

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KUNIO ODANAKA

Appeal No. 1996-3152
Application No. 08/043,743¹

HEARD: January 12, 2000

Before, McCANDLISH Senior Administrative Patent Judge and
ABRAMS and GONZALES, Administrative Patent Judges.

GONZALES, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the examiner's refusal to allow claim 1, as amended subsequent to the final rejection.² Claim

¹ Application for patent filed April 7, 1993.

² See Paper No. 16.

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6 was canceled subsequent to the final rejection.³ Claims 2 through 5 and 7 through 10, the only other claims in the application, stand withdrawn from consideration under 37 CFR § 1.142(b).

We REVERSE.

The subject matter on appeal is directed to a method of uniting a number of optical fibers. The appealed claim reads as follows:

1. A method of uniting a number of optical fibers comprising the steps of:
 - (a) preparing a tubular member of a shape memory alloy with a reception space, wherein the tubular member has a bent axis in its memorized shape;
 - (b) processing the tubular member in such a manner that the cross-sectional area of said reception space is larger than the cross-sectional area in the memorized shape of said tubular member and that said axis of the tubular member contains a gentler bend compared with the bend of the bent axis in the memorized shape;
 - (c) applying an adhesive to portions of a number of optical fibers over a predetermined length;
 - (d) inserting said portions of said optical fibers into said processed tubular member after steps (b) and (c);
 - (e) subsequently heating said tubular member to return the tubular member to the bend of the axis in memorized shape and to reduce the cross-sectional area of said reception space, thereby uniting said optical fibers received in said tubular member, a cross-sectional shape of said united optical fibers being determined by said memorized shape of said tubular member; and

³ See Paper No. 10.

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(f) curing said adhesive by said heating.

The prior art references of record relied upon by the examiner in rejecting the appealed claim are:

Siegmund	3,580,775	May
25, 1971 McCartney	3,914,015	
Oct. 21, 1975		
Hirano et at. (Hirano)	59-121006	Jul. 12,
1984 ⁴		
(Japanese published application)		

Additionally, the examiner relies on the admitted prior art (APA) described in the second full paragraph on page 1 of the appellant's specification.

The following rejections are before us for review:

(I) Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over McCartney;

(II) Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over McCartney in view of Hirano and either Siegmund or the APA; and

(III) Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over the APA in view of McCartney and

⁴In determining the teachings of Hirano, we will rely on the translation provided by the PTO. A copy of the translation is attached for the appellant's convenience. Any reference in this decision to Hirano by page is to this translation.

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Hirano.⁵

The full text of the examiner's rejections and the responses to the arguments presented by appellant appear in the answer (Paper No. 14), supplemental answer (Paper No. 18) and the second supplemental answer (Paper No. 20) while the complete statement

of appellant's arguments can be found in the main, the reply and the supplemental reply briefs (Paper Nos. 13, 15 and 19 respectively).

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and the claim, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we conclude that none of the § 103 rejections can be sustained.

Rejection (I)

Appellant argues that the examiner has failed to

⁵ Rejections (II) and (III) are designated in the answer, pages 4-7, as new grounds of rejection.

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establish a prima facie case of obviousness because McCartney fails to teach or suggest the step of preparing a tubular member of a shape memory alloy with a reception space, wherein the tubular member has a bent axis in its memorized shape as called for in Claim 1.

The examiner acknowledges (answer, page 3) that McCartney does not teach preparing the termination pins or tubular members 13 and 14 with bent axes, but argues that the shape of the axis

of the termination pin 13 or 14 before and after heating is a

matter of design choice because "such shape per se solves no stated problem" (id. at 4).

We do not agree. We are informed by appellant's specification (page 2) that known methods of uniting optical fibers in a bent condition are cumbersome and result in low optical fiber filling density. Appellant's specification also informs us that the claimed invention provides an easier method of uniting optical fibers with a high filling density without damaging the optical fibers (see, for example, page 2,

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lines 24-26 and paragraph bridging pages 14 and 15). Thus, according to appellant's specification, the claimed method does solve a number of known problems in the art. Compare In re Kuhle, 526 F.2d 553, 555, 188 USPQ 7, 9 (CCPA 1975) wherein the court indicated that the rationale of "obvious matter of design choice" applies when a modification is made which "solves no stated problem." Therefore, we do not agree that the examiner has a valid basis for asserting that it would have been an obvious matter of mechanical "design choice" to prepare a tubular member of a shape memory alloy with a reception space, wherein the tubular member has a bent axis in its memorized shape.

From our perspective, the examiner has impermissibly relied upon the appellant's own teachings in arriving at a conclusion of obviousness. This being the case, we will not sustain the rejection of claim 1 under 35 U.S.C. § 103 based on McCartney alone.

Rejections (II) and (III)

In both Rejections (II) and (III), the examiner relies on

Hirano for a teaching of a shape memory alloy used to control the shape of an optical fiber. Hirano discloses at page 6 and in Fig. 2 an assembly structure for an optical conductor including a shape memory alloy 3 surrounding an auxiliary metal material 2 and an optical fiber 1. Hirano teaches that the cable illustrated in Fig. 2 is made by fixing the cross-sectional shape of the shape memory alloy as shown in Fig. 3A (the memorized shape). The shape memory alloy is then deformed or processed to the shape shown in Fig. 3C. The optical fiber 1 and auxiliary metal 2 are next placed in the shape memory alloy 3 (Fig. 3D) and fixed therein by heating the alloy to the prescribed temperature such that the shape memory alloy 3 returns to its memorized shape (Fig. 3E). In addition, Hirano teaches (page 7) that the

assembled optical cable 10' can be processed to memorize a desired shape, such as, the curved shape shown in Fig. 4 or 5.

Appellant argues (supplemental reply brief, page 2) that the tubular member recited in claim 1 is heated only once to

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return the tubular member to the memorized bent shape and to reduce the cross-sectional area of the reception space whereas the shape memory alloy 3 in Hirano is subjected to a first memorization treatment to obtain the cross-sectional shape shown in Fig. 3E and then a second memorization treatment to obtain the bent shape shown in Fig. 4.

The examiner's response (second supplemental answer, page 2) is that claim 1 is so broad as to read on the double-heating process disclosed by Hirano. We disagree. Step (b) of claim 1 calls for:

processing the tubular member in such a manner that the cross-sectional area of said reception space is larger than the cross-sectional area in the memorized shape of said tubular member and that said axis of the tubular member contains a gentler bend compared with the bend of the bent axis in the memorized shape;

Step (c) calls for applying an adhesive to portions of a number of optical fibers. Steps (d) and (e) call for inserting

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the portions of the optical fibers with the adhesive into the processed tubular member after steps (b) and (c) and then heating the tubular member. In other words, the claim specifically requires that the tubular member be processed for both cross-sectional area and axis shape before the heating step recited in paragraph (e). Therefore, we cannot support the examiner's interpretation of claim 1.

It is also the examiner's position that even if the claim does require the tubular member to return to the memorized bent shape and cross-sectional area by means of a single heating step, it would have been obvious to so modify Hirano "because the tubular member is of a single homogenous material, any of its physical dimensions and orientations can be affected by a single memorization treatment and a single heat treatment" (second supplemental answer, page 3).

As to the examiner's contention that it would have been obvious to return Hirano's tubular member to the memorized bent shape and cross-sectional area by means of a single heating step, we must point out that obviousness under § 103 is a legal

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conclusion based on factual evidence (In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)) and the mere fact that such a result could occur does not serve as a proper basis for concluding that such a modification would have been obvious. Instead, it is well settled that in order to establish a prima facie case of obviousness the prior art teachings must be sufficient to one of ordinary skill in the art to suggest making the modification needed to arrive at the claimed invention. See, e.g., In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984). The examiner, however, has provided no factual basis whatsoever for concluding that the modification proposed would have been obvious. See, e.g., In re GPAC Inc., 57 F.3d 1573, 1582, 35 USPQ2d 1116, 1123 (Fed. Cir. 1995) and In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968)).

We have also carefully reviewed the APA and the Siegmund patent additionally relied upon by the examiner in support of Rejections (II) and (III), but find nothing therein that makes

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up for the deficiencies of McCartney and Hirano noted above.
It follows that Rejections (II) and (III) cannot be sustained.

In summary, all of the examiner's rejections of claims 1
under 35 U.S.C. § 103 are reversed.

REVERSED

HARRISON E. McCANDLISH)	
Senior Administrative Patent Judge)	
)	
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)	BOARD OF PATENT
NEAL E. ABRAMS)	APPEALS
AND		
Administrative Patent Judge)	
INTERFERENCES)	
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