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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CLAUDIO SAPORETTI

Appeal 2014-008285
Application 12/519,962
Technology Center 2400


SILVERMAN, Administrative Patent Judge.

DECISION ON APPEAL

Appellant\(^1\) seeks our review under 35 U.S.C. § 134(a) from the Final Rejection of claims 1–26. Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

The invention relates to image acquisition including at least two cameras for acquiring images from at least one object passing on a transporting plane and at least one lighting device associated with each of

\(^1\) The real party in interest is identified as Datalogic IP Tech S.r.l. of Bologna, Italy, App. Br. 2.
the two cameras and suitable for lighting the object. Abstract. Claim 1, reproduced below, is exemplary of the matter on appeal:

1. A system for image acquisition comprising at least two optical devices for acquiring images and a plurality of lighting devices, each optical device comprising a respective linear camera for acquiring images from at least one object passing on a transporting plane and at least one respective lighting device from the plurality of lighting devices associated with each camera for lighting said object in regions of said object from which said images may be acquired, wherein said cameras and respective lighting devices are grouped into at least two groups with each group comprising at least one camera and at least one respective lighting device and wherein said lighting devices light said object with light pulses, said light pulses being synchronized so that light generated by said at least one respective lighting device associated with a camera of one of said at least two groups does not light said object when a camera of another of said at least two groups acquires images, each camera acquiring said images only when its respective at least one lighting device is active.

App. Br. 17 (Claims App’x).

REJECTIONS


Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Freyman in view of Gauthier and Murakami, and further


ANALYSIS

The Examiner finds the combination of Freyman and Gauthier teaches the limitations of claim 1 and that one of ordinary skill in the art would incorporate the teaching of Gauthier into Freyman’s system to avoid light interference and enabling some areas to overlap without causing undesirable effect, while achieving predictable results. Final Act. 3–4; Ans. 14–21.

Appellant contends Freyman’s system teaches multiple cameras and a single light source consisting of a plurality of LEDs. App. Br. 7 (citing ¶¶ 15–17; Fig. 1). According to Appellant, the Examiner recognizes Freyman does not disclose:

(i) That a respective lighting device from the plurality of lighting devices is associated with each camera.

(ii) That cameras and respective lighting devices are grouped into at least two groups, each group comprising at least one camera and at least one respective lighting device.

(iii) That light pulses generated by the lighting devices are synchronized so that the lighting device associated with a camera of one of said at least two groups does not light the object when a camera of another of the at least two groups acquires images, each camera acquiring images only when its respective at least one lighting device is active.


Appellant argues Gauthier does not teach the disputed limitations missing in Freyman and, therefore, the combination of Freyman and Gauthier cannot render claim 1 obvious. App. Br. 8–9. According to Appellant, “[a]lthough Gauthier discloses alternatingly switching of the
LEDs 216 and 217, there is one single camera 228 for both LEDs 216, 217, and that one single camera 228 is always on.” App. Br. 9. Appellant further argues Gauthier’s alternately switching to avoid interference “is [the] interference from the light of different wavelengths emitted by the LEDs 216 and 217 that is reflected back to the same camera 228 that is associated with both LEDs 216, 217.” App. Br. 8–9 (citing Gauthier col. 11, ll. 43–46).

Appellant further argues the motivation to combine Freyman and Gauthier presented by the Examiner is inadequate and the suggested modification to Freyman would change the principle of operation of Freyman. Id. at 10. Appellant also argues the Examiner’s reliance on Haven for “the premise that the optimum arrangement of light sources and cameras is considered to be in the ambit of one of skill in the art” is misplaced. Id. at 10–11.

The Examiner interprets the claim 1 “‘grouping’ clause” (“at least two groups”) as a mental step “that is inconsequential to the system of claim 1 and thus is not material to patentability.” Ans. 15. In particular, the Examiner finds it is a floating step and not tied to any particular structure. Id. Based on this interpretation, the Examiner applies a claim 1 interpretation that includes association between a lighting device and a camera, but does not require grouping. Id.

Claim terms in a patent application are given the broadest reasonable interpretation consistent with the Specification, as understood by one of ordinary skill in the art. In re Crish, 393 F.3d 1253, 1256 (Fed. Cir. 2004). However, great care should be taken to avoid reading limitations of the Specification into the claims. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369 (Fed. Cir. 2003).
We disagree with the Examiner’s claim 1 interpretation as the grouping is tied to the placement and operation of the cameras and lighting devices. See also Reply Br. 1–3. In addition, the Examiner’s interpretation is not consistent with the Specification:

For example, if the cameras l04a-104e are divided into two groups of cameras, respectively A and B, wherein the view planes of the cameras of each group do not interfere with each other, and a scanning time t is established, the system can be programmed so that the cameras of any group acquire a row during one half t/2 of the scanning time then turn off their own lighting devices and leave the cameras of the other group to acquire a row of image during the other half t/2 of the time.

Spec. 15, ll. 11–19; see also Figs. 6–8.

The Examiner finds Gauthier teaches a plurality of LEDs (216, 216′ and 217, 217′) associated with respective cameras (228, 228′). Ans. 17 (citing Gauthier col. 11, ll. 29–46; Fig. 11). The Examiner finds the LEDs are alternatively switched so as to avoid light interference in areas of overlap and avoiding undesirable effects. Id. (citing Gauthier col. 1, ll. 43–45). The Examiner finds the cameras are synchronized with the LEDs to capture successive images in accordance with the respective LEDs. Id. (citing Gauthier col. 11, l. 59–col. 12, l. 14).

The Examiner also finds

that fixing groups of cameras and lighting subsystems and their respective timings is a matter of obviousness well within the scope of one of ordinary skill in the art. For support of the Examiner’s rationale, the Examiner points to Haven et al. (U.S. Patent No. 6,462,813) which discloses an inspection installation using a plurality of cameras and a

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2 We note Gauthier’s Figure 11 and the accompanying description do not consistently employ the use of the (prime) superscript to designate the corresponding lower items. See, for example, Gauthier col. 11, l. 6–col. 7, l. 14.
plurality of light sources (Figure 8, Col. 8 lines 50-64). Haven further
discloses, [t]he optimum arrangement of the light sources and cameras
in any particular installation is considered to be within the ambit of
one of skill in the art. Thus, the system in Fig. 8 is simply one possible
arrangement out of many that could be designed. See Col. 9 lines 2-7.
In view of the above, there is no patentably distinct feature of claim 1
because the Applicant has not invented any of the features of the
system, but merely claimed a rearrangement of parts that is well within
the scope of obviousness for a skilled artisan. The object inspection
system, cameras, conveyor, and lighting systems are all well-known
components in the field.

Final Act. 2.

We are not persuaded by Appellant’s arguments and, instead, agree
with the above Examiner’s findings. In particular, Gauthier teaches upper
LEDs 216 and 217 associated with upper camera 228 and lower LEDs 216’
and 217’ associated with lower camera 228’. Alternate switching is done by
the LEDs regarding the associated camera, namely the lower LEDs are
alternatively switched in operation with the lower camera and the upper
LED’s are alternatively switched in operation with the upper camera.
However, Gauthier broadly teaches the use of alternate switching to avoid
interference, not simply to avoid interference due to the different
wavelengths as asserted by Appellant. Gauthier, col. 11, ll. 43–46.

Claim 1 recites “at least two groups” with each group comprising “at
least one camera” and “at least one lighting device” wherein
light generated by said at least one respective lighting device
associated with a camera of one of said at least two groups does
not light said object when a camera of another of said at least
two groups acquires images, each camera acquiring said images
only when its respective at least one lighting device is active.
In Gauthier, the upper camera can be considered a first group camera along with first group upper lighting and the lower camera can be considered a second group camera along with second group lower lighting. Therefore, we agree one of ordinary skill in the art would reduce interference such that the light generated by said at least one respective lighting device [upper LEDs] associated with a camera (upper camera) of one of said at least two groups does not light said object when a camera (lower camera) of another of said at least two groups acquires images and, because the cameras and LEDs are synchronized, each camera (upper and lower) acquiring said images only when its respective at least one lighting device is active. Ans. 17–18 (citing Gauthier col. 11, ll. 29–46, l. 59—col. 12, l. 14; Fig. 11).

We are not persuaded by Appellant’s argument that Gauthier’s cameras 228 are always on because Gauthier teaches synchronizing the cameras and light sources such that there is no need for the cameras to always be on. See Gauthier col. 12, ll. 10–14. Further, Appellant’s argument is conclusory. Mere lawyer’s arguments and conclusory statements that are unsupported by factual evidence are entitled to little probative value. In re Geisler, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (“An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.”); see also In re De Blauwe, 736 F.2d 699, 705 (Fed. Cir. 1984).

We are not persuaded by Appellant’s arguments that there is no motivation to incorporate the teachings of Gauthier into Freyman because Freyman employs only one light device and, therefore, no interfering light devices and the incorporation would change the principle of operation of
Freyman by adding additional light sources. We agree with the Examiner’s finding that that one of ordinary skill in the art would incorporate\(^3\) the teaching of Gauthier into Freyman’s system to avoid light interference and enabling some areas to overlap without causing undesirable effect, while achieving predictable results. Appellant proffers unreasonably narrow teachings of the references as would be understood by one of ordinary skill in the art.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

As stated by the Supreme Court, the Examiner’s obviousness rejection must be based on

some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness . . . . [H]owever, the 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.


The Examiner’s findings are reasonable because the skilled artisan would “be able to fit the teachings of multiple patents together like pieces of

\(^3\) While Haven, discussed *supra*, indicates the general skill of one of ordinary skill in the art, we are relying on the broad teaching of Gauthier as understood by one of ordinary skill in the art.
a puzzle” since the skilled artisan is “a person of ordinary creativity, not an automaton.”  KSR, 550 U.S. at 420–21.

On this record, Appellant does not present sufficient evidence that the combination of the cited references was “uniquely challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.”  Leapfrog Enters., Inc. v. Fisher-Price, Inc., 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing KSR, 550 U.S. at 418–19).  Nor has Appellant provided objective evidence of secondary considerations, which our reviewing court guides “operates as a beneficial check on hindsight.”  Cheese Sys., Inc. v. Tetra Pak Cheese and Powder Sys., 725 F.3d 1341, 1352 (Fed. Cir. 2013).

In view of the above, we sustain the rejection of claim 1.  We also sustain the rejection of dependent claims 2, 3, 5, 7, 8, and 13–26.  See 37 C.F.R. § 41.37(c)(1)(iv).

Regarding dependent claim 4, Appellant argues Freyman does not teach “said cameras are arranged so that the fields of view of at least two of said cameras intersect each other.”  App. Br. 11–12 (citing Freyman Fig. 1); see also Reply Br. 7–8.  According to Appellant, Freyman does not discuss interference and the single light source suggests fields of view do not overlap to create interference.  App. Br. 11.  Appellant cites to the Specification to argue “prior art systems (like Freyman) can simply arrange their cameras such that the fields of view run parallel with one another and do not overlap and/or are spaced from one another.”  Id. at 11–12 (citing Spec. 13, ll. 3–9).  We are not persuaded by Appellant’s arguments and, instead, agree with the Examiner’s findings regarding Figure 1 of Freyman:
As can be seen, there are multiple camera elements (25) distributed throughout the apparatus. The Examiner notes that Freyman Paragraph [0016] discloses that the cameras in Figure 1 “are mounted such that they generally have a field of view that captures the coded symbology [sic] 21 to be scanned.” The Examiner more than reasonably inferred that at least the top two cameras have overlapping (i.e. intersecting) fields of view as they are positioned directly across from each other and both oriented at angles that allow capture object passing on the conveyor in illumination area 32. The Appellant’s arguments simply defies logic with respect to Figure 1 because the cameras need to be directed to the illumination area 32 to correspond to Freyman Paragraph [0017] which discloses, “the illumination area 32 corresponds the camera lens's view.”

Ans. 22–23.

Regarding dependent claim 6, Appellant argues Freyman does not teach wherein one of said cameras carries out the functions of said control device. App. Br. 12; Reply Br. 8. According to Appellant,

[t]here is no disclosure in the art of record of a camera device acting as a control device for each of the lighting devices, i.e., for the lighting device associated with it and the other lighting devices associated with the other cameras. The Action points only to Freyman paragraphs 28 and 32. But neither of these paragraphs contains any disclosure of a camera acting as a master controller for such lighting devices in the manner recited in claim 6.


We are not persuaded by Appellant’s arguments and, instead, agree with the Examiner’s findings. The Examiner finds “Freyman Paragraph [0032] explicitly states that ‘[t]he camera head contains the CCD or CMOS sensor board, timing and control circuitry, gate array (FPGA or ASIC) which supports the LED strobe and camera exposure.’” Ans. 23.
Regarding dependent claims 9–12, which are related to the light pulses, Appellant’s argue the Examiner’s reliance on Murakami is improper because Murakami is non-analogous art. App. Br. 13–14; Reply Br. 9–10. In particular, Appellant’s argue Murakami is directed to read and write operation of synchronous double rate DRAM (DDR-SDRM) and this is different from Appellant’s field of endeavor, image acquisition systems. Id. at 13. Appellant also argues Murakami’s disclosure isn’t reasonably pertinent to any problem associated with avoiding interference during image capture by cameras disposed around a moving conveyor such that one of ordinary skill in the art would not think to look to the teachings of the internal read/write operations of a DDR-SDRM when considering the problems faced by the present applicant. App. Br. 13–14.

We are not persuaded by Appellant’s arguments and, instead, agree with the Examiner’s findings that Murakami would be pertinent to one of ordinary skill in the art. The Examiner finds the subject matter involves “programming knowledge and generation of a clock signal (i.e. the ‘periodic reference signal’ of claim 6 from which claims 9-12 depend).” Ans. 24. The Examiner also finds:

Freyman Paragraph [0032] again points out that the camera head contains “timing and control circuitry[”], gate array (FPGA or ASIC) which supports the LED strobe and camera exposure, and the LED illumination board. Freyman Figures 2 and 4 illustrate similar logic control signals to those that are disclosed in the Murakami reference. Therefore, one of ordinary skill in the art would be motivated to explore “timing and control circuitry” such as that disclosed in Murakami.

Id.
DECISION

We affirm the Examiner’s decision rejecting claims 1–26.

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