

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TORAY INDUSTRIES INC.

Appeal No. 97-4036
Control No. 90/004,167¹

ON BRIEF

Before STAAB, McQUADE and CRAWFORD, Administrative Patent Judges.
McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1 and 3 through 7, all of the claims pending in this reexamination proceeding involving U.S. Patent No. 4,785,558.²

¹Request, filed March 5, 1996, for the reexamination of U.S. Patent No. 4,785,558, issued November 22, 1988, based on Application 07/076,443, filed July 22, 1987.

²Claim 1 has been amended subsequent to final rejection.

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The invention relates to an athletic shoe. Claim 1 is illustrative and reads as follows:

1. An athletic shoe comprising a sole and a shoe upper attached to said sole, where said shoe upper is comprised of an outer knit fabric layer, an inner knit fabric layer provided opposite to said outer knit fabric layer through a space having a thickness of 1 to 10 mm, and a crossing thread which is interknitted to be bound into said outer and inner knit fabric layers and crosses said space, said crossing thread being provided at a density of 500 to 4500 threads per square inch and having a single yarn fineness of 3 to 50 denier.

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

Fischer	4,601,940	Jul. 22, 1986
Kuwahara (Japanese Patent Document) ³	52-32440	Mar. 7, 1977
Mullsjö et al. (Mullsjö) (Swedish Patent Document) ³	77135572	Aug. 6, 1979
Sada (Japanese Patent Document) ³	59-109792	Jul. 24, 1984

Claims 1 and 3 through 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuwahara in view of Sada, Mullsjö and Fischer.

Reference is made to the appellant's brief (Paper No. 13) and to the examiner's answer (Paper No. 14) for the respective positions of the appellant and the examiner with regard to the

³The request for reexamination (Paper No. 1) includes an English language translation of this reference.

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propriety of this rejection. Since the appellant has not challenged with any reasonable specificity the rejection of dependent claims 3 through 7, these claims shall stand or fall with independent claim 1 (see In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987)).

Kuwahara discloses a shoe having an upper "made of double-woven knitted cloth A with chemical fiber 1 designed to be exposed on the surface side and a natural fiber 2 on the rear side" (translation, page 1). As illustrated in Figure 3, this double-woven knitted cloth includes spaced apart outer and inner knit fabric layers and a thread interknitted with both layers and crossing the space therebetween. It is not disputed that the Kuwahara shoe meets all of the limitations in claim 1 except for those requiring the space between the fabric layers to have a thickness of "1 to 10 mm," and the crossing thread to have a density of "500 to 4500 threads per square inch" and a single yarn fineness of "3 to 50 denier."

Sada discloses a three-layer knitted cloth for use in a training or sweat suit. The cloth is designed to dry quickly and to provide excellent heat insulation. As shown in Figure 1, it consists of spaced apart outer and inner layers and an intermediate layer interknitted with the inner and outer layers

and crossing the space therebetween. In one embodiment, the

intermediate layer is composed of 20 denier mono filament (see page 7 in the translation]. Sada teaches that

[t]he fiber composing the intermediate layer 2 is not particularly specified, but hydroscopic polyester fibers may be used, and processed yarns, etc. of regular synthetic fibers maybe [sic] used, but it is desirable to use long fibers.

. . . [T]he use of hydroscopic polyester fibers results in quick drying, and in addition, because the intermediate layer 2 can maintain high air content, good heat insulation is ensured and it can be useful for preventing rapid cooling of perspiring muscles [translation, pages 6 and 7].

Mullsjö discloses a double-knit warp-knitted fabric for use as an insert sole in a rubber boot or other footwear. The fabric is designed to have a number of characteristics which are desirable for such use including the capacity to readily pass moisture and heat therethrough and to conform to a wearer's foot in an elastic manner (see pages 3 and 4 in the translation). As shown in Figure 1, the fabric may consist of spaced apart outer and inner layers and a thread interknitted with both layers and crossing the space therebetween. Mullsjö teaches the distance between the outer and inner layers is 8 to 12 mm., and preferably

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approximately 10 mm. (see page 3 in the translation).

Fischer discloses a knit fabric suitable for use in padded brassieres. The fabric consists of spaced apart outer and inner layers and a thread interknitted with both layers and crossing the space therebetween (see, for example, column 1, line 65 through column 2, line 2; and column 5, lines 46 through 52). The crossing or filler thread is designed to provide an elastic, absorbent and air-permeable filler material which allows the brassiere to breath and elastically resist crushing. Fischer teaches that these characteristics depend, at least in part, on the length, density and size (denier) of the crossing or filling thread (see column 3, lines 4 through 18; and column 4, lines 21 through 55).

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).

The collective disclosures of Sada, Mullsjo and Fischer indicate that for cloths or fabrics of the type disclosed by

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Kuwahara, the spacing thickness between the outer and inner layers and the density and fineness of the crossing threads are art recognized result effective variables with respect to various comfort and/or wearability characteristics of the cloth or fabric. This being the case, the applied prior art would have suggested the kind of experimentation necessary to provide Kuwahara's shoe upper with a layer spacing, crossing thread density and crossing thread fineness falling within the rather broad ranges specified in claim 1 in order to attain desired comfort and/or wearability characteristics. In this regard, the discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). Also see In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, the combined teachings of Kuwahara, Sada, Mullsjo and Fischer would have suggested to those of ordinary skill in the art the shoe set forth in appealed claim 1.

In essence, the appellant's position to the contrary (see pages 6 through 10 in the brief) is predicated on the argument that the secondary references to Sada, Mullsjo and Fischer would not have motivated the artisan to provide Kuwahara's shoe upper fabric with a layer spacing, crossing thread density and crossing

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thread fineness meeting the limitations in claim 1 because the fabrics taught by these secondary references are not disclosed for use in a shoe upper. This line of argument is not persuasive, however, given the fundamental structural similarities between the prior art fabrics and the fact that each is disclosed for use in wearing apparel, i.e., a shoe upper (Kawahara), a sweat suit (Sada), an insert sole (Mullsjö), and a brassiere (Fischer). Under these circumstances, one of ordinary skill in the art certainly would have appreciated the teachings of Sada, Mullsjö and Fischer to be applicable to the shoe upper of Kawahara.

In light of the foregoing, the differences between the subject matter set forth in claim 1 and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention to a person having ordinary skill in the art. Accordingly, we shall sustain the standing 35 U.S.C. § 103(a) rejection of claim 1 and of claims 3 through 7 which stand or fall therewith.

The decision of the examiner is affirmed.

Further proceedings in this case may be taken in accordance with 35 U.S.C. § 141 to § 145 and § 306, and 37 CFR § 1.301 to § 1.304. Note also 37 CFR § 1.197(b). If the patent owner fails

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to continue prosecution, the reexamination proceeding will be

terminated, and a certificate under 35 U.S.C. § 307 and
37 CFR § 1.570 will be issued canceling the patent claims, the
rejection of which has been affirmed.

AFFIRMED

LAWRENCE J. STAAB)	
Administrative Patent Judge)	
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JOHN P. MCQUADE)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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)	
MURRIEL E. CRAWFORD)	
Administrative Patent Judge)	

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Armstrong Nikaido Marmelstein & Kubovcik
1725 K Street NW Suite 912
Washington, DC 20006

Thomas L. Adams
BEHR & ADAMS
10 Park Place
Morristown, NJ 07960