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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HIROMICHI ATSUUMI and TAKU AMADA

Appeal 2010-007465
Application 11/404,913
Technology Center 2800

Before DAVID M. KOHUT, BRYAN F. MOORE, and
TREVOR M. JEFFERSON, *Administrative Patent Judges*.

JEFFERSON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE¹

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1-12.² We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Introduction

The claims are directed to scanning optical system that includes a kink in the scanning lens to deflect light flux on a surface to be scanned through a scanning lens. Spec., Abstract. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A scanning optical system that deflects a light flux emitted by a light source by an optical deflector, and focuses the light flux on a surface to be scanned through a scanning lens, the scanning optical system comprising:

a kink producing unit configured to produce a kink in the scanning lens by contacting a middle portion that is a substantially middle portion of the scanning lens, the scanning lens having three portions comprised of first and second side portions and the middle portion, the first side portion closer to a surface to be scanned and the second side portion closer to the optical deflector on a path of the light flux,

wherein the middle portion includes a first middle portion and a second middle portion along an optical axis direction, the first middle portion is a portion closer to the first side portion, the second middle portion is a portion closer to the second side portion, and the contacting includes contacting the first middle portion at a first pressure and contacting the second middle portion at a second pressure that is different from the first pressure.

¹ Throughout the Decision, we refer to the Appellants' Appeal Brief ("App. Br.," filed Feb. 26, 2009), and Reply Brief ("Reply Br.," filed Jun. 29, 2009), and the Examiner's Answer ("Ans.," mailed May 4, 2009).

² The real party in interest is Ricoh Company LTD. App. Br. 1.

Rejections

The Examiner made the following rejections:

Claims 1-7, 9, 11, and 12 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Masataka (JP 2001-166235 A). Ans. 3-11.

Claims 8 and 10 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Masataka in view of Tomohiro (JP 10-268217 A). Ans. 12.

ANALYSIS

Claim 1 – 35 U.S.C. § 103(a)

Issue: Did the Examiner err in finding that Masataka teaches or suggests:

a kink producing unit configured to produce a kink in the scanning lens by contacting a middle portion that is a substantially middle portion of the scanning lens . . . , the contacting including the first middle portion at a first pressure and contacting the second middle portion at a second pressure that is different from the first pressure

as recited in claim 1?

Appellants contend that the screws 32a-32c and the leaf springs 31a-31c disposed above them in Masataka do not teach or suggest a kink producing unit as recited in claim 1. App. Br. 9. Appellants also contend that the Examiner's shifting or rearranging the location of the screw elements in Masataka, modifies the operation of the device rendering it unsatisfactory for its intended purpose. App. Br. 10. Appellants assert that it is not obvious to move a screw to the back of the lens closest to the scanning light source because it would disrupt the designed convergence created by the long length of the lens in the scanning direction. App. Br. 13-

14. Appellants argue that in Masataka, the screws on the lens run perpendicular to the line running between the light source and the middle of the lens and not the front and back middle portions as recited in claim 1. App. Br. 11, 14. Finally Appellants argue that the Examiner's stated rationale for shifting the screws in Masataka, which is to deform the lens to correct the shape of the scanning lines, would change the principle operation of the device, creating a bowed lens and never producing a kink in the lens as claimed. App. Br. 16

The Examiner responds that Masataka teaches or suggests all the limitations of independent claim 1 except for the exact positioning of the first and second middle portions for contacting the lens. Ans. 13. The Examiner found that "[s]hifting the location of the screws, or middle portions, either forward or backwards from the central line of the lens [in Masataka] is a mere rearrangement of an element that does not impart modification of the operation of the device." Ans. 13-14 (citing *In re Japikse* 181 F.2d 1019 (CCPA 1950)). The Examiner found that:

it would have been obvious to a person of ordinary skill in the art at the time of the invention was made that shifting the location of the middle portions would enable a user to adjust a scanning lens over a larger surface area of the lens in order to compensate for line bending.

Ans. 15-16.

Having reviewed Appellants' arguments that the Examiner erred and the Examiner's response, we agree with the Examiner. We agree with the Examiner's findings that the screws in Masataka (32a-32c) along the middle portion "are used to deform the lens to correct the shape of the scanning lines." Ans. 14. We also agree with the Examiner that Appellants claim

does not specify any particular distance between the first middle and second middle portion. *Id.* Thus, the screws identified in Masataka need only be shifted slightly to teach or suggest the limitations of the claim.

We are not persuaded by Appellants contention that shifting or rearranging the location of the screw elements in Masataka, would modify the operation of the device rendering it unsatisfactory for its intended purpose. App. Br. 10; Reply 3. While the Examiner's reasoning cannot have a rational underpinning if the proposed modification would render the reference being modified unsatisfactory for its intended purpose (*See Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (finding where a proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose, the proposed modification would not have been obvious)), Appellants do not provide sufficient persuasive evidence that shifting the contact points in Masataka by even a small amount would render it unsatisfactory for its intended use. Instead, Appellants agree with the Examiner that shifting the screws in Masataka away from the central line of the lens would modify the operation and could correct for scanning line errors. Reply 3. We agree with the Examiner's reasoning that modification of the screw location contact points in Masataka "continue to function to deform the lens to correct the shape of the scanning lens," which "allows for an additional degree of freedom when modifying the lens shape to correct for scanning errors." Ans. 14.

We are also not persuaded by Appellants' argument that modification of Masataka relies on impermissible hindsight. First, as explained in *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971):

Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper.

Our review of the record establishes that the Examiner's case for obviousness is only based on knowledge which was within the level of ordinary skill at the time of the Appellants' invention and does not include knowledge gleaned only from the Appellants' disclosure. The Examiner's stated motivation, that "[a] person of ordinary skill in the art at the time the invention was made would have been motivated to shift locations of the middle portions so the scanning lens could be adjusted over a larger surface area of the lens," Ans. 14, provides a rational underpinning for the proposed modification.

Appellants also argue that the Examiner's modification of Masataka would produce a bow as opposed to a kink recited in claim 1. App. Br. 14-16; Reply 4. Appellants admit, both bowing and kinking are types of bending. Reply 4. Appellants' claim 1 states no requirement on the degree of bending and Appellants' Specification does not provide a specific definition for the term "kink". Therefore, given the broadest reasonable interpretation of the claim term "kink," we find that the bow or deformity produced by shifting the screws in Masataka encompasses the kink producing limitation of claim 1. Ans. 16.

Based on the foregoing, we find that the Examiner did not err in finding that Masataka teaches or suggests:

a kink producing unit configured to produce a kink in the scanning lens by contacting a middle portion that is a

substantially middle portion of the scanning lens . . . , the contacting including the first middle portion at a first pressure and contacting the second middle portion at a second pressure that is different from the first pressure

as recited in claim 1. Accordingly, we sustain the Examiner's rejection of claim 1 under 35 U.S.C § 103(a) as being unpatentable over Masataka.

Claims 2, 7, 8, 9, 10, 11 and 12 – 35 U.S.C. § 103(a)

Appellants argue that claims 2, 7, 9, 11 and 12 rejected under 35 U.S.C § 103(a) as being unpatentable over Masataka recite similar features as claim 1 and relies on the arguments presented for claim 1. App. Br. 17; Reply 4. Appellants also make no separate arguments for claims 8 and 10 rejected under 35 U.S.C § 103(a) as being unpatentable over Masataka and Tomohiro. Accordingly, we sustain the Examiner's rejection of claims 2 and 7-12 under 35 U.S.C § 103(a).

DECISION

For the above reasons, the Examiner's rejection of claims 1-12 is affirmed.

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

AFFIRMED

ELD