

The opinion in support of the decision entered today was not written for publication and is not binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAYMOND ROBERT HORTON, ISMAIL CEVDET NOYAN,
MICHAEL JON PALMER and WILLIAM EDWARD PENCE IV

Appeal No. 2001-1771
Application No. 09/205,782

ON BRIEF

Before ABRAMS, FRANKFORT, and STAAB, Administrative Patent Judges.

STAAB, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 22, 23, 26 and 28-35, all the claims currently pending in the application. The amendment filed on April 21, 2000 (Paper No. 14) subsequent to the most recent final rejection has not been entered.

By way of background, the subject matter at issue in this appeal is similar to the subject matter at issue in Appeal No. 95-2763 in application S.N. 07/909,925, now abandoned.¹ In the prior appeal, a merits panel of this Board affirmed the examiner's decision finally rejecting the claims at issue therein.

Appellants' invention pertains to a flexible wiring for use in electronic apparatus (claim 28), a cabling member in an electronic apparatus (claim 32), and an improvement in packaging of electronic apparatus (claim 33). A copy of the appealed claims can be found in an appendix to appellants' second reply brief (Paper No. 24).

As evidence of obviousness, the examiner relies upon the following items:

Adkins	4,408,255	Oct. 4, 1983
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Applicants' Admitted Prior Art (hereinafter, AAPA) as set forth on page 9, lines 16-22, of appellants' specification.

Claims 22, 23, 26 and 28-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Adkins in view of AAPA.

Reference is made to appellants' main brief, first reply brief, and second reply brief (Paper Nos. 18, 20 and 24) and to the second examiner's answer (Paper No. 23) for the respective positions of appellants and the examiner regarding the merits of this rejection.

¹The present application is said to be a continuation-in-part of the '925 application.

Discussion

Each of the independent claims on appeal calls for, in one form or another, a body element being made of a material with randomly intertwined and fused filaments with spacing between the filaments for permeation by a coolant (e.g., air), and at least one conductor element positioned on and supported by the body element.

Adkins, the examiner's primary reference, pertains to an absorptive electromagnetic shielding for high speed computer applications. According to Adkins (col. 1, lines 48-51), a primary problem with prior art shielding is that it merely reflects, rather than absorbs, electromagnetic interference (EMI). Accordingly, a major objective of Adkins is the provision of shielding that absorbs EMI, rather than merely reflecting it (col. 2, lines 19-21). To this end, Adkins provides shielding components comprising a magnetically permeable mat bonded between either two conductive sheets 401, 402 (Figure 4B) or an insulator sheet 409 and a conductive sheet 410 (Figure 4D). These shielding components may then be positioned in direct contact with opposite sides of a printed circuit board 406 having electronic components 407 thereon (see Figure 4C) to form a structure like that illustrated in Figure 4A wherein the individual electronic components are shielded from both externally generated EMI and EMI arising from the components themselves (col. 3, lines 53-60; col. 4, lines 50-63). In addition, the upper shielding component is provided with a fluid intake conduit 403 and the conductive sheet 402 is provided with openings 405 such that cooling fluid (typically air) may be forced through the pores of the mat and the

sheet openings to cool the electronic components 407 mounted on the circuit board 406 (col. 4, lines 39-49).

In rejecting the appealed claims as being unpatentable over Atkins in view of AAPA, the examiner considers that the magnetically permeable mats of the shielding components of Adkins constitute body elements being made of a material with randomly intertwined filaments with spacing between the filaments for permeation by a coolant. The examiner concedes that these mats do not necessarily have fused filaments as claimed. The examiner turns to AAPA for a teaching of a material comprising randomly intertwined and fused filaments.

The portion of appellants' specification that constitutes AAPA reads as follows:

Referring to Figure 2 there is shown a microscopic view of a metal foam coolant permeable material. The material is a random distribution of intertwined and fused filaments of a non-corrosive metal. The material is available in the art in a wide range of specifiable densities at specifiable dimensions. One manufacturer is Hogen Industries, in Mentor, Ohio, U.S.A..

The greater the permeability and the less dense the material is the more it will deform under stress and the more coolant can pass through it transferring more heat. [Specification, page 9, lines 14-23.]

It is the examiner's position that AAPA demonstrates that the metal fused foam material used by appellants in the practice of their invention is well-known in the art. Based on this circumstance, the examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the mat material of Adkins to be made of fused metal foam as taught by AAPA because "the fused metal

foam was known and available as a permeable filamentary supporting material with varying densities” (answer, page 7).

The examiner expands on this position in the “Response to Argument” section of the answer, wherein the examiner states:

It is the opinion of the examiner that the structural limitations of the material as well as the motivation to combine with Adkins are disclosed in AAPA. The applicant has even stated in the arguments on page 9, lines 4-7 [of the Amendment filed December 6, 1999 (Paper No. 9)], that

“Hogan [sic, Hogen]^[2] teaches for further development purposes in a variety of applications, a new foam metal product of intertwined and fused filaments with spacing between fused filaments for permeation by a coolant; the foam metal product appears to have an adjustable density of filament structure; and those facts would not be an issue in this appeal”.

It is unclear how the applicant contends that it would not have been obvious to modify a reference to comprise the coolant permeable material as taught by Hogan [sic, Hogen] when he/she discloses that it is for the same purpose the applicant has stated on page 4, lines 9-11 [of Paper No. 9], which is to “provide coolant movement and direction, locally selectable physical protection and shock resistance and electrical shielding”. . . . Since no additional structure limitations defining a modification is claimed, the examiner submits that the claimed structure is well known in the art for cooling and the Applicant’s statements provide adequate proof that he/she knows the same. In light of this, the examiner willfully submits that the

²The reference here to “Hogan” is believed to be directed to a six page publication by Hogen Industries submitted by appellants in an Information Disclosure Statement that further describes the material mentioned on page 9 of the specification. A copy of this publication is attached to the first reply brief (Paper No. 20). The list of references relied upon on page 5 of the answer does not include the Hogen publication. The statement of the rejection on page 5 of the answer also does not mention the Hogen publication. Therefore, it is presumed that the Hogen publication forms no part of the rejection at issue that is before us for review.

modification of Adkins intertwined material to comprises [sic] fused material filaments would have been obvious.

The initial burden is on the examiner to present evidence from which is can be concluded that a *prima facie* case of obviousness has been established. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) and *In re Oetiker*, 977 F.2d 1443, 1444, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). In the present case, it is our view that the examiner has not met this initial burden. Our reasons follow.

Based upon the examiner's application of the cited prior art against the appealed claims, the burden is on the examiner to establish that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to utilize a material of the type discussed by appellants on page 9 of the specification as the mat material of Adkins. While we appreciate that in Adkins the mat 404 is porous so that cooling air passing through conduit 403 can flow to the electronic components 407 on the circuit board 406, this is not the primary function of the mat material. The main objective of Adkins, as noted above, is to provide shielding that will absorb electromagnetic interference of the type encountered in Adkins' application (e.g., high speed computer applications). As set forth in Adkins, the absorptive mat material

may comprise material such as steel wool, carbon-impregnated rubber, ferrite in a plastic stranded carrier, a combination of these or other similar lossy^[3] materials with the spacing between the members of the mat made

³The term "lossy" may mean "highly dissipative of electrical energy." Webster's
(continued...)

less than one one-hundredth of a wavelength at the highest frequency to be shielded, thus making the mat a poor radiator and consequently a good absorber of the frequencies below this highest frequency. Typically, the conductive sheet 201 is made extremely thin and the mat is fabricated from material which may be easily cut to aid in fitting this shielding about the contours of a particular circuit. . . .

In the operation of this shielding, the low frequency H-fields and the E-fields are absorbed by the mat. [Col. 3, lines 39-62.]

The examiner has pointed to nothing in the applied prior art (i.e., Adkins and AAPA), and we are aware of nothing therein, that would have motivated one of ordinary skill in the art at the time of appellants' invention to pick out the material mentioned in AAPA from all available prior art materials as being a suitable substitute for the EMI absorbent materials disclosed by Adkins. The circumstance that the material of AAPA is known to be porous and would have been recognized by one of ordinary skill in the art as allowing coolant such as air to pass therethrough does not, in our view, suffice in this regard. This is so because, although Adkins describes porosity for cooling purposes to be a desirable property of the mat material (see, for example, col. 4, lines 21-24), the main objective of Adkins is the provision of shielding that will absorb EMI (see col. 3, lines 30-36). Nothing in AAPA indicates that the material thereof has properties (e.g., appropriate

³(...continued)

spacing between filaments) that would render it a good absorber of EMI, which is the very essence of the Adkins invention.⁴

We have also considered the statement made by appellants on page 9, lines 4-7, of the Amendment filed December 6, 1999 (Paper No. 9) that the examiner has quoted on page 9 of the answer. Even when considered in a light most favorable to the examiner, we find no admission against interest there that would establish the obviousness of the subject matter of the appealed claims.

In light of the foregoing, we will not sustain the examiner's rejection of claims 22, 23, 26 and 28-35 as being unpatentable over Adkins in view of AAPA.

⁴Although not officially part of the evidentiary basis of the rejection before us in this appeal, we have also reviewed the Hogen publication referred to by both the examiner in the answer and appellants in the briefs and find nothing therein that makes up for this fundamental deficiency in the applied prior art.

Conclusion

The decision of the examiner finally rejecting the appealed claims is reversed.

REVERSED

NEAL E. ABRAMS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHARLES E. FRANKFORT)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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LAWRENCE J. STAAB)	
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