

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL C. BERG
and FRANK T. KEYSER

Appeal No. 2004-1074
Application No. 09/924,772

ON BRIEF

Before MCQUADE, NASE, and BAHR, Administrative Patent Judges.
MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Paul C. Berg et al. appeal from the final rejection of claims 1 through 21, all of the claims pending in the application.

THE INVENTION

The invention relates to "an electrical connector assembly which includes a plurality of terminals that must be held rigidly for termination purposes" (specification, page 1).

Representative claim 1 reads as follows:¹

1. An electrical connector assembly, comprising:
a dielectric housing having a mating end, a terminating end and a plurality of terminal-receiving passages extending in a direction between said ends; and
a termination subassembly fixed to the terminating end of the housing, the termination subassembly including
a circuit board,
a plurality of terminal pins extending through the circuit board and into the terminal-receiving passages in the housing with the terminal pins having termination ends and mating ends at the mating end of the housing,
a plurality of filters on the circuit board and electrically connected to at least some of the terminal pins, and
a plastic pin holder overmolded about portions of the termination ends of the terminal pins leaving portions of the termination ends exposed at the terminating end of the housing, about the filters and about at least a portion of the circuit board, thereby rigidly supporting the termination ends of the terminal pins for connection to appropriate conductors.

THE PRIOR ART

The references relied on by the examiner as evidence of obviousness are:

Shepherd	4,781,624	Nov. 1, 1988
Okamoto et al. (Okamoto)	5,145,413	Sep. 8, 1992
Cohen	5,236,376	Aug. 17, 1993
Ward	5,599,208	Feb. 4, 1997

¹ The recitations in claims 1 and 13 that the termination ends of the terminal pins are "exposed at the terminating end of the housing" is at odds with the underlying specification which indicates that the termination ends 16b of the pins 16 are exposed at the termination face 32a of the pin holder 32, rather than at the terminating end 20 of the housing 12. In the event of further prosecution, appropriate steps should be taken to resolve this inconsistency.

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Legrady et al. (Legrady)	5,816,868	Oct. 6, 1998
Belopolsky	5,842,888	Dec. 1, 1998
Uchiyama	6,007,387	Dec. 28, 1999

THE REJECTIONS

Claims 1 through 4, 6, 8, 9, 13 through 16 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen in view of Okamoto.

Claims 5 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen in view of Okamoto and Uchiyama.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen in view of Okamoto and Belopolsky.

Claims 10 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen in view of Okamoto and Shepherd.

Claims 12 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen in view of Okamoto and Ward.

Claims 11 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cohen in view of Okamoto, Shepherd and Legrady.

Attention is directed to the main and reply briefs (Paper Nos. 7 and 10) and to the answer (Paper No. 8) for the respective

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positions of the appellants and the examiner regarding the merits of these rejections.²

DISCUSSION

I. Preliminary matter

The appellants raise as an issue in this appeal an objection to the drawings made in the final rejection (see page 8 in the main brief). This objection, however, is not directly connected with the merits of issues involving a rejection of claims. It is therefore reviewable by petition to the Director rather than by appeal to this Board (see In re Hengehold, 440 F.2d 1395, 1403-1404, 169 USPQ 473, 479 (CCPA 1971)) and will not be further addressed in this decision.

II. The merits

Cohen, the examiner's primary reference, pertains to filtered electrical connectors. For purposes of the appealed rejections, the examiner focuses on the connector shown in Figures 1A, 1B, 12A and 12B. Cohen describes this connector as follows:

² In the final rejection (Paper No. 4), claims 1 through 21 also stood rejected under both the first and second paragraphs of 35 U.S.C. § 112. The examiner has since withdrawn these rejections in light of the arguments advanced in the main brief (see pages 2, 7 and 8 in the answer).

. . . The connector comprises a conductive housing 10, typically formed of aluminum or stainless steel, which surrounds a connector assembly including forward and rear perforated insulated blocks 12 and 14, typically formed of a ceramic or plastic material, through the apertures of which extend pins 16 forming part of a filter assembly 18.

In accordance with a preferred embodiment of the present invention, filter assembly 18 comprises at least one and preferably at least two printed circuit boards 20 having surface mounted thereon filter

circuits 22 which provide desired transient suppression and filtering for protection of electrical and electronic equipment from spurious energy inputs, including for example, EMI, RFI and EMP [column 2, line 62, through column 3, line 8].

The examiner concedes that the Cohen connector does not respond to the limitations in independent claim 1, and the corresponding limitations in independent claim 13, requiring a plastic pin holder overmolded about portions of the termination ends of the terminal pins, the filters and at least a portion of the circuit board for rigidly supporting the termination ends for connection to appropriate conductors. According to the examiner,

[i]n Cohen, the insulator 14 surrounds portions of the pins and is adjacent the circuit board 20 (as is shown in applicant's drawings), however the insulator 14 is not overmolded about portions of the pins or the board. Note however that Cohen does show in the figures (see figures 2-5, 10, 11) that the circuit board filter assembly is encapsulated, although this aspect of the invention is not discussed [answer, page 4].

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To overcome this admitted deficiency, the examiner looks to Okamoto's disclosure of a noise suppressing electrical connector designed to facilitate automated assembly. This connector includes a filter block 1 comprising "a plurality of lead terminals 2 arranged in parallel, a capacitor array 3 for the lead terminals 2, and an earth metal plate 4, all stacked one upon the other and molded together with an insulating synthetic resin 5" (column 3, lines 7 through 11).

In proposing to combine Cohen and Okamoto to reject claims 1 and 13, the examiner submits that

it would have been obvious to overmold an insulative pin holder over the filter assembly 18 of Cohen (including or not including the insulator 14), as taught in Okamoto, and as suggested by figures 2-5, 10, and 11 of Cohen. The suggestion or motivation for doing so would have been [to] facilitate automated assembly as taught in Okamoto [answer, page 4].

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, 208 USPQ 871, 881 (CCPA 1981).

With regard to the modification of Cohen in view of Okamoto proposed by the examiner, the combined teachings of these references at most would have suggested overmolding plastic about Cohen's filter assembly 18. These prior art teachings contain no suggestion for including Cohen's rear perforated insulated block 14 in the overmolded plastic. Thus, the overmolded plastic would extend only about the central portions of Cohen's pins 16, leaving the opposite ends of the pins free to an extent similar to that illustrated in Okamoto's Figure 2. To explain away the ostensible failure of such structure to meet the limitations in claims 1 and 13 requiring the plastic pin holder to be overmolded about portions of the termination ends of the terminal pins, the examiner contends that the appellants' specification and claims define each terminal pin as being divided into two parts or halves, i.e. a mating end and a termination end, and that Cohen's pins may be similarly construed, with the result that an overmolding extending about the central portions of Cohen's pins also would extend about portions of the termination ends of the pins (see page 8 in the answer and the marked up copy of Cohen's Figure 12A appended to the answer). The appellants' specification and claims, however, contain no such definition of

the termination ends of the pins,³ and any like interpretation of Cohen's pins is unreasonable. Thus, while the combined teachings of Cohen and Okamoto arguably would have suggested overmolding plastic about Cohen's filter assembly 18, the resulting structure would still lack response to the limitations in claims 1 and 13 requiring a plastic pin holder overmolded about portions of the termination ends of the terminal pins for rigidly supporting the termination ends for connection to appropriate conductors.

Accordingly, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of independent claims 1 and 13, and dependent claims 2 through 4, 6, 8, 9, 14 through 16 and 18, as being unpatentable over Cohen in view of Okamoto.

As the other references applied by the examiner do not cure the above noted shortcomings of Cohen and Okamoto relative to the subject matter recited in parent claims 1 and 13, we also shall not sustain the standing 35 U.S.C. § 103(a) rejection of dependent claims 5 and 17 as being unpatentable over Cohen in view of Okamoto and Uchiyama, the standing 35 U.S.C. § 103(a) rejection of dependent claim 7 as being unpatentable over Cohen

³ Indeed, the appellants' specification and drawings describe and show the termination ends 16b of terminal pins 16 as consisting of a swaged head portion limited to the extreme tail end of the pin.

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in view of Okamoto and Belopolsky, the standing 35 U.S.C. § 103(a) rejection of dependent claims 10 and 19 as being unpatentable over Cohen in view of Okamoto and Shepherd, the standing 35 U.S.C. § 103(a) rejection of dependent claims 12 and 21 as being unpatentable over Cohen in view of Okamoto and Ward, or the standing 35 U.S.C. § 103(a) rejection of dependent claims 11 and 20 as being unpatentable over Cohen in view of Okamoto, Shepherd and Legrady.

SUMMARY

The decision of the examiner to reject claims 1 through 21 is reversed.

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REVERSED

JOHN P. MCQUADE)	
Administrative Patent Judge)	
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)	APPEALS AND
JEFFREY V. NASE)	
Administrative Patent Judge)	INTERFERENCES
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JENNIFER D. BAHR)	
Administrative Patent Judge)	

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