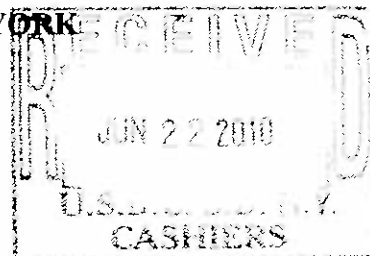


UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK



KONINKLIJKE PHILIPS ELECTRONICS
N.V. and U.S. PHILIPS CORPORATION,

Plaintiffs,

v.

OPTICAL EXPERTS
MANUFACTURING, INC.; and John Does
No. 1 through 100,

Defendants.

Civil Action No. 08-cv-4071 (RGS)

SECOND AMENDED COMPLAINT

This Second Amended Complaint is filed pursuant to the Court's May 11, 2010 Order.

Plaintiffs Koninklijke Philips Electronics N.V. and U.S. Philips Corporation allege as follows based upon knowledge as to their own acts, and upon information and belief as to all other allegations:

1. This is an action for breach of contract under the laws of the State of New York and, in addition or in the alternative to the breach of contract claim, patent infringement under 35 U.S.C. 271 *et seq.*

The Parties

2. Plaintiff Koninklijke Philips Electronics N.V. ("KPENV") is a corporation organized under the laws of The Netherlands with its principal place of business in Eindhoven, The Netherlands. Plaintiff U.S. Philips Corporation is a corporation organized under the laws of Delaware with its principal place of business at 3000 Minuteman Road, M/S 109, Andover, MA 01810, and an office at 345 Scarborough Rd., Briarcliff Manor, New York. Plaintiffs

Koninklijke Philips Electronics N.V. and U.S. Philips Corporation are collectively referred to as “Philips.”

3. Defendant Optical Experts Manufacturing, Inc. (“OEM”) is a corporation organized under the laws of North Carolina with a principal place of business at 8500 South Tryon Street, Charlotte, NC.

4. Defendants John Doe No. 1 through John Doe No. 100 inclusive are or may be OEM-related entities or OEM customers or principals, the identities of which are unknown at this time.

Jurisdiction and Venue

5. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331, 1332, 1338(a), and 1367(a), and 35 U.S.C. §§ 271 and 281.

6. The amount in controversy exceeds the sum or value of \$75,000, exclusive of interest and costs.

7. Venue in this Court is proper under 28 U.S.C. §§ 1391(b) and (c) and 1400(b).

8. This Court has personal jurisdiction over OEM under the New York Long Arm Statute, N.Y. C.P.L.R. 301, 302, 313 (McKinney 2007) and Fed. R. Civ. P. 4(e)(1).

9. OEM has committed acts of patent infringement in this judicial district.

10. OEM has irrevocably waived any objections to the jurisdiction, process, and venue of this Court, and to the effectiveness, execution, and enforcement of any order or judgment (including a default judgment) with respect to the Agreement and Side Letter identified in ¶ 20 of this Second Amended Complaint.

11. OEM is subject to personal jurisdiction in this district because it purposefully engaged in activities that gave rise to this claim for patent infringement, which were directed at residents of New York and this judicial district.

12. OEM voluntarily placed unlicensed CD-Discs (as defined in ¶ 21) into the stream of U.S. commerce, conscious that New York and this judicial district were the likely destination of a substantial quantity of those unlicensed CD-Discs.

Facts Related to Philips

13. Philips and its related companies have engaged for many years in research and development (“R&D”) of systems in which signals encoded in digital form and stored on a disc are read and reproduced by means of devices using an optical read-out beam.

14. One of the achievements of such R&D efforts was a revolutionary high-fidelity sound storage and reproduction system, known as the Compact Disc Digital Audio System (“CD-Audio System”).

15. Philips and Sony Corporation (“Sony”) developed the Compact Disc Data System (“CD-ROM System”) from the CD-Audio System.

16. Philips and Sony also developed a multi-session CD system, known as the Enhanced Music Compact Disc System (“Enhanced Music CD System” or “CD Extra System”).

17. The CD-Audio System, CD-ROM System, and CD Extra System are referred to collectively in this Second Amended Complaint as the “CD Systems”.

18. U.S. Philips Corporation is the owner by assignment of all right, title, and interest in U.S. Patent No. 5,068,846, entitled “Reflective, Optical Record Carrier,” relating to the CD Systems (“the ‘846 patent”). The ‘846 patent was duly and legally issued by the U.S. Patent and Trademark Office on November 26, 1991, after full and fair examination, and was valid and subsisting in the United States at all times relevant to this action. The ‘846 patent expired on November 26, 2008. A true copy of the ‘846 patent is attached as **Exhibit A**.

19. The CD Systems are defined by “Standard Specifications”, namely, the CD-Audio Standard Specifications, CD-Audio Maxi-Single Standard Specifications, CD-ROM Standard Specifications, CD-ROM-XA Specifications, and the Enhanced Music CD Standard Specifications.

Facts Related to OEM

20. Effective July 1, 2002, Philips and OEM entered into a “CD Disc Patent License Agreement” whereby Philips granted OEM worldwide rights under certain patents related to CD Systems, including for the territory of the United States, its territories, and possessions (the “Agreement”) (**Exhibit B**). Effective July 1, 2002, Philips and OEM entered into a “Side Letter” that constitutes a legally binding and integral part of the Agreement (**Exhibit C**).

21. The Agreement identifies the Standard Specifications for CD System discs, specifically, “CD-Audio Discs”, “CD-Audio Maxi-Singles”, “CD-ROM Discs”, “CD-ROM Disc mode 1”, “CD-ROM Disc mode 2”, “CD-ROM XA Disc sub-mode 1”, “CD-ROM XA Disc sub-mode 2”, “CD Extra Discs”, “CD Extra Discs sub-mode 1”, and “CD Extra Discs sub-mode 2”. Such CD System discs are referred to collectively in this Second Amended Complaint as “CD-Discs”.

22. Paragraph 1.23 of the Agreement defines “Licensed Patents” as “any one or more of the essential patents for the manufacture and/or sale of the various types of CD-Discs”, breaks out such patents into Categories I through III, and incorporates the specific patents listed in Annexes A1 through A8. Under ¶ 1.23 of the Agreement, Licensed Patents identified in Annex A1 cover all CD-Discs, in Categories I through III.

23. The ‘846 patent was listed in Annex A1 when OEM signed the Agreement and at all times relevant to this action, and therefore was a Licensed Patent applicable to all CD-Discs

manufactured and/or sold by OEM under the Agreement from July 1, 2002 until the patent expired on November 26, 2008.

24. Under ¶ 1.23 of the Agreement, Philips and OEM agreed that Philips would commission an independent expert to review the patents listed in Annexes A1 through A8 to confirm that each patent is “essential” to the manufacture and sale of CD-Discs made according to the Standard Specifications. Philips did so.

25. Under ¶ 1.23 of the Agreement, the term “essential” as used in relation to Licensed Patents means “patents, the use of which is necessary (either directly or as a practical matter) for compliance with the Standard Specifications defining the relevant CD System(s).”

26. The independent expert commissioned by Philips determined that the ‘846 patent was an essential patent and was properly listed in Annex A1 of the Agreement.

27. Paragraph 1.22 of the Agreement defines “Licensed Product(s)” by eleven “Options”, Option A through K, “as selected by Licensee, manufactured and/or sold in accordance with the provisions hereof, which are duly reported and on which the royalties due hereunder are paid in accordance with the provisions of this Agreement.” Each Option corresponds to a different type of CD-Disc defined in ¶¶ 1.2 through 1.11 of the Agreement, made in compliance with the Standard Specifications for each type of CD-Disc defined in ¶¶ 1.12 through 1.16 of the Agreement. For example, Option A is “CD-Audio Discs and/or CD-Audio Maxi Singles” defined in ¶¶ 1.2 and 1.3, respectively, made in compliance with the ¶¶ 1.12 and 1.13 Standard Specifications, and Option C is “CD-ROM Discs mode 1” defined in ¶ 1.5, made in compliance with the ¶ 1.14 Standard Specifications.

28. OEM selected all Licensed Products, namely, Options A through K.

29. Under ¶ 2.1 of the Agreement, Philips granted to OEM “a non-exclusive, non-transferable license under the Licensed Patents” (listed in the Annexes corresponding to the Options selected by OEM) “to manufacture Licensed Products” corresponding to Options A-K (as selected by OEM), “in accordance with the . . . Standard Specifications” set forth in ¶¶ 1.12 through 1.16 of the Agreement, within the United States and its territories and possessions, “and to sell or otherwise dispose of such Licensed Products so manufactured in all countries of the world.”

30. Under ¶ 5.2 of the Agreement, OEM promised to “pay to Philips a royalty for each CD-Disc sold or otherwise disposed of by Licensee, any of Licensee’s Associated Companies [as defined in ¶ 1.24] or an agent of Licensee, in any country where at least one of the Licensed Patents essential to the type(s) of CD-Discs as selected by Licensee . . . exists.”

31. The ‘846 patent existed in the United States at all times relevant to this action. During the term of the ‘846 patent, CD-Discs that conform to the Standard Specifications could not be made by OEM without using such patent.

32. With respect to the royalty required by the Agreement, OEM agreed to pay Philips the “Standard Rate” of 3 cents (3¢) per relevant CD-Disc covered by this Second Amended Complaint, as defined in ¶ 5.2 of the Agreement.

33. With respect to CD-Discs sold on or after July 1, 2002, Philips permitted OEM to pay the “Compliance Rate” of 1.75 cents (1.75¢) per relevant CD-Disc covered by this Second Amended Complaint, also as defined in ¶ 5.2 of the Agreement, provided that OEM met the “Compliance Requirements” specified in the Agreement and Side Letter.

34. To be eligible to pay the Compliance Rates under the Agreement, OEM was required to be in full compliance with its obligations under the Agreement and Side Letter.

35. Paragraph 5.2 of the Agreement further provides that “[i]n the event that Licensee fails to comply at any time with any of its obligations under this Agreement, the Standard Rates, as applicable, shall apply to Licensee’s manufacture and sale of CD-Discs instead of the Compliance Rates, as applicable, with immediate effect from the first day of the reporting period to which the occurrence of non-compliance relates until such moment that Philips confirms in writing to Licensee that Licensee’s non-compliance has been remedied in full.”

36. Paragraphs 5.3 and 5.10 of the Agreement require OEM to submit quarterly “Royalty Reporting Forms” to Philips listing all CD-Discs that it manufactures and sells, and to keep complete and accurate books and records relating to OEM’s manufacture and sale or other disposal of CD-Discs. Paragraphs 5.3 and 5.10 of the Agreement require OEM to keep accurate books and records relating to the manufacture and sale or other disposal of all CD-Discs that correspond to the types of CD-Discs selected by OEM under the Options set forth in ¶ 1.22 of the Agreement, for which at least one Licensed Patent remains in force in any country of the world, and to report such information to Philips, specifically (1) the quantities of each such selected type of CD-Discs manufactured by OEM, specified per individual type of CD-Disc, (2) the quantities of each such selected type of CD-Discs purchased from other licensed manufacturers, specified per individual type of CD-Disc and per such third party manufacturer, (3) on a per-country basis, specifying per individual type of CD-Disc the quantities of CD-Discs on which royalties are due, and that are sold or otherwise disposed of, or sold to other manufacturers duly licensed by Philips, specifying the identity of the buyers or such other manufacturers and the trademarks used on or in connection with the CD-Discs, as the case may be, and (4) a computation of the royalties due under the Agreement.

37. Under ¶ 5.3 of the Agreement, OEM is required to report and pay royalties due to Philips within 30 days after the end of each calendar quarter, and to comply with the other reporting requirements of that provision.

38. Under ¶ 5.4 of the Agreement, OEM is required to pay an “Advance” (as that term is defined in ¶ 5.4 of the Agreement) within 30 days after the end of each calendar quarter with respect to which OEM fails to submit to Philips a timely Royalty Reporting Form (as that term is defined in ¶ 5.3 of the Agreement) for such quarter.

39. Under ¶ 5.5 of the Agreement, OEM is required to submit to Philips no later than 90 days following the end of OEM’s financial year an audit statement confirming that the quarterly royalty statements submitted to Philips for the last four quarterly periods were true, complete, and accurate in every respect.

40. Under ¶ 6.1 of the Agreement, OEM is required to submit to Philips a yearly report of all adjustments to its manufacturing equipment during the preceding year, and to submit to Philips the details of any acquisitions, transfers, or disposals of its manufacturing equipment used, or that is technically capable of being used, for the manufacture of CD-Discs, at the time of such acquisition, transfer, or disposal.

41. Under ¶ 5 of the Side Letter, and as a condition to qualify to pay the Compliance Rates, OEM was required to provide to Philips no later than July 15, 2004 an audit statement in compliance with ¶ 5.5 of the Agreement covering the period July 1, 1999 through December 31, 2003.

42. On December 8, 2003, Philips and OEM entered into a “Second Workout Agreement” relating in part to the Agreement (**Exhibit D**). The Second Workout Agreement reflected the facts that OEM failed to make certain royalty payments under the Agreement, failed to pay

certain arrearages under a February 28, 2002 Workout Agreement, asked Philips to forbear its remedies under the Agreement and to restructure payment of the unpaid royalties due and owing by OEM to Philips, and Philips and OEM so agreed. Under the Second Workout Agreement, OEM agreed to make monthly payments to Philips through December 2008. Such payments were due no later than the 15th day of each month. The Second Workout Agreement provided that if OEM failed to make timely payments under such agreement or the Agreement, or failed to provide timely royalty reports under the Agreement, and failed to cure as provided in the Second Workout Agreement, (1) the entire remaining unpaid balance under the Second Workout Agreement shall immediately become due and payable, (2) Philips shall be entitled to injunctive relief and/or confession of judgment for such unpaid balance, and (3) Philips shall be entitled to an award of its reasonable attorneys' fees and costs for enforcement of the Second Workout Agreement.

43. Under ¶ 8 of the Second Workout Agreement, Philips may terminate such agreement if OEM breaches any term thereof, after providing written notice of such breach to OEM and OEM fails to cure such breach within 10 days, and Philips may then assert a claim against OEM for the full amount due to Philips, plus interest, as if the Second Workout Agreement never existed, less credits to OEM for payments made thereunder.

44. On or about December 8, 2003, and concurrently with the Second Workout Agreement, OEM executed a Promissory Note whereby OEM promised to pay to Philips the "Total Arrears Amount" (as that term is defined in ¶ 4 of the Second Workout Agreement) set forth in the Second Workout Agreement (**Exhibit E**). Under such 2003 Promissory Note, OEM agreed that any installment on such note not paid when due shall bear interest from its due date until paid at

the rate of 2% per annum, and that OEM shall pay all costs and expenses (including attorneys' fees and costs) of any action by Philips to enforce or collect such note.

45. On December 1, 2006, Philips and OEM entered into a "2006 Payment Agreement" relating in part to the Agreement (**Exhibit F**). The 2006 Payment Agreement reflected the facts that OEM failed to disclose all applicable discs purchased, manufactured, or sold for a certain period and failed to make certain payments, asked Philips to forbear its remedies under the Agreement and to restructure OEM's payments, and Philips and OEM so agreed. Under the 2006 Payment Agreement, OEM agreed to pay interest on unpaid amounts due under such agreement, and OEM agreed to make monthly payments to Philips through December 2009. Such payments were due no later than the 15th day of each month. The 2006 Payment Agreement provided that if OEM failed to make timely payments under such agreement or the Agreement, or failed to provide timely royalty reports under the Agreement, and failed to cure as provided in the 2006 Payment Agreement, (1) the entire remaining unpaid balance under the 2006 Payment Agreement shall immediately become due and payable, (2) Philips shall be entitled to injunctive relief and/or confession of judgment for such unpaid balance, and (3) Philips shall be entitled to an award of its reasonable attorneys' fees and costs for enforcement of the 2006 Payment Agreement.

46. Under ¶ 8 of the 2006 Payment Agreement, Philips may terminate such agreement if OEM breaches any term thereof, after providing written notice of such breach to OEM and OEM fails to cure such breach within 10 days, and Philips may then assert a claim against OEM for the full amount due to Philips, plus interest, as if the 2006 Payment Agreement never existed, less credits to OEM for payments made thereunder.

47. On or about December 1, 2006, and concurrently with the 2006 Payment Agreement, OEM executed a Promissory Note whereby OEM promised to pay to Philips the “2006 Payment Amount” (as that term is defined in ¶ 2 of the 2006 Payment Agreement) set forth in the 2006 Payment Agreement (**Exhibit G**). Under such 2006 Promissory Note, OEM agreed that any installment on such note not paid when due shall bear interest from its due date until paid at the rate of 2% per annum, and that OEM shall pay all costs and expenses (including attorneys’ fees and costs) of any action by Philips to enforce or collect such note.

Facts Relating to Breach of Contract Claim

48. OEM selected Licensed Product Options A-K. To be Licensed Products, selected CD-Discs must be manufactured and sold in compliance with the corresponding Standard Specifications and the provisions of the Agreement, such sales must be reported to Philips, and royalties for the sale of such CD-Discs must be paid to Philips. For example, a CD-Audio Disc is defined by ¶ 1.2 of the Agreement to “mean a Disc [as defined in ¶ 1.1 of the Agreement] comprising audio information encoded in digital form, which is optically readable by a CD-Audio Player [as defined in ¶ 1.18 of the Agreement] and which conforms to the CD-Audio Standard Specifications [as defined in ¶ 1.12 of the Agreement].” Paragraph 1.12 defines the CD-Audio Standard Specifications to “mean the specifications for the CD-Audio System [as defined in the second “Whereas” clause of the Agreement], including, if applicable, the Subcode/Control and Display System, Channels R . .W, chapter 5.8, the CD-TEXT mode, as made available, modified or extended from time to time.”

49. Under ¶ 2.1 of the Agreement, OEM is licensed only to manufacture selected Licensed Products “**in accordance with the relevant CD Standard Specifications** and to sell or

otherwise dispose of such Licensed Products so manufactured in all countries of the world.”
(Emphasis added.)

50. Because the ‘846 patent is essential and therefore must be used to make CD-Discs that conform to the Standard Specifications, and existed in the United States at all times relevant to this action, under ¶ 5.2 of the Agreement OEM was required to pay Philips either the Standard Rates or the Compliance Rates “for each CD-Disc sold or otherwise disposed of” by OEM, its associated companies, or its agents in the U.S.

51. Beginning in or about the Third Quarter 2002, OEM began paying royalties under the Agreement according to the Compliance Rates, for the manufacture and sale in the United States of relevant CD-Discs (1.75 cents (1.75¢) per disc).

52. Beginning on or about December 1, 2005, OEM ceased paying royalties for each and every CD-Disc made and sold in the U.S.

53. OEM has continued to make and sell at least 30 million CD-Discs in the U.S. without providing royalty reports or paying royalties to Philips.

54. The CD-Discs made and sold by OEM after it stopped paying royalties to Philips have been and are available for purchase on the open market in the U.S., and within this district.

55. OEM does not contest that the CD-Discs made and sold in the U.S. by OEM after it stopped paying royalties to Philips comply with the relevant Standard Specifications.

56. OEM has failed to submit quarterly “Royalty Reporting Forms” to Philips listing all CD-Discs that it manufactured and sold, and/or to keep complete and accurate books and records relating to OEM’s manufacture and sale or other disposal of all CD-Discs in the U.S., as required by ¶¶ 5.3 and 5.10 of the Agreement.

57. OEM failed to keep accurate books and records relating to the manufacture and sale or other disposal of all CD-Discs that correspond to the types of CD-Discs selected by OEM under the Options set forth in ¶ 1.22 of the Agreement, for which at least one Licensed Patent remains in force in any country of the world, and to report such information to Philips, specifically (1) the quantities of each such selected type of CD-Discs manufactured by OEM, specified per individual type of CD-Disc, (2) the quantities of each such selected type of CD-Discs purchased from other licensed manufacturers, specified per individual type of CD-Disc and per such third party manufacturer, (3) on a per-country basis, specifying per individual type of CD-Disc the quantities of CD-Discs on which royalties are due, sold, or otherwise disposed of, or sold to other manufacturers duly licensed by Philips, specifying the identity of the buyers or such other manufacturers and the trademarks used on or in connection with the CD-Discs, as the case may be, and (4) a computation of the royalties due under the Agreement, as required by ¶¶ 5.3 and 5.10 of the Agreement.

58. OEM failed to report and pay royalties due to Philips within 30 days after the end of each calendar quarter, beginning with First Quarter 2004, as required by ¶ 5.3 of the Agreement. Specifically, OEM failed to report royalties within 30 days after the end of each calendar quarter for at least nine calendar quarters, and OEM failed to pay royalties within 30 days after the end of each calendar quarter for at least 18 calendar quarters. OEM also failed to comply with the reporting requirements of ¶ 5.3 of the Agreement.

59. OEM failed to submit to Philips no later than 90 days following the end of OEM's financial year an annual audit statement, as required by ¶ 5.5 of the Agreement.

60. OEM has failed to make payments due to Philips under the Second Workout Agreement and the 2006 Payment Agreement. The last installments received by Philips from OEM were the

payments due October 15, 2007. Under the Second Workout Agreement, OEM owed Philips monthly payments of \$23,253.21 for November 15, 2007 through December 15, 2008. Under the 2006 Payment Agreement, OEM owed Philips monthly payments of \$49,388.39 for November 15, 2007 through December 15, 2009.

61. On March 26, 2010 and June 17, 2008, Philips provided written notice to OEM of its breach of the Second Workout Agreement and the 2006 Payment Agreement, respectively, OEM failed to cure within 10 days of such notice, and on March 9 and June 14, 2010 Philips terminated such agreements. Philips therefore seeks recovery from OEM of the full amounts due to Philips, plus interest, as if the Second Workout Agreement and 2006 Payment Agreement never existed, less credits to OEM for payments made thereunder, plus all costs and expenses (including attorneys' fees and costs).

Facts Relating to Patent Infringement Claim

62. The CD-Discs made and sold by OEM in the U.S. without paying royalties to Philips fall within the claims of the '846 patent. OEM's CD-Discs infringe at least claim 1 of the '846 patent.

63. OEM's license to make and sell such CD-Discs in the U.S. is contingent upon OEM's reporting and payment of royalties to Philips, as set forth in the Agreement and Side Letter. Specifically, no CD-Disc is licensed under the Agreement unless and until the royalty for such CD-Disc is reported and paid to Philips. As set forth in this Second Amended Complaint, OEM is in material breach of the Agreement.

64. As set forth in this Second Amended Complaint, OEM made and sold CD-Discs covered by the '846 patent in the U.S. without reporting and paying royalties to Philips from December 1, 2005 through November 26, 2008.

65. Because OEM has not reported and paid royalties to Philips and is in material breach of the Agreement, as set forth in this Second Amended Complaint, the CD-Discs made and sold by OEM since the breaches began are not Licensed Products, and are not licensed under the '846 patent, and therefore infringe such patent.

66. The John Doe Defendants acquired, made, used, and/or sold CD-Discs covered by the '846 patent in the U.S. without a license from Philips under the Licensed Patents, and/or without paying royalties to Philips.

Count I
Breach of Contract

67. Plaintiff repeats and realleges each and every allegation set forth in this Second Amended Complaint.

68. The Agreement is a valid and subsisting agreement under New York law between Philips and OEM. The Agreement is supported by adequate consideration. Neither Philips nor OEM has terminated the Agreement. KPENV has the right to license the '846 patent.

69. In ¶ 13.7 of the Agreement, Philips and OEM agreed that New York law controls the construction of the Agreement.

70. OEM has materially breached the Agreement by failing to pay royalties on its manufacture and sale of CD-Discs, as set forth in this Second Amended Complaint, from December 1, 2005 through November 26, 2008.

71. The Second Workout Agreement, 2006 Payment Agreement, and related promissory notes were valid and subsisting agreements between Philips and OEM, and were supported by adequate consideration.

72. OEM has further breached the Agreement, Second Workout Agreement, 2003 Promissory Note, 2006 Payment Agreement, and 2006 Promissory Note as alleged in ¶¶ 56-61 of this Second Amended Complaint.

73. OEM has materially breached the Agreement in other ways, the details of which are unknown at this time.

74. In view of such breaches, Philips is entitled to receive (a) royalties for OEM's manufacture and sale in the U.S. of CD-Discs at the Standard Rates for December 1, 2005 through November 26, 2008, (b) the difference between the Standard Rates and the Compliance Rates for all royalties paid at the Compliance Rates on or after the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter, and (c) the difference between the Standard Rates and the payments made by OEM under the Second Workout Agreement and the 2006 Payment Agreement as if the Second Workout Agreement and the 2006 Payment Agreement never existed.

75. Under ¶ 5.7 of the Agreement, Philips is entitled to interest, accruing at the rate of 2% (two percent) per month, or the maximum amount permitted by applicable law, whichever is lower, on (a) all unpaid royalties, beginning on the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter, (b) the difference between the Standard Rates and the Compliance Rates for all royalties paid at the Compliance Rates on or after the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter, and (c) any royalties due to Philips under the Agreement, as if no Second Workout Agreement or 2006 Payment Agreement ever existed.

76. Under ¶ 13.5 of the Agreement, OEM agreed that neither Philips' failure nor delay in enforcing any provision of the Agreement shall constitute a waiver of such provision or of Philips' right to enforce any provision of the Agreement.

77. Philips has suffered monetary and other damages, in an as-yet-undetermined amount, as the direct and proximate result of OEM's material breach of the Agreement, Second Workout Agreement, 2006 Payment Agreement, and related promissory notes.

Count II
Patent Infringement

78. Plaintiff repeats and realleges each and every allegation set forth in this Second Amended Complaint.

79. In addition or in the alternative to Philips' breach of contract claim with respect to the Agreement, OEM has infringed, literally and/or under the doctrine of equivalents, the '846 patent by practicing one or more claims of the '846 patent in its manufacture, use, offering for sale, sale, and/or importation of products, and/or by inducing or contributing to the infringement of the '846 patent, under 35 U.S.C. § 271, through November 26, 2008.

80. The John Doe Defendants have infringed, literally and/or under the doctrine of equivalents, the '846 patent by practicing one or more claims of the '846 patent in their manufacture, use, offering for sale, sale, and/or importation of products, and/or by inducing or contributing to the infringement of the '846 patent, under 35 U.S.C. § 271, through November 26, 2008.

81. The '846 patent was valid and subsisting at all times relevant to this action and is entitled to a presumption of validity under 35 U.S.C. § 282.

82. U.S. Philips Corporation is the assignee of all rights, title, and interest in and to the '846 patent and possesses all rights of recovery under the '846 patent.

83. A Reexamination Request for the '846 patent was filed in the U.S. Patent and Trademark Office on December 8, 2004. Ex Parte Reexamination Certificate No. US 5,068,846 C1 (the "Reexamination Certificate"), confirming the patentability of claims 1 through 7 of the '846 patent, was issued by the U.S. Patent and Trademark Office on September 19, 2006. A true copy of the Reexamination Certificate is attached as **Exhibit H**.

84. OEM has had knowledge of the '846 patent at all times relevant to this action.

85. The infringement of the '846 patent by OEM has been and continues to be willful, and therefore Philips is entitled to treble damages under 35 U.S.C. § 284.

86. Philips has suffered monetary and other damages in an as-yet-undetermined amount, and irreparable injury, as the direct and proximate result of the infringement of the '846 patent by OEM.

Prayer for Relief

Wherefore, Philips requests that this Court enter judgment in its favor on each and every claim for relief set forth above and award it relief, including but not limited to a judgment and order as follows:

A. holding Defendant Optical Experts Manufacturing, Inc. liable for breach of contract, specifically, the Agreement, the Second Workout Agreement, the 2006 Payment Agreement, and the related promissory notes;

B. in addition or in the alternative with respect to Philips' breach of contract claim, holding Defendant Optical Experts Manufacturing, Inc. liable for patent infringement;

C. holding the John Doe Defendants jointly and severally liable for patent infringement;

- D. directing OEM to provide an accounting and to pay to Philips its actual damages for:
 - a. OEM's breach of contract; and/or
 - b. in addition or in the alternative with respect to Philips' breach of contract claim, OEM's patent infringement, under 35 U.S.C. § 284;
- E. directing the John Doe Defendants to pay to Philips its actual damages for patent infringement, under 35 U.S.C. § 284;
- F. directing OEM to pay:
 - a. unpaid royalties at the Standard Rates for all CD-Discs made, imported, sold, or otherwise disposed of by OEM in the U.S. beginning on the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter, through November 26, 2008;
 - b. the difference between the Standard Rates and the Compliance Rates for all royalties paid at the Compliance Rates on or after the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter; and
 - c. the difference between the Standard Rates and the payments made by OEM under the Second Workout Agreement and the 2006 Payment Agreement as if the Second Workout Agreement and the 2006 Payment Agreement never existed;
- G. directing OEM and the John Doe Defendants to pay Philips' other damages, including but not limited to direct, consequential, indirect, compensatory, and punitive damages;
- H. directing OEM to pay interest, at least as follows:
 - a. on all unpaid royalties, beginning on the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter;

b. on the difference between the Standard Rates and the Compliance Rates for all royalties paid at the Compliance Rates on or after the first day of the reporting period in which OEM was not in full compliance with all of its obligations under the Agreement and Side Letter;

c. on any royalties due to Philips under the Agreement, as if no Second Workout Agreement or 2006 Payment Agreement ever existed;

I. holding that OEM's and the John Doe Defendants' patent infringement has been and continues to be willful, and trebling Philips' damages;

J. directing OEM and/or the John Doe Defendants to pay Philips' attorneys' fees and costs under 35 U.S.C. § 285 and/or the Second Workout Agreement and the 2006 Payment Agreement and related promissory notes;

K. directing OEM and the John Doe Defendants to pay prejudgment and post-judgment interest;

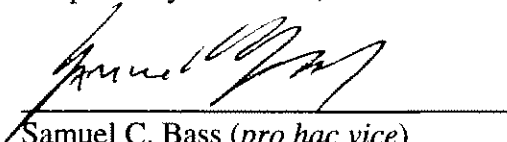
L. providing such other and further relief as this Court deems just and appropriate.

Jury Trial

Philips demands a jury trial on all claims set forth in this Second Amended Complaint.

Date: June 21, 2010

Respectfully submitted,



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EXHIBIT A

United States Patent [19]

[11] **Patent Number:** **5,068,846**

Kramer

[45] **Date of Patent:** **Nov. 26, 1991**

[54] **REFLECTIVE, OPTICAL RECORD CARRIER**

- [75] Inventor: **Pieter Kramer**, Eindhoven, Netherlands
- [73] Assignee: **U.S. Philips Corporation**, New York, N.Y.
- [21] Appl. No.: **858,550**
- [22] Filed: **Apr. 23, 1988**

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Related U.S. Application Data

- [63] Continuation of Ser. No. 146,554, May 5, 1980, abandoned, which is a continuation of Ser. No. 949,919, Oct. 10, 1978, abandoned, which is a continuation of Ser. No. 772,914, Feb. 28, 1977, abandoned, which is a continuation of Ser. No. 344,867, Mar. 26, 1973, abandoned.

[30] **Foreign Application Priority Data**

- Sep. 2, 1972 [NL] Netherlands 7211999
- [51] Int. Cl.⁵ **G11B 7/24; H04N 5/85**
- [52] U.S. Cl. **369/275.1; 358/342; 369/275.5; 369/109**
- [58] Field of Search 358/342; 365/113, 120; 369/275, 109, 93-94, 125, 107, 111, 275.1, 275.4, 275.5, 275

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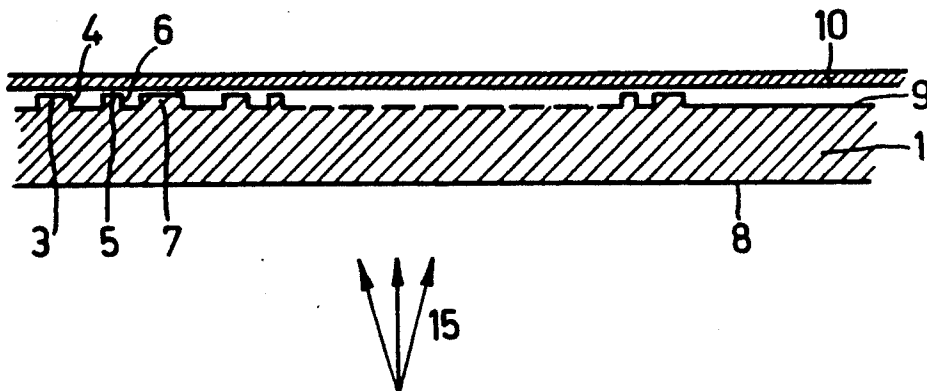
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Primary Examiner—Robert Weinhardt
Attorney, Agent, or Firm—Algy Tamoshunas; Leroy Eason

[57] **ABSTRACT**

A record carrier for information, for example video and/or audio information, in the form of a disk-shaped carrier substrate provided with an optical structure in accordance with the information is described. By making the optical structure radiation-reflecting and the substrate radiation-transmitting, whilst the surface of the substrate more remote from the optical structure forms both the entrance face and the exit face for the read radiation, and by coating a surface of the optical structure more remote from the substrate with an additional layer, a simple record carrier is obtained which is well protected against dust particles and damage.

7 Claims, 3 Drawing Sheets



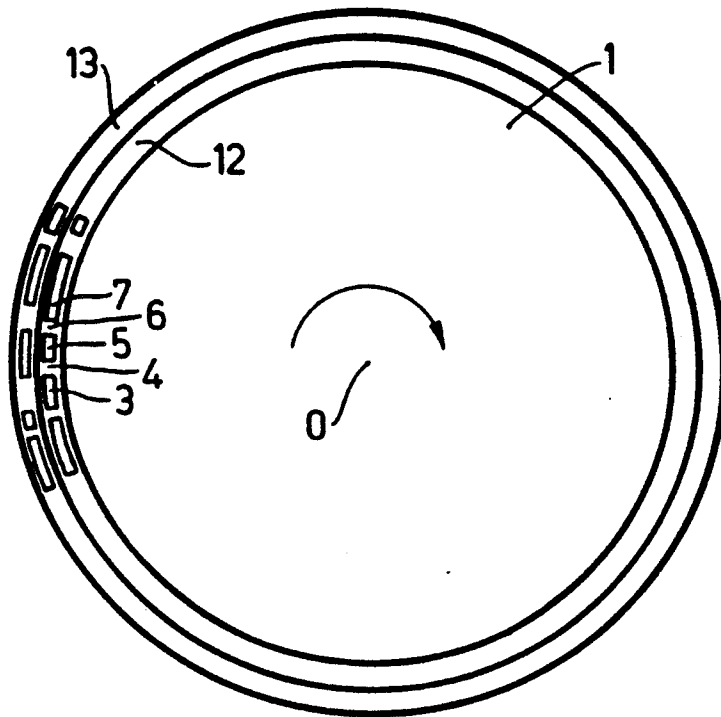


Fig. 1

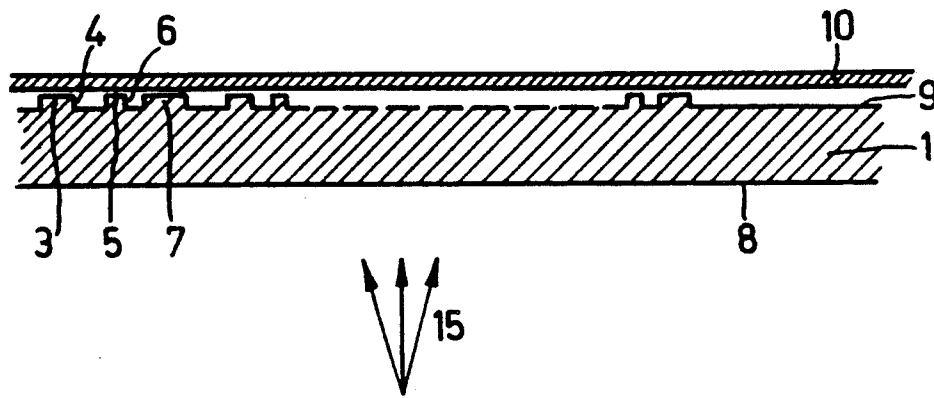


Fig. 2

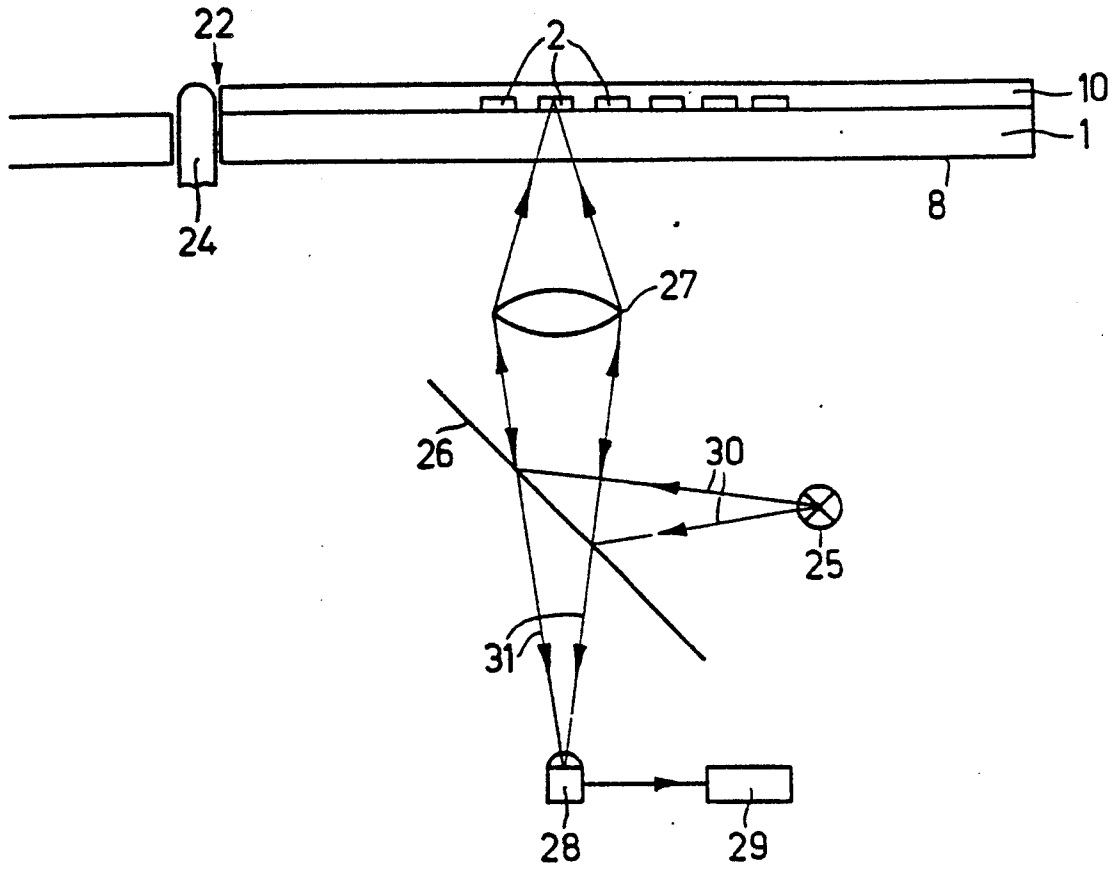


Fig. 3

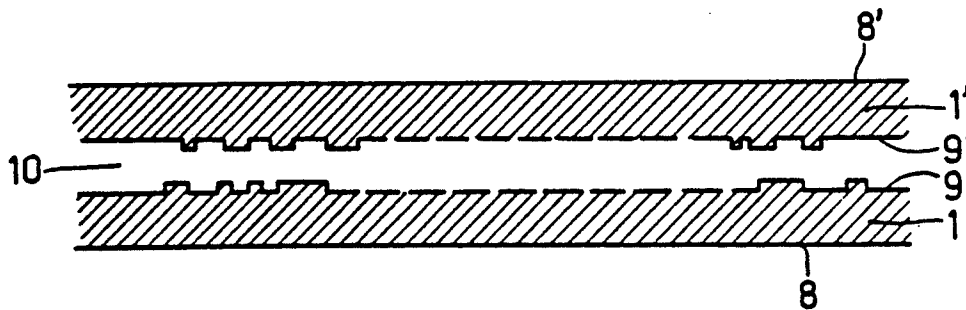


Fig. 4

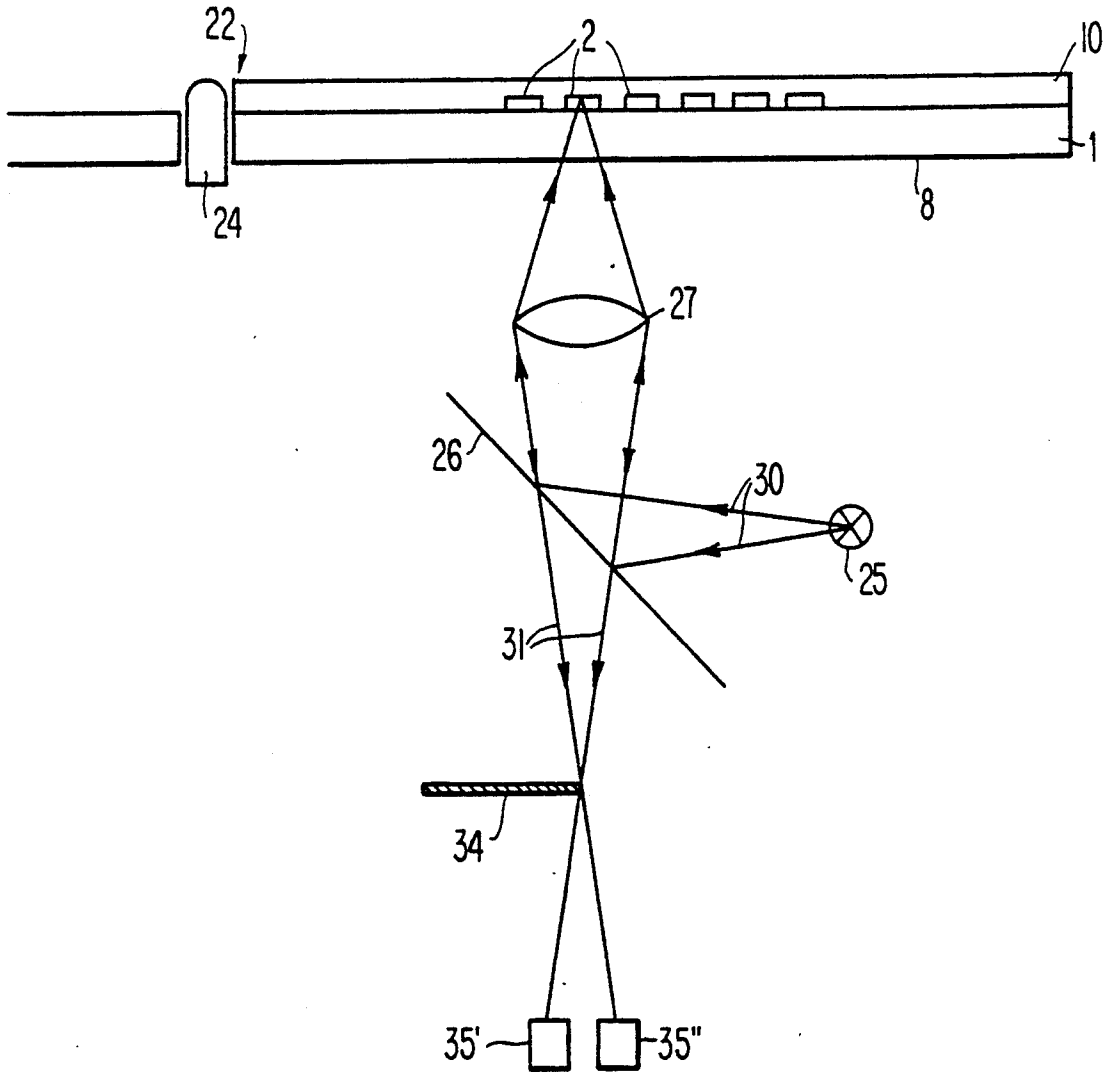


FIG. 5

REFLECTIVE, OPTICAL RECORD CARRIER

This application is a continuation of Ser. No. 146,554, filed May 5, 1980, which is a continuation of Ser. No. 949,919, filed Oct. 10, 1978, which is a continuation of Ser. No. 772,914, filed Feb. 28, 1977, which is a continuation of Ser. No. 344,867, filed Mar. 26, 1973, all such prior applications having been abandoned. This application is, further, a continuation-in-part of Ser. No. 229,285, filed Feb. 25, 1972, abandoned, which was continued as application Ser. No. 396,399, filed Sept. 12, 1973, abandoned, which was continued as application Ser. No. 618,215, filed Sept. 30, 1975, and issued as U.S. Pat. No. 4,041,530, dated Aug. 9, 1977.

The invention relates to a record carrier for information, for example video and/or audio information, in the form of a disk-shaped carrier substrate on which an optical structure is provided in accordance with the information, which record carrier is intended to be read by means of optical radiation. The invention also relates to an apparatus for reading the record carrier.

Such a record carrier and read apparatus are known and are described, inter alia, in "Journal of the S.M.P.T.E." 79(November 1970) pages 997-1002. In the known record carrier the information is stored in analog form, for example in the form of areas which have different absorption coefficients and are arranged in tracks. This registration carrier is read in the transmission mode in which a read beam enters the carrier on the side of the optical structure and emerges from it on the opposite side. In its passage through the carrier the beam is modulated by the structure in accordance with the information stored in it. The modulated beam is converted into an electric signal by a radiation-sensitive detector.

Because a large amount of information is stored on the record carrier, the details of the optical structure are very small, if, for example, a video program having a duration of 45 minutes is stored on a disk record carrier having an outer diameter of 30 cm, the side of the details will be of the order of $1\ \mu\text{m}$. Reading such a fine structure is highly susceptible to dust particles, fluff and the like. If these small objects lie on the optical structure, they may cover a large number of adjacent tracks and details in these tracks, preventing the latter from being read. In addition there is a very real possibility that, for example when the record carrier is handled or placed in the read apparatus, scratches and the like are made in the optical structure. Because the record carrier is intended to be played back in non-ideal circumstances, for example in the living room, provisions must be made to render the optical structure more or less unsusceptible to dust and damage.

The aforementioned paper proposes to coat the optical structure with an additional transparent layer. This is done to ensure that dust particles screen off only part of the read beam focussed on the optical structure of the record carrier. However, this requires the protective layer to have a minimum thickness of the order of many times the depth of focus of the lens used, for example a thickness of $100\ \mu\text{m}$. Moreover, the protective layer must intimately engage the optical structure, preventing the occurrence of local air bubbles between the optical structure and the protective layer.

In the known apparatus it is attempted to maintain the focus of the objective which focusses the read beam on the optical structure by causing the objective to "front"

on an air cushion on the record carrier. This pre-supposes, however, that the thickness of the protective layer is constant throughout the entire surface, or at least that it contains no variations in excess of the depth of focus of the objective, which is of the order of $1\ \mu\text{m}$. Consequently the protective layer has to satisfy exacting requirements.

It is an object of the present invention to provide a record carrier in which the optical structure is protected against dust particles and damage without the use of a protective layer which is required to satisfy stringent requirements. For this purpose the record carrier according to the invention is characterized in that the optical structure is a radiation-reflecting structure and the carrier substrate is radiation-transmitting, the surface of the carrier substrate more remote from the optical structure forming both the entrance face and the exit face for the read radiation. In this record carrier the carrier substrate itself ensures that dust particles are sufficiently spaced away from the optical structure.

According to a further feature of a record carrier according to the invention, the surface of the optical structure more remote from the carrier substrate is provided with an additional layer. Because the optical structure is completely embedded between two layers, it cannot readily be damaged.

The optical structure is read in the reflection mode, which means that the read beam is modulated by reflection at the optical structure. The additional layer is not traversed by the read beam and is only required to protect the optical structure from damage. Hence this layer need not satisfy exacting requirements. It need not be radiation-transmissive and need not have a constant thickness throughout its surface. In addition, it need not accurately engage the optical structure. It may, for example, be a plate which is secured to the carrier substrate along the edge.

The reflecting optical structure may be in the form of co-planar radiation-reflecting regions and intermediate areas, the areas having a coefficient of reflection different from that of the regions. Preferably, however, the optical structure consists of regions and intermediate areas having equally high reflection coefficients but situated at different levels.

The record carrier according to the invention differs from the known record carrier not only in construction but also in the manner in which during reading the read beam is maintained in focus on the optical structure. The flatness of the carrier substrate also which is required when employing the known method (an objective supported by an air cushion) can only be achieved by painstaking polishing. This greatly increases the cost of the disk. Optical determination according to the invention of the deviation between the plane of the optical structure and the plane in which the beam of radiation is focussed enables the range of permissible thickness variations over the carrier substrate to be extended to, for example, $300\ \mu\text{m}$.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, in which:

FIG. 1 is a plan view of a record carrier not coated with an additional layer,

FIG. 2 is a cross-sectional view of an embodiment of a record carrier according to the invention,

FIG. 3 is a known apparatus for reading the record carrier,

FIG. 4 is a cross-sectional view of a second embodiment of a record carrier according to the invention, and

FIG. 5 shows an arrangement for detecting focusing errors during reading of information from the record carrier.

FIG. 1 is a plan view of a circular record carrier. The carrier may contain a spiral structure comprising a plurality of quasi-concentric tracks. As an alternative, the tracks may be concentric, as is shown in FIG. 1. Only parts of two adjacent tracks denoted by 12 and 13 are shown. Each of the tracks contains, for example, a crenellated structure comprised of depressions which are spaced apart by intermediate areas or lands in the track direction, the dimensions of which are shown greatly exaggerated in FIG. 2, which is a tangential sectional view of a record carrier according to the invention. The spacings between, and the length of, the upper surfaces 3 and 5, 5 and 7, and so on of the merlons are different. Their heights 4, 6, and so on are equal to one another and, preferably, to about one quarter wavelength of the radiation used for reading. Instead of perpendicular leading and trailing edges the optical structure may alternatively have smooth transitions between the upper and lower surfaces.

The carrier substrate 1 transmits the radiation used for reading. The optical structure is provided on the upper surface of the disk, whilst the lower surface acts both as the entrance surface for the unmodulated beam and as the exit surface for the modulated beam. The faces of the optical structure have been made highly reflecting, for example in that after the structure has been pressed in the substrate a metal layer is deposited on it from vapour. The thickness of this metal layer is not of importance. A protective layer 10 is provided on top of the optical structure. The only purpose of this layer is to protect the optical structure of the record carrier against damage. Hence any layer which provides protection against rough handling of the carrier may be used. As FIG. 2 shows, the layer may be a thin disk which is spaced from the optical structure and is secured to the substrate along the edge only. In addition, a sheet of paper or a foil of a synthetic material provided with an adhesive on one surface may be stuck onto the optical structure. As an alternative, as is shown in FIG. 4, the layer, for example a sprayed layer of lacquer, may be provided on and between the merlons, in which case the thickness of the layer must be greater than the height of the merlons. Because the optical structure lies between the substrate 1 and the layer 10 it is fairly capable of withstanding rough handling.

A read beam (15) is modulated in phase by the crenellated structure shown in FIG. 2. As an alternative, the upper surface 9 of the substrate may be provided with a structure of radiation-reflecting regions and radiation-absorbing intermediate areas, causing the read beam to be modulated in amplitude.

When the disk record carrier shown in FIG. 1 is to be read, it is rotated at a speed of, for example, 1500 revolutions per minute by means of a driving spindle 24, as is shown in FIG. 3. In this Figure the record carrier is shown in radial section. A read beam 30 emitted by a source of radiation 25 is reflected to the record carrier by a half-silvered mirror 26. The beam passes through the carrier substrate 1 to be reflected at the optical structure (shown as tracks 2) on the upper surface of the disk. An objective 27 forms an image of the source on the optical structure, the size of this image being of the order of the smallest detail of the structure.

During rotation of the record carrier the read beam is modulated in time in accordance with the sequence of, for example, the merlons in a track. The modulated read beam 31 passes through the half-silvered mirror 26 to be intercepted by a radiation-sensitive detector 28. At the output of the detector an electric signal is produced which corresponds to the information stored in the record carrier. The detector 28 may be connected to known electronic means for converting the output signal of the detector into picture and sound.

The advantages of reading in reflection will be clear from FIG. 3. All the optical elements and the electronic processing devices are disposed on one side of the record carrier, permitting the carrier to be readily placed in the read apparatus. Moreover the elements may be incorporated so as to be well protected. Furthermore the number of optical elements may be reduced, because some elements are used twice. The reduced number of elements results in a reduced likelihood of relative oscillations.

Also, the record carrier may be read in a non-dustfree room, for example a living room, for dust particles deposited on the layer 10 have no effect, because the read beam does not pass through this layer. A dust particle on the lower surface 8 of the substrate may reduce the intensity of the radiation incident on the optical structure. However, a reduction in intensity is not highly inconvenient, because the information is recorded in digital form. A dust particle cannot entirely intercept the beam, because the beam has a comparatively large diameter in the plane of the dust particle. This is due to the fact that the substrate by nature has a certain thickness, inter alia because of the desired rigidity.

If the record carrier is to be suitable for manufacture by mass production methods, the flatness of the substrate should not have to satisfy exacting requirements. However, because the depth of focus of the objective 27 is of the order of 1 μm , variations in the thickness of the substrate may cause parts of the optical structure to become located outside the focussed light spot at the sites of these variations. These thickness variations, which cannot be compensated for by an objective floating on an aircushion, may cause the detector to receive not only radiation from the track part to be read, but also radiation from the surroundings of this part. As a result, the modulation depth of the output signal from the detector is reduced, while moreover, because not one track only but adjacent tracks are also illuminated, crosstalk may occur.

According to the invention the record carrier described may be used to advantage if during reading an optical focussing detection method is employed. For this purpose read apparatuses provided with focussing detection systems described in the patents identified below may be used. The use of the apparatuses for reading the record carrier according to the invention described in these patents means that the possibilities of the apparatuses described therein are particularly efficiently utilized.

One such arrangement is illustrated in FIG. 5 wherein a screen 34 is disposed in the path of the reflected beam 31 at a position such that the detectors 35' and 35'' receive equal amounts of radiation when the beam is properly focused on the reflective optical structure. If, on the other hand, the plane of the optical structure shifts from the desired position, the screen will intercept the rays which travel to one of the detectors

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so that said one detector will receive less radiation than the other. The amount and direction that the plane of the reflective optical structure deviates from the desired position can thus be determined by comparison of the output signals from the detectors 35' and 35''.

An optical determination of the deviation between the plane of the optical structure and the plane in which the read beam is focussed may be effected by imaging a grating constituted by adjacent tracks of the optical structure on two physical gratings spaced from the record carrier by different distances. The difference between the output signals of the detectors disposed behind the gratings indicates the magnitude and the direction of any deviation. A read apparatus including such focussing detection is described in U.S. Pat. No. 3,833,769.

A second possibility is offered by the apparatus described in U.S. Pat. No. 4,010,317 in which two detectors are arranged side by side, viewed in the direction of length of the track. The detectors intercept two different parts of the modulated beam.

As an alternative, the deviation between the plane of the optical structure and the plane in which the read beam is focussed may be detected without using the details in the optical structure, in contradistinction to the two aforementioned apparatuses. In such a method the optical structure is used only as a reflecting face, as is described in U.S. Pat. No. 3,876,841 and U.S. Pat. No. 3,876,842. By means of, inter alia, this face an image of an object is formed, the location of this image being determined by the location of the plane of the reflecting optical structure.

FIG. 4 shows a second embodiment of a record carrier according to the invention. Two substrates 1 and 1' which each have an optical structure on one surface 9 and 9' respectively are combined with an intermediate layer 10 to form an integral unit. Such a record carrier may be manufactured by methods known from the technology of disk-shaped sound records. The structures on the surfaces 9 and 9' are read by means of beams in opposite directions. In this embodiment the layer 10 is only required to separate the optical structures and need not protect them against external influences.

In the record carrier shown in FIG. 4 the two halves of one program may be stored in the two optical structures.

The record carrier shown in FIG. 4 is eminently suitable to realize a further inventional idea. According to this idea information about the same colored pictures is stored in different color codes in two optical structures of one record carrier. In one of these optical structures the program may be recorded, for example, according to the PAL-standard and in the other optical structure according to the Secam-standard or the NTSC-standard. The advantage is that the same information on one record carrier may be used in a large geographic area in spite of the fact that different apparatuses are used for rendering pictures and sound visible and audible respectively.

What is claimed is:

1. A record carrier containing information which is readable by a beam of radiation, said record carrier comprising a disc-shaped, radiation-transmitting substrate having a pair of planar surfaces on opposite sides thereof, a non-transmissive, radiation reflecting optical structure on one of said planar surfaces of said substrate, said optical structure comprising a plurality of adjacent, circular tracks extending about the center of said sub-

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strate and defining turns of a spiral or concentric circles spaced from each other in the radial direction, each circular track having a plurality of depressions in said one surface of said substrate, said depressions being spaced apart in the track direction by intermediate areas, and a reflective layer extending over said intermediate areas and said depressions so that upon illumination by a convergent beam of radiation which is projected on and enters through the other of said planar surfaces and which passes through said substrate and is focussed on said optical structure to a spot of a size of the order of the smallest detail of said optical structure, the radiation is modulated by said depressions and intermediate areas in accordance with the sequence thereof and the modulated radiation is reflected by said reflective layer towards and exists through said other planar surface, said substrate defining a substantially rigid support for said optical structure and having a thickness such that in the plane of said other surface, which forms the entrance and exit faces for the radiation, the diameter of the beam is sufficiently larger than the diameter of said spot so that dust particles, scratches and the like on said other surface, do not interfere with readout of information by the convergent beam focussed to said spot on said optical structure, and an additional layer secured to the side of said substrate remote from said other surface, said optical structure being disposed between said substrate and said additional layer so that it is protected from damage during handling.

2. The record carrier according to claim 1 wherein said depressions are pressed into said one surface of said substrate and said reflective layer is metallic and is deposited on said one surface.

3. The record carrier according to claim 1 or 2 wherein the thickness of said additional layer is substantially smaller than the thickness of said substrate.

4. The record carrier according to claim 2 wherein said reflective, metallic layer is deposited on said one surface from vapour.

5. The record carrier according to claim 4 wherein said additional layer is a layer of lacquer sprayed on said optical structure.

6. An apparatus for reading information stored on a record carrier having a disk-shaped radiation transmitting substrate with a pair of parallel, planar surfaces on opposite sides thereof and a non-transmissive, radiation reflecting optical structure disposed on one of said planar surfaces, said optical structure comprising a plurality of adjacent, circular tracks extending about the center of the substrate and defining turns of a spiral or concentric circles spaced from each other in the radial direction, each circular track having a plurality of depressions spaced apart by intermediate areas in the track direction, said apparatus comprising means for supporting the record carrier for rotation about the center of the substrate in a plane parallel to the plane of said one surface, means positioned on the side of said substrate remote from said optical structure for producing a beam of radiation which is projected onto the other surface of said substrate so that the radiation passes through said substrate and is incident on said reflective optical structure, an objective system for focusing said beam to a spot on said optical structure so that the radiation is modulated by said optical structure in accordance with information stored thereby and the modulated radiation is reflected by said optical structure back through said other surface and passes through said objective system, said substrate having a thickness such that in the plane

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of said other surface the diameter of the beam is sufficiently larger than the diameter of said spot so that dust particles, scratches and the like on said other surface do not interfere with readout of information by the beam focussed to said spot on said optical structure, radiation-sensitive means for converting the modulated radiation into an electrical signal, said radiation sensitive means being disposed in the path of the modulated radiation reflected by the optical structure, and means for deriving from the radiation a signal indicative of a deviation of the plane of the optical structure from the plane at which the radiation is focused by said objective system for correcting the focusing.

7. A record carrier containing information which is readable by a beam of radiation, said record carrier comprising a pair of disc-shaped, radiation-transmitting substrates each having a pair of planar surfaces on opposite sides thereof, a non-transmissive, radiation reflecting optical structure on one of said planar surfaces of each substrate, said optical structures each comprising a plurality of adjacent, circular tracks extending about the center of said substrate and defining turns of spiral or concentric circles spaced from each other in the radial direction, each circular track having a plurality of depressions which are spaced apart in the track direc-

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tion by intermediate areas, said substrates being disposed in a superposed relationship with said optical structures being adjacent each other so that upon illumination of said one optical structure by a beam of radiation which is projected on and enters through the other of said planar surfaces of the associated substrate and which passes through said associated substrate and is focussed on said one optical structure to a spot of a size of the order of the smallest detail of the optical structure, the radiation is modulated by said depressions and intermediate areas in accordance with the sequence thereof and the modulated radiation is reflected by said one optical structure towards and exits through said other planar surface of said associated substrate, each substrate defining a substantially rigid support for the respective optical structure and having a thickness such that in the plane of said other surface, which forms the entrance and exit faces for the radiation, the diameter of the beam is sufficiently larger than the diameter of said spot so that dust particles, scratches and the like on said other surface, do not interfere with readout of information by the convergent beam focussed to said spot on said optical structure.

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