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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID J. PAGE and BRIAN M. SPAHNIE

Appeal 2010-010253
Application 12/031,740
Technology Center 2800

Before ERIC B. CHEN, BRYAN F. MOORE, and LARRY J. HUME, *Administrative Patent Judges.*

MOORE, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 1-24 which represent all the pending claims. Br. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

INVENTION

The invention is directed to light emitting members made of flat optical fibers that emit light received through one or both ends out one or both sides to provide a desired light output distribution. *See* Spec. 1:11-13.

Claim 1 is exemplary of the invention and is reproduced below:

> 1. A light emitter comprising a plurality of individual flat optical fibers each having opposite flat sides and opposite side edges and opposite ends, the fibers being disposed in a common plane in side-by-side relation to one another, at least one surface mount light source optically coupled to an end of each of the fibers, each light source having substantially the same thickness as each of the fibers to which each light source is optically coupled, each of the fibers having a light conducting core that is cladded by an outer cladding to keep light in for conducting light entering the end of the fibers, and disruptions along at least a portion of the length of the fibers to cause conducted light to be emitted from at least one side of each of the fibers.

REFERENCES

Appeldorn	US 5,659,643	Aug. 19, 1997
Parker	US 6,079,838	Jun. 27, 2000
Parker	US 6,158,867	Dec. 12, 2000
Mabuchi	US 6,565,225 B2	May 20, 2003
Williams	US 2003/0095781	May 22, 2003

REJECTIONS AT ISSUE

Claims 1-3 and 5-10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Parker '838 and Appeldorn. Ans. 3-4.

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Parker '838 and Williams. Ans. 5-6.

Claims 14, 17, and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Parker '838 and Williams. Ans. 6-7.

Claims 15, 16, and 19-24 stand rejected under 35 U.S.C. § 102(b) as anticipated by Parker '838. Ans. 7-8.

Claim 1 stands alternately, rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Appeldorn and Mabuchi. Ans. 8-9.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Parker '838 and Parker '867. Ans. 9.

Claims 11, 12, 14, and 18 stand alternately rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Parker '838 and Williams. Ans. 9-10. [1]

ISSUES

1. Did the Examiner err in finding that Parker '838 and Appeldorn teach the limitations of claim 1; and

[1] Appellants acknowledge that independent claim 13 stands rejected. *See* Br. 2 ("This is an appeal from the decision of the Examiner mailed July 22, 2009 finally rejecting claims 1-24."). However, Appellants do not present any arguments regarding the rejection of claim 13. Accordingly, any such arguments are deemed to be waived. *See* 37 C.F.R. 41.37(c)(1)(iv).

2. Did the Examiner err in finding that Parker ‘838 and Appeldorn teach “a plurality of light sources each having substantially the same thickness and substantially less width than at least some of the fibers are optically coupled to an end of at least some of the fibers in side-by-side relation to one another across the width of at least some of the fibers,” as recited in claim 2; and

3. Did the Examiner err in finding that Parker ‘838 and Appeldorn teach “wherein a plurality of the fibers are held together by an adhesive film,” as recited in claim 9; and

4. Did the Examiner err in finding that Parker ‘838 and Appeldorn teach “wherein a plurality of the fibers are held together by mechanical clips or fasteners,” as recited in claim 10; and

5. Did the Examiner err in finding that Parker ‘838 discloses “a coating in intimate contact with the outer cladding on at least one of the sides,” as recited in claim 19; and

6. Did the Examiner err in finding that Parker ‘838 and Parker ‘867 teach “keypad having a plurality of rows of keys, the fibers having gaps between the fibers corresponding to the spacing between the plurality of rows of the keys so the fibers extend between the plurality of rows of the keys,” as recited in claim 4?

ANALYSIS

35 U.S.C. § 103(a) - Parker '838 and Appeldorn.

Claims 1-3 and 5-10

Claim 1

Claim 1 recites "plurality of individual flat optical fibers each having opposite flat sides and opposite side edges and opposite ends, the fibers being disposed in a common plane in side-by-side relation to one another." Appellants argue "the Examiner acknowledges on page 3 of the Office Action that Parker '838 does not disclose a plurality of individual flat optical fibers arranged side by side, but contends it would have been obvious to do so in view of Appeldorn." Appellants further argue "Appeldorn discloses an array of square fibers that are extruded or otherwise molded as one piece, not a plurality of individual flat optical fibers disposed in a common plane in side-by-side relation to one another as claimed." Br. 11. This argument is not persuasive.

The Examiner relies on Parker '838 to show "flat optical fibers." Figures 1 and 5 of Parker '838 show a flat optical fiber. Parker '838, Figs. 1, 5. The Examiner relies on Appeldorn to show plurality of individual optical fibers arranged in a common plane, side by side. As Appellants admit (Br. 11), Appeldorn discloses an array of square fibers. *See* Appeldorn, Figs. 4, 6. These square fibers are clearly side by side. *Id.* As to whether the fibers are molded together, claim 1 is silent as to whether the array of fibers is molded together or separate individual fibers. Therefore, this argument is not commensurate with the claim language. Accordingly, we find ample support for the Examiner's finding that the combination of Parker '838 and Appeldorn teach "plurality of individual flat optical fibers each having

opposite flat sides and opposite side edges and opposite ends, the fibers being disposed in a common plane in side-by-side relation to one another."

Claim 1 also recites that "each of the fibers having a light conducting core that is cladded by an outer cladding to keep light in for conducting light entering the end of the fibers." Appellants argue that the "air gaps [cited by the Examiner] do not provide an outer cladding to the light conducting core of the flat optical fibers of the light emitter of claim 1." Br. 12. The Specification states that "[s]urrounding the core portion 8 is an outer sheath or cladding 9 having an index of refraction that is different than that of the core material, whereby substantially total internal reflection is obtained at the core-cladding interface, as well known in the art." Spec., 6:32-7:2. The Examiner points to the air gaps and the adhesive to form the cladding. Parker '838 teaches that "the adhesive changes the internal critical angle of the light in a less controllable manner than the air gaps 30 (see FIG. 5) which are formed between the respective panel surfaces and the back reflector 26 and/or film 27 when only adhered along the peripheral edges." Parker '838, 6:31-35. Appellants do not identify any description in the original disclosure, other than what is cited above, that provides additional guidance in construing this term, nor do Appellants identify any description in the original disclosure that precludes the Examiner's application of the prior art to teach or suggest this term. Thus, we find ample support for the Examiner's finding that air gaps 30 are a cladding consistent with the use of the term in the specification.

Additionally, we note, Appellants admit that the use of a cladding was "known" prior to the invention. Appellants state:

> A known advantage in making light emitters out of optical fibers is that the optical fibers include a cladding that keeps the light in longer and allows the light to be distributed/emitted where desired by disrupting the optical fibers at one or more areas along their length as by roughening, marring, abrading, etching, grit blasting or thermally deforming one or more sides of the fibers.

Br. 2 (citing Spec. 1:20-25, 6:29- 7:7). Thus, for the reasons stated above, we find that Parker '838 teaches "each of the fibers having a light conducting core that is cladded by an outer cladding to keep light in for conducting light entering the end of the fibers."

Dependent Claim 2

Claim 2 recites "a plurality of light sources each having substantially the same thickness and substantially less width than at least some of the fibers are optically coupled to an end of at least some of the fibers in side-by-side relation to one another across the width of at least some of the fibers." Appellants argue that Parker '838 does not teach this limitation. Br. 12. We note that most of the terms in the limitation at issue were discussed above, except "a plurality of light sources each having substantially the same thickness and substantially less width than at least some of the fibers are optically coupled to an end of at least some of the fibers." Fig. 7 of Parker '838 shows a plurality of light sources 3 which are substantially the same thickness and substantially less width than at least some of the fibers and optically coupled to at least some of the fibers. Parker '838, Fig. 7; *see also* Ans. 13.

Regarding claims 3, and 5-7, Appellants repeat arguments discussed above, therefore these claims fall with claim 1.

Dependent Claim 9

As to claim 9, Appellants argue that "nowhere does Parker '838 disclose a plurality of flat optical fibers held together in side-by-side relation to one another by an adhesive film to form a light emitter as recited in claim 9." Br. 13. Parker '838 discloses an adhesive 28 that holds the optical fiber to the panel assembly, which in turn holds the fibers together in a side by side relation. Parker '838, Fig. 6; col. 6:25-31; *see also* Ans. 14. Thus, we are not persuaded by this argument.

Dependent Claim 10

Claim 10 recites "wherein a plurality of the fibers are held together by mechanical clips or fasteners." Appellants argue that Parker '838 does not disclose this limitation. However, Examiner relies on Appeldorn (4:35-36) to teach this limitation. Thus, Appellants argument does not respond to the Examiner's specific findings and, therefore, we are not persuaded by that argument.

35 U.S.C. § 103(a) - Parker '838 and Williams.

Claims 11 and 12

Regarding claims 11 and 12, Appellants repeat arguments discussed above, therefore these claims fall with claim 1.

35 U.S.C. § 103(a) - Parker '838 and Williams.

Claims 14, 17, and 18

Regarding claims 14, 17, and 18, Appellants repeat arguments discussed above, therefore these claims fall with claim 1.

35 U.S.C. § 102(b) - Parker '838.

Claims 15, 16, and 19-24

Regarding claims 15, and 16, Appellants repeat arguments discussed above, therefore these claims fall with claim 1.

Appellants argue that, "as disclosed in column 3, lines 18-20 of Parker '838, reflective coating 10 is on portions of the sides of the light transition areas of Figs. 1 and 2, not in intimate contact with the outer cladding of at least one flat optical fiber on at least one of the flat sides of the optical fiber as recited in claim 19." Br. 16. We are not persuaded by this argument. Parker '838 teaches that a reflector 26 may be attached or positioned against one side of the panel member 14 of Fig. 3 using a suitable adhesive 28. Ans. 20; *see also*, Parker '838, 6:25-30. The Examiner also finds that adhesive 28 acts as a cladding. *Id.* Therefore, we find ample support for the Examiners finding that Parker '838 teaches the limitations of claim 19.

35 U.S.C. § 103(a) - Appeldorn and Mabuchi.

Claim 1

As noted above, we affirm the Examiner's decision to reject claim 1 as unpatentable under 35 U.S.C. § 103(a) as being obvious over Parker '838 and Appeldorn. Therefore, we decline to reach the cumulative rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Appeldorn and Mabuchi.

35 U.S.C. § 103(a) - Parker '838 and Parker '867.

Dependent Claim 4

Claim 4 recites "keypad having a plurality of rows of keys, the fibers having gaps between the fibers corresponding to the spacing between the plurality of rows of the keys so the fibers extend between the plurality of rows of the keys." Appellants argue "the light emitter of Parker '867 is not comprised of a plurality of flat optical fibers having gaps between the fibers corresponding to the spacing between a plurality of rows of keys so the fibers extend between the rows of keys and have disruptions corresponding to the spacing between at least some of the keys in each row as recited in claim 4." Br. 18. We note that most of the terms in the above limitation are met by Parker '838 as discussed above, except the claimed gaps and keys. Parker '867 teaches gaps between the fiber (Fig. 7, item 41) and keys (Fig. 7, item 42). *See* Ans. 23. Therefore, we are not persuaded by this argument.

35 U.S.C. § 103(a) - Parker '838 and Williams.

Claims 11, 12, 14, and 18

As noted above, we affirm the Examiner's decision to originally reject claims 11, 12, 14, and 18 as unpatentable under 35 U.S.C. § 103(a) as being obvious over Parker '838 and Williams. Therefore, we decline to reach the cumulative rejection of claims 11, 12, 14, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Parker '838 and Williams.

DECISION

The Examiner's decision to reject claims 1-24 is affirmed. We do not reach the Examiners decision to reject claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Appeldorn and Mabuchi. We also do not reach the

Examiners cumulative rejection of claims 11, 12, 14, and 18 as unpatentable under 35 U.S.C. § 103(a) as being obvious over Parker ‘838 and Williams.

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

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