartram would change the principle of operation of Burghoorn because the “measurement principle” of Bartram is different than that of Burghoorn. App. Br. 9. The Examiner states that Bartram is used “to show that one can modulate a laser by using a variable current power supply superimposed on a direct current supply . . . instead of modulating the beam as seen in

Burghoorn.” Ans. 17. Once again, we agree with the Examiner. Burghoorn’s principle of operation is not changed merely by substituting one method of modulating the laser for another, which is how the Examiner has explained the combination of Burghoorn and Bartram. Ans. 17. Therefore, we do not find Appellants’ arguments persuasive that Bartram and Burghoorn teach away from their combination.

Appellants further argue that Holzapfel teaches away from its combination with Langdon because Langdon’s laser source “has a frequency that is modulated by the modulation signal,” whereas Holzapfel “states that in position measuring arrangements, fluctuations in wavelength result in erroneous measurements.” App. Br. 10. The Examiner finds that Langdon modulates a laser such that it changes frequency linearly with time, which is not the same as the detrimental fluctuations in wavelength mentioned in Holzapfel and referenced by Appellants. Ans. 19. Appellants have not offered persuasive evidence to show that modulating a laser as taught by Langdon is inconsistent with the teachings of Holzapfel. Therefore, we agree with the Examiner’s findings based on the combination of Holzapfel and Langdon.

Finally, Appellants argue that the Examiner has not provided a rationale for the combination of Burghoorn with Langdon or Bartram. App. Br. 7-8, 9-10. The Examiner’s rationale for combination is that “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the current to the laser as in [Langdon/Bartram] to modulate the laser instead of modulating the beam directly,” as in Burghoorn. Ans. 4, 7. Moreover, Appellants themselves point out that the

Examiner's rejection is based not on the elimination of one component from Burghoorn, but a substitution of components for other components (i.e., "replacing the piezo-electric modulator 83 and its appurtenant equipment, controls, etc. as described by Burghoorn with the 'frequency modulated system described in Langdon'"). Reply Br. 2.

Thus, as acknowledged by Appellants and explained by the Examiner, the rationale for the combination of Burghoorn with Langdon or Bartram is the substitution of one known technique for another to yield predictable results. *See* App. Br. 8 (citing MPEP § 2143 and *KSR Int'l Co. v. Teleflex Inc.*, 82 U.S.P.Q.2d 1385, 1396 (2007)).

### *Issue 2*

In addition to the arguments addressed above relating to the combinations suggested by the Examiner, Appellants argue that claim 15 is not obvious in view of Burghoorn, Bartram, and Joyce because the bandwidth mentioned by Joyce is not above the frequency described by Bartram. App. Br. 11-12. The Examiner points out that Joyce is being used for "the idea of using an amplifier with a bandwidth that is larger than an applied alternating current component, not to replace [the] actual amplifier circuit in Burghoorn as modified by Bartram." Ans. 20. We agree with the Examiner's findings. Appellants have not presented persuasive arguments indicating why the concept of Joyce's circuit having an amplifier bandwidth greater than the applied alternating current could not be integrated into the Burghoorn-Bartram combination.

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DECISION

The Examiner's rejection of claims 1-19 is affirmed.

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) (2011).

AFFIRMED

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