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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NIGEL C. ABRAHAM, HOLGER HOFMANN
and RAYMOND L. KEATING

Appeal 2011-012830
Application 11/668,013
Technology Center 1700

Before RICHARD E. SCHAFER, JEFFREY T. SMITH and
BEVERLY A. FRANKLIN, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 1, 2, 4, 5, 7 through 11, 13 through 16 and 34 through 40. We have jurisdiction under 35 U.S.C. § 6.

Appellants' invention is directed to a method of mastering an optically variable device. App. Br. 2. Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A method of mastering an optically variable device comprising:

providing a mastering system including a device having a single beam, the device comprising one of a laser beam recorder (LBR) and an electron beam (e-beam) recorder;

introducing a prepared substrate to the mastering system;

rotating the prepared substrate;

exposing a portion of the prepared substrate directly to the single beam as the prepared substrate is rotating in order to produce an exposure on the prepared substrate;

fixing the position of the single beam and translating the rotating substrate radially to provide a continuous chopped spiral of overlapping exposures and create precise tracks at a desired angle to produce a desired optical effect, each rotation of the substrate exposing an area that either overlaps exposed areas of an earlier rotation or will be overlapped by a subsequent rotation such that the overlapping exposures are created at different points in time; and

processing the exposed prepared substrate in order to generate at least one of a master and a stamper for replication of the optically variable device.

The Examiner relied on the following references in rejecting the appealed subject matter:

Kitcher	US 4,099,062	July 4, 1978
Cowan	US 4,402,571	Sept. 6, 1983
Hochberg	US 4,737,448	Apr. 12, 1988
Endoh 537	US 6,556,537 B1	Apr. 29, 2003
Chiu	US 2005/0117222 A1	June 2, 2005
Endoh 836	US 2006/0007836 A1	Jan. 12, 2006
Nomura	JP 10-30833 A	Nov. 17, 1998
Daiko	JP 2003-248980 A	Sept. 5, 2003

Appellants, App. Br. 4-5, request review of the following rejections from the Examiner's final office action:

I. Claims 1-2, 7-8, 13-16, 36 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomura, Kitcher and Cowan.

II. Claims 1-2, 4-5, 7-11, 13-16, 36, and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Endoh 836, Kitcher and Cowan.

III. Claims 9-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomura, Kitcher, Cowan and Endoh 537.

IV. Claims 1-2, 9-10, 14-15, 35, and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiu, Nomura, Kitcher and Cowan.

V. Claim 34 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomura, Kitcher, Cowan and Daiko.

VI. Claims 39 and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiu, Nomura, Kitcher, Cowan and Hochberg

OPINION

Rejections I, II and IV

According to Appellants, the claimed invention relates to a method for mastering optically variable devices on articles by applying a single laser beam to a rotating article to produce an exposure on the article. Spec. 1; App. Br. 2-4. The optically variable devices are used for authentication of articles. Spec. 1.

The use of a single laser beam to record information onto a substrate having a photoresist coating is known in the art. Nomura ¶¶ [0003]-[0007], [0027], [0028], Fig. 1, 2, 5, 6; Endo 836 ¶¶ [0003], [0004], [0006]-[0008], [0038]-[0042], [0055], Fig. 1, 5; Chiu ¶¶ [0017], [0019]; Kitcher col. 2, ll. 29-50. It is also known to rotate a disk having a photoresist under a laser to expose the photoresist (Nomura Fig. 1[1]; Endo 536 ¶ [0055], Fig. 1, 5; Cowan Abstract).

With this background, the dispositive issue for this appeal is: Did the Examiner err in determining that it would have been obvious to one of ordinary skill in the art to modify the process of either Nomura, Endo 836 or Chiu to (1) incorporate the use of a single laser beam to provide overlapped exposures onto a substrate and (2) to rotate the substrate while being exposed to the laser beam as required by the subject matter of independent claim 1?[2]

After thorough review of the respective positions provided by Appellants and the Examiner, we answer the questions in the negative and AFFIRM for the reasons presented by the Examiner and add the following.

We refer to the Examiner's Answer for a statement of the Examiner's rejections (Ans. 5-13).

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[1] Contrary to the Examiner's determination (Ans. 6) and Appellants' arguments (App. Br. 7-8), Nomura's Figure 1 suggests a device and process where substrate 41 is rotated while being exposed to the laser beams. Note the rotational arrow under substrate 41 at the bottom of Fig. 1.

[2] We will limit our discussion to independent claim 1. Appellants have not argued the dependent claims separately. Accordingly, claims not argued separately will stand or fall together with independent claim 1.

Appellants argue that substituting Nomura's disclosed two beam exposure with Kitcher's single beam would change the principle of operation of the prior art invention being modified in violation of applicable patent law. App. Br. 8-9.

We are unpersuaded by this argument. As discussed above, the use of a single beam to expose a photoresist on a substrate is known to persons of ordinary skill in the art. Therefore, it would have been obvious to a person of ordinary skill in the art to use a single laser beam to expose the photoresist (a known technique) on a substrate with overlapping exposures in Nomura's method, as taught by Kitcher. Ans. 15; *See In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969).

While Appellants argue that it would be improper and speculative to only consider the limited portion of Kitcher directed to the single beam without taking into account that it exposes a stationary substrate (App. Br. 8-9), Appellants have not adequately explained why one skilled in the art would not have been capable of modifying Nomura's process to use the single laser beam of Kitcher (an art recognized technique).

With respect to rotating the substrate while exposed to the beam, Appellants argue that Cowan teaches rotating the substrate only in between exposures and not rotating the substrate as required by the subject matter of independent claim 1. *Id*. at 9.

We are also unpersuaded by this argument. As also discussed above, the concept of rotating a substrate while being exposed to lasers is known to persons of ordinary skill in the art. Thus, it would have been obvious to a skilled artisan to modify Nomura's method of making a master by rotating

the substrate with the resist during the exposure to the laser. *See Sovish*. Appellants further argue that the Nomura, Kitcher and Cowan references are not directed to making diffractive imagery for decoration or security. App. Br. 9-10. The Examiner found, and we agree, that all three references relate to formation of optical elements using a photolithographic method capable of forming sub-beam size exposures. Ans. 16-17. Moreover, Appellants acknowledge in their Specification that the use of holographic elements in disk substrates to deter counterfeiting is known. Spec. 1.

With respect to Rejection II, Appellants argue that Endo 836 is a process that uses multiple beams. App. Br. 11. , Appellants rely substantially on the same arguments for Kitcher and Cowan addressed above. *Id*. at 11-12. With respect to Rejection IV, Appellants argue that Chiu discloses a stationary substrate and fails to add anything to Nomura, Kitcher and/or Cowan so as to render Claim 1 obvious. *Id*. at 15. Since the issues are substantially the same as the ones addressed above, we direct Appellants' attention to our prior disposition of these arguments.

While Appellants argue that the Declaration by Alan Bruce Hamersley distinguished each and every one of the references applied by the Examiner (*id*. at 11-12, 17), we agree with the Examiner that the Declarant's statements do not offer an adequate technical explanation to distinguish the claimed invention from the cited references. Ans. 17. Declarant's statements merely repeat the Examiner's assessment of the prior art without addressing the Examiner's reasoning for the combination.

Accordingly, we sustain the rejection of claims 1-2, 7-8, 13-16, 36 and 38 under 35 U.S.C. § 103(a) as unpatentable over Nomura, Kitcher and Cowan (Rejection I), of claims 1-2, 4-5, 7-11, 13-16, 36, and 38 under

35 U.S.C. § 103(a) as being unpatentable over Endoh 836, Kitcher and Cowan (Rejection II) and of claims 1-2, 9-10, 14-15, 35, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Chiu, Nomura, Kitcher and Cowan (Rejection III) for the reasons given above and by the Examiner.

Rejections III, V and VI

The Examiner separately rejected claims 9-11 under 35 U.S.C. § 103(a) as unpatentable over Nomura, Kitcher, Cowan and Endo 537 (Rejection III)(Ans. 9); claim 34 under 35 U.S.C. § 103(a) as unpatentable over Nomura, Kitcher, Cowan and Daiko (Rejection V) (*id*. at 13); and claims 39 and 40 under 35 U.S.C. § 103(a) as unpatentable over Chiu, Nomura, Kitcher, Cowan and Hochberg (Rejection VI) (*id*. at 14).[3] In addressing these separate rejections, Appellants rely on the arguments presented when discussing independent claim 1. App. Br. 13, 18. Further, Appellants did not substantively address or further distinguish the cited secondary references based on the additional limitations of the rejected claims. *Id*. Therefore, we also affirm these rejections for the reasons given above and by the Examiner.

ORDER

The rejection of claims 1-2, 7-8, 13-16, 36 and 38 under 35 U.S.C. § 103(a) as unpatentable over Nomura, Kitcher and Cowan is affirmed.

The rejection of claims 1-2, 4-5, 7-11, 13-16, 36, and 38 under 35 U.S.C. § 103(a) as unpatentable over Endo 836, Kitcher and Cowan is affirmed.

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[3] The Examiner relied on the additional secondary references to Daiko and Hochberg to meet respective limitations of these claims. *Id*. at 13-15.

The rejection of claims 9-11 under 35 U.S.C. § 103(a) as unpatentable over Nomura, Kitcher, Cowan and Endo 537 is affirmed.

The rejection of claims 1-2, 9-10, 14-15, 35, and 37 under 35 U.S.C. § 103(a) as unpatentable over Chiu, Nomura, Kitcher and Cowan is affirmed.

The rejection of claim 34 under 35 U.S.C. § 103(a) as unpatentable over Nomura, Kitcher, Cowan and Daiko is affirmed.

The rejection of claims 39 and 40 under 35 U.S.C. § 103(a) as unpatentable over Chiu, Nomura, Kitcher, Cowan and Hochberg is affirmed.

TIME PERIOD

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

AFFIRMED

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