

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JOSEPHUS ARNOLDUS HENRICUS MARIA KAHLMAN  
and  
CORNELIS MARIA HART

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Appeal 2008-3463  
Application 09/933,788  
Technology Center 2600

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Decided: August 27, 2008

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Before JOHN C. MARTIN, LEE E. BARRETT, and JOHN A. JEFFERY,  
*Administrative Patent Judges.*

MARTIN, *Administrative Patent Judge.*

DECISION ON APPEAL

### STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-3, 5-14, 16-19, and 21-24, which are all of the pending claims, under 35 U.S.C. § 103(a).

We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

#### *A. Appellants' invention*

Appellants' invention relates to a record carrier having a first area for storing information and a second area that comprises an integrated circuit (Specification 1-2).

Figure 1 is reproduced below.

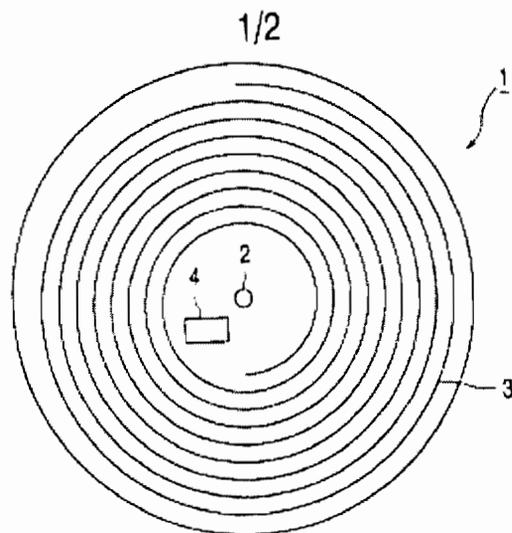


FIG. 1

Figure 1 shows diagrammatically a record carrier according to the invention (*id.* at 4:17).

Spiral track 3 stores information that is read out optically (*see infra*), while area 4 comprises an integrated circuit including transmitting means and receiving means for transmitting and receiving additional information (*id.* at 4:26-28). In a preferred embodiment, this additional information comprises a key for scrambling and/or descrambling the information in track 3 (*id.* at 5:27-28).

Figure 2 is reproduced below.

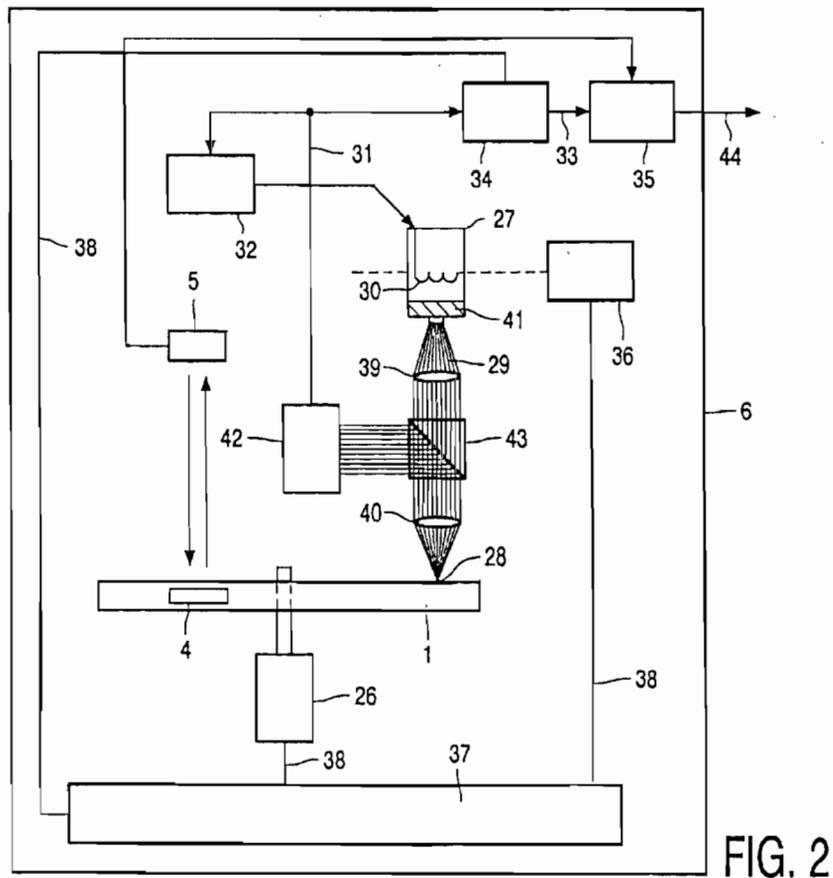


Figure 2 shows diagrammatically a reading device according to the invention (*id.* at 4:18, 30).

The information in spiral track 3 is read out by an optical read head 27 (*id.* at 4:30-32) in reading device 6, which can also include an optical write head for writing information in track 3 (*id.* at 6:6-7). Device 6 further comprises receiving and transmitting means 5 for receiving and transmitting additional information stored in the integrated circuit in area 4 on the record carrier 1 (*id.* at 5:25-27).

Figure 3 is reproduced below.

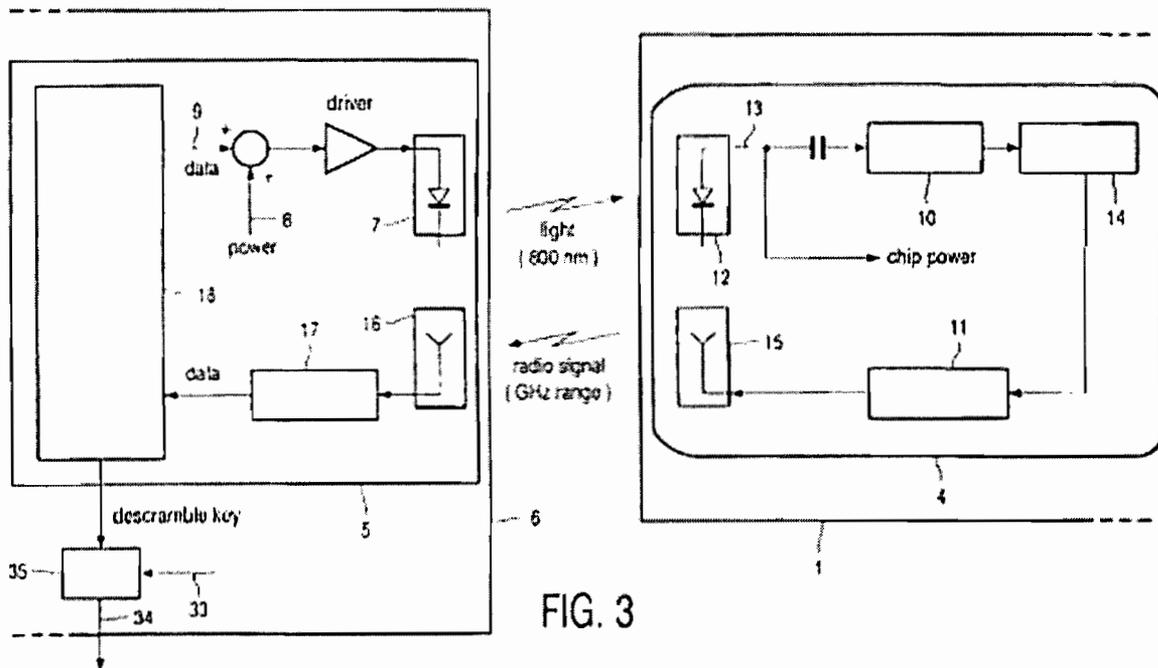


FIG. 3

Figure 3 shows an embodiment of the receiving and transmitting means 5 in device 6 and an embodiment of the transmitting and receiving means in area 4 of the disk (*id.* at 6:5-6).

In device 6, LED 7 in receiving and transmitting means 5 is used to transmit an optical signal (having a wavelength of 800 nm) containing additional information as well as power to a photodiode 12 in region 4 (*id.* at 6:20-24). This additional information is recovered by detector 10 and used by a copy protection algorithm 14 to generate a descrambling key (*id.* at 6:23-27). The descrambling key is applied to a radio frequency (RF) transmitter 11 and antenna 15 for transmission to an antenna 16 and radio receiver 17 in receiving and transmitting means 5 in device 6, wherein it is applied to a copy protection algorithm 18 and then to descrambling means 35 (*id.* at 6:27-33). The Specification explains that

[s]ince the communication channels are substantially separated in frequency, for example, because the first frequency is in an optical frequency range (for example, realized by means of a LED and a light-sensitive sensor, for example, a photodiode; for example, at a frequency of 375 THz at a wavelength of 800 nm), and the second frequency is in a radio frequency range (for example, realized by means of a radio receiver and a radio transmitter; for example, in a frequency range of 0.5-2 GHz), the communication signals are decoupled so that disturbances can be reduced or avoided. Since the communication signals are decoupled, it is also possible to realize the transmitter and the receiver in a simpler manner.

*Id.* at 2:30 to 3:4.

*B. The claims*

The independent claims on appeal are claims 1, 9, 12, 23, and 24.

Claim 1 reads:

A record carrier having a first area for storing information, and a second area, the second area comprising an integrated circuit, characterized in that the integrated circuit comprises, integrated therein,

transmitting means for transmitting additional information; and

receiving means for receiving a power supply signal for supplying power to the integrated circuit, the receiving means comprising a light-sensitive sensor,

wherein said integrated circuit further comprises:

means for generating a first communication channel operating at a first frequency; and

means for generating, simultaneously with said first communication channel, a second communication channel operating at a second frequency, the first frequency being substantially unequal to the second frequency.

Claims App., Br. 25.

*C. The references and rejections*

The Examiner relies on the following references:

Shimizu et al. (Shimizu)	US 6,892,024 B1	May 10, 2005
O'Connor	US 5,790,489	August 24, 1998
Blake et al. (Blake)	US 5,327,213	July 5, 1994
Ono et al. (Ono)	EP 0996124 A1	April 26, 2000

Appeal 2008-3463  
Application 09/933,788

Claims 1-3, 5-7, 9-14, 16-19, and 21-24 stand rejected under 35 U.S.C. § 103(a) for obviousness over Ono in view of O'Connor and Shimizu.

Claim 8 stands rejected under § 103(a) for obviousness over Ono in view of O'Connor, Shimizu, and Blake.

### THE ISSUE

The issue is whether Appellants have shown reversible error by the Examiner in maintaining the rejection. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

### ANALYSIS

#### *A. Principles of law*

“[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). A rejection under 35 U.S.C. § 103(a) must be based on the following factual determinations: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) any objective indicia of non-obviousness. *DyStar Textilfarben GmbH &*

Appeal 2008-3463  
Application 09/933,788

*Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)).

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”

*Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007)).

Discussing the obviousness of claimed combinations of elements of prior art, *KSR* explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [*v. AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock[, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

*KSR*, 127 S. Ct. at 1740. If the claimed subject matter “involve[s] more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement,” *id.*,

it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design

community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

*Id.* at 1740-41. “To facilitate review, this analysis should be made explicit.”

*Id.* at 1741. That is, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *Kahn*, 441 F.3d at 988). *See also PharmaStem Therapeutics, Inc. v. ViaCell Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007) (proponent of obviousness based on combination of references must show “that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so.”) (citations omitted).

The motivation for combining reference teachings is not limited to the problem the applicant was trying to solve: “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *In re ICON Health and Fitness Inc.*, 496 F.3d 1374, 1380 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1742).

The motivation to combine or modify reference teachings can be based on common knowledge or common sense rather coming from the references themselves. “[T]he [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a

court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 127 S. Ct. at 1741.

Furthermore, a reference may be understood by the artisan to be suggesting a solution to a problem that the reference does not discuss. *See KSR*, 127 S. Ct. at 1742 (“The second error of the Court of Appeals lay in its assumption that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem. . . . Common sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. . . . A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

*B. Ono*

Ono discloses an optical disk having a memory that is separate from the recording area of the disk (Ono at [0001]<sup>1</sup>).

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<sup>1</sup> The numbers in brackets in Ono are paragraph numbers.

Figure 4A is reproduced below.

**FIG. 4A**

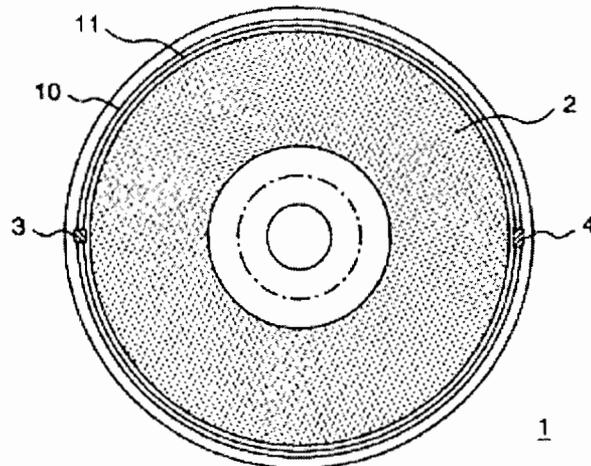


Figure 4A shows an embodiment of Ono's optical disk (*id.* at [0030]).

The disk includes a recording medium 2 for storing the main information, such as a computer application program, game program or audio/video record (*id.* at [0037]). The disk also includes a memory 3, which is formed as an IC (integrated circuit) chip and stores control information used for the management of the main information (*id.*).

Ono's Figure 1 is reproduced below.

**FIG. 1**

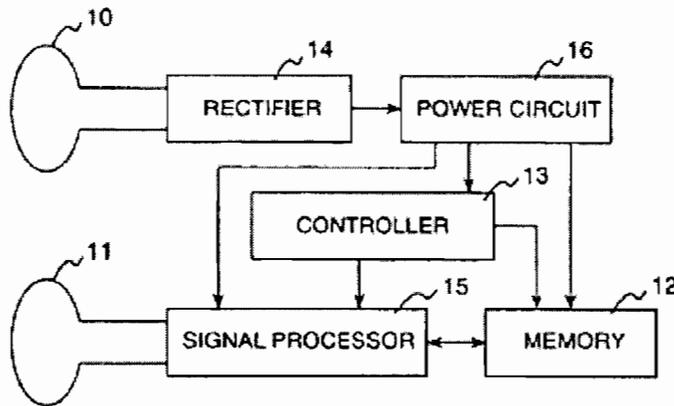


Figure 1 shows an arrangement of Ono's memory 3 (*id.* at 6, para. [0032]), which can take the form of an integrated circuit (IC) chip (*id.* at [0031]).

For receiving power in the form of a signal to be supplied to the circuitries of the IC chip, the chip includes an electromagnetic coupling means, i.e., a receiver means 10, such as an antenna (*id.* at [0035]). The IC chip further incorporates a rectifier 14 for converting the signal received by the receiver means into power (*id.*). For the communication of control information between the optical disk and the recording/reproduction apparatus, the chip includes another electromagnetic coupling means, i.e., a transmitter-receiver means 11, such as an antenna (*id.*).

Ono's Figure 2 is reproduced below.

**FIG. 2**

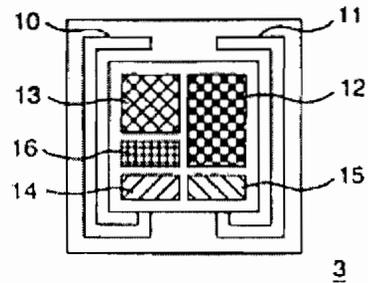


Figure 2 shows the structure of the IC chip as disposed on the optical disk (*id.* at [0030]).



disk medium record/reproduce circuit 21 that contains an optical head for optically writing main information onto and reading main information from recording medium 2 of the disk (*id.* at 7, para. [0037]).

Ono explains that

[t]he signals sent to the communication circuit 27 for control information transfer and power supply have their transmission band set outside of the main information recording band or the reproduction band in the case of the multiple-speed reproduction of the main information so that the signals do not affect the recording and reproduction of the main information.

Accordingly, the following two kinds of means are required depending on the band of signals transmitted to the electromagnetic coupling means for control information transfer and power supply.

Ono at [0040]. Taking as a specific example a main information signal having a recording bandwidth from 100 kHz to 30 MHz (*id.*), Ono explains that the band which contains the power supply and control information signals can be located either in a “lower transmission band” (*id.* at [0041]), i.e., below the band of the main information signal, or in a “higher transmission band” (*id.* at [0044]), i.e., above the band of the main information signal.

Comparing claim 1 to Ono, the recited “record carrier” reads on the disk, the recited “first area for storing information” reads on recording medium 2, which stores the main information, and the recited “second area comprising an integrated circuit” reads on memory 3 on the disk. All of the remaining limitations of claim 1 are directed to the recited integrated circuit,

Appeal 2008-3463  
Application 09/933,788

i.e., Ono's memory 3. The recited "transmitting means for transmitting additional information" reads on the transmitter portion of transmitter-receiver 11, which handles the control information, while the recited "receiving means for receiving a power supply signal for supplying power to the integrated circuit" reads on receiver 10. However, the requirement that the "receiving means compris[e] a light-sensitive sensor" is not satisfied by Ono. For such a teaching, the Examiner relies on O'Connor, which discloses a "smart compact disk" that includes a processor and a transmission element (O'Connor, title).

O'Connor's Figures 1 and 2 are reproduced below.

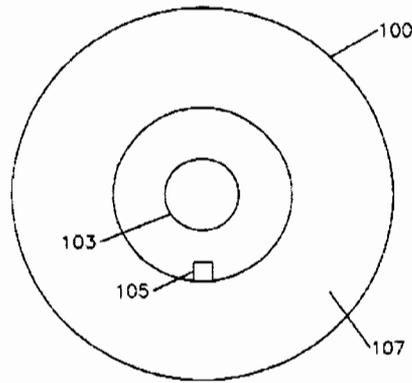


Fig. 1

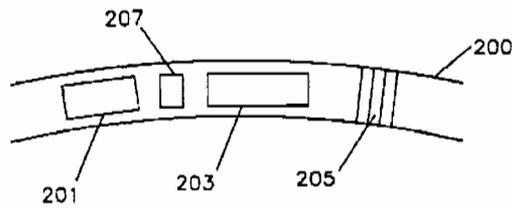


Fig. 2

Figure 1 shows a top view of O'Connor's CD, while Figure 2 shows a portion of the CD track that contains a processor, transmission element, and other elements.

Specifically, track 200 includes a processor 201, a photosensitive charging array 203, a charge storage element 207, and a transmission element 205 (*id.*, col. 2, ll. 53-55). Transmission element 205 can be a light emitting diode (LED), a laser diode, or a liquid crystal display (LCD) reflector (*id.*, col. 2, ll. 55-57). A laser in the disk read head illuminates the photosensitive charging array to generate a current that is supplied to the storage element,

which supplies the processor with power (*id.*, col. 1, ll. 47-52). The processor controls the transmission element, which is optically coupled to the disk reader to impart an informational signal to the disk reader (*id.*, col. 1, ll. 52-56). The informational signal can be a cryptographic key to allow utilization of the contents of the CD ROM (*id.*, col. 1, ll. 56-58). The key can also be a validation key without which the software will not run or a filter key for music (*id.*, col. 6, ll. 4-7). The CD cannot be duplicated in normal fashion, as the copy will not have the hardware required to deliver this key (*id.*, col. 6, ll. 7-9).

In another embodiment, the CD can receive as well as transmit data (*id.*, col. 5, ll. 38-39). When the laser beam can be toggled on and off, once charging is completed, the charging array can be utilized as an input medium (*id.*, col. 5, ll. 46-48). As the laser beam 309 illuminates the charging array, toggling the beam on and off can provide the informational signal required (*id.*, col. 5, ll. 48-50). The informational signal can be retrieved by timing the existence of charging current coming from the charging array (*id.*, col. 5, ll. 50-52). In addition, charging can easily continue while receiving data (*id.*, col. 5, ll. 54-55).

If the CD can receive information, the date can be written to the CD and the processor can be programmed to stop supplying a needed key after a certain date (*id.*, col. 6, ll. 21-23). Alternatively, the smart CD can make the data on the CD accessible after a certain date (*id.*, col. 6, ll. 23-25).

O'Connor explains that if an LED is used, its wavelength preferably should approximate the wavelength of the CD read laser (*id.*, col. 5, ll. 10, 19-20) and that if a laser diode is utilized rather than an LED, the diode should emit a beam with a wavelength close to or exactly the wavelength of the read beam (*id.*, col. 5, ll. 20-23).

Citing the foregoing teachings, the Examiner concluded that "in light of the teaching in O'Connor it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ono by providing a light sensitive sensor in order to protect copy[ing]" (Answer<sup>2</sup> 4). Because claim 1 specifies that the light-sensitive sensor functions as the receiving means for the power supply signal, we understand the Examiner's position to be that it would have been obvious in view of O'Connor to replace Ono's receiver 10 (which receives the power supply signal) with O'Connor's light sensitive array 207.<sup>3</sup>

Appellants have not pointed out any error in the Examiner's apparent position that it would have been obvious to modify Ono in the above manner. Instead, Appellants argue that Ono when modified in view of O'Connor will not satisfy claim 1's additional requirement that the integrated circuit (i.e.,

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<sup>2</sup> References herein to the Answer are to the Answer mailed October 1, 2007.

<sup>3</sup> In Ono thus modified, transmitter 29 will no longer be needed because the light sensitive array will be illuminated by the optical head in Ono's disk medium record/reproduce circuit 21.

Ono's memory 3) further comprise "means for generating a first communication channel operating at a first frequency" and "means for generating, simultaneously with said first communication channel, a second communication channel operating at a second frequency, the first frequency being substantially unequal to the second frequency." Br. 19. However, Appellants have not provided any analysis in support of this position. To the extent this position is based on the assumption that neither of the recited first and second communication channels reads on Ono's transmission of a power supply signal, we do not agree. The term "communication channel" is not defined in the Specification and thus must be given its broadest reasonable interpretation consistent with Appellants' disclosure. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). "Communication" is defined in relevant part as "1. The act or process of communicating : TRANSMISSION." *Webster's II New College Dictionary* 227 (2001) (copy enclosed). Although the term "communication" generally refers to the transmission of information, it is also used to refer to the transmission of something other than information. Thus, the verb "communicate" is defined as: "1. a. To make known : DISCLOSE <communicate information> b. To manifest : disclose. 2. To transmit (a disease) to others." *Id.* Therefore, the recited "first communication channel" can be read on the channel that includes power supply signal receiver 10 both before and after it has been replaced by O'Connor's light sensitive array 207, while the recited "second communication channel" can be read on the RF channel that includes

transmitter-receiver 30 and transmitter-receiver 11, which are used to communicate control information. This interpretation of the claim 1 is consistent with the fact that the only two things recited in claim 1 as being transmitted or received are the power supply signal and the additional information.<sup>4</sup> Also, Ono describes transmission of the power supply signal as a “communication” in stating that “[t]he memory 3 formed of an IC chip needs power, which is supplied from the power supply circuit 28 to the memory 3 by way of the *communication* circuit 27.” Ono at [0039] (emphasis added).

In Ono as modified above in view of O’Connor, the “first frequency” of the “first communication channel,” i.e., the channel that includes power supply signal receiver 10 after it has been replaced by O’Connor’s light sensitive array 207, is the frequency of the light emitted by the optical head. The “second frequency” of the “second communication channel,” which includes transmitter-receiver 30 and transmitter-receiver 11, is an RF channel. As a result, the first frequency is substantially unequal to the second frequency, as required by claim 1. Appellants also have not explained, nor is it apparent, why the additional requirement of claim 1 for simultaneous generation of the first and second communication channels is not satisfied when the first and second communication channels are read in the above manner on Ono thus modified.

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<sup>4</sup> Claim 2, which depends on claim 1, further specifies that “the  
(Continued on next page.)

It is therefore unnecessary to address the Examiner's reliance on Ono's discussion of using a "lower transmission band" (*id.* at [0041]) or a "higher transmission band" (*id.* at [0044]) for the power supply signal and control information signals (Answer 4) (citing Ono col. 7, l. 5 to col. 8, l. 58) or the Examiner's reliance on Shimizu for a teaching of simultaneously generating first and second communication channels (Answer 5).

For the foregoing reasons, we are affirming the rejection of claim 1 for obviousness over Ono in view of O'Connor and Shimizu as well as the rejection of the other independent claims (i.e., claims 9, 12, and 23) on that ground, as to which Appellants have repeated their claim 1 arguments. In addition, we are affirming the rejection on that ground of dependent claims 2, 3, 5-7, 10, 11, 13-19, 21, 22, and 24, the merits of which were not separately argued.

Dependent claim 8, which is rejected for obviousness over Ono in view of O'Connor, Shimizu, and Blake, reads:

8. The record carrier as claimed in claim 1, characterized in that the first frequency is in an optical frequency range and the second frequency is in a radio frequency range.

The claim limitations appear to read on Ono as modified above in view of O'Connor, making it unnecessary to consider the Examiner's additional reliance on Blake. The rejection of claim 8 for obviousness over Ono in view of O'Connor, Shimizu, and Blake is therefore affirmed.

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receiving means also receives additional information." Claims App., Br. 25.

Appeal 2008-3463  
Application 09/933,788

DECISION

The rejections of claims 1-3, 5-14, 16-19, and 21-24 under 35 U.S.C. § 103(a) for obviousness over the prior art are sustained.

The Examiner's decision that claims 1-3, 5-14, 16-19, and 21-24 are unpatentable under 35 U.S.C. § 103(a) 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). *See* 37 C.F.R. §§ 41.50(f) and 41.52(b).

AFFIRMED

qsg

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<b>Notice of References Cited</b>	Application/Control No. 09/933,788	Applicant(s)/Patent Under Patent Appeal No. 2008-3463	
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