

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MOSHE ROCK, EDWARD P. DIONNE,
BHUPESH DUA, CHARLES HARYSLAK,
WILLIAM K. LIE, and
DOUGLAS LUMB

Appeal 2007-3555
Application 09/982,720
Technology Center 1700

Decided: November 21, 2007

Before CHUNG K. PAK, PETER F. KRATZ, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

1 This is an appeal from the final rejection of claims 1-27, 30, and 37, the only claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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

1. A double-face velour fabric article comprises a knitted fabric body having a technical face, formed by a filament stitch yarn, and a technical back, formed by a filament loop yarn, said filament stitch yarn comprising heat sensitive material, said knitted fabric body having a velour surface formed at both said technical back and said technical face, and said heat sensitive material of said filament stitch yarn responding to application of heat during processing to increase tortuosity of air flow paths through the knitted fabric body formed by interstices defined among the filament stitch yarn and the filament loop yarn of the knitted fabric body with a result of said knitted fabric body having permeability of about 110 ft³/ft²/min or less under a pressure difference of ½ inch of water across the knitted fabric body.

The Examiner relies on the following prior art references to show unpatentability:

Ploch ¹	US 3,837,943	Sep. 24, 1974
Lombardi	US 4,103,518	Aug. 1, 1978
Callaway	US 5,520,022	May 28, 1996
Richards	US 5,557,950	Sep. 24, 1996
Wood	US 2002/0124365 A1	Sep. 12, 2002

The Examiner made the following rejections:

1. Claims 1-9, 16-18, 25, 30, and 37 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch.

2. Claims 10-13 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch, and further in view of Richards.

¹The Examiner's Answer also makes reference to Ploch, US 3,168,883 (Feb. 9, 1965). However, the Examiner has not applied this patent in rejecting the claims. Accordingly, all references to "Ploch" in this Decision are to US 3,837,943.

3. Claim 24 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch, and further in view of Callaway.

4. Claims 14 and 15 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch and Richards, and further in view of Wood.

The Examiner finds that Lombardi discloses the invention as claimed in claim 1 with the exception of using a heat sensitive material to form the stitch yarn. (Answer 3). The Examiner relies on Ploch for a teaching of using heat sensitive fibers as the stitch yarn for binding rows of pile yarns to a fibrous base fabric. (Answer 3). The Examiner contends that it would have been obvious to one having ordinary skill in the art at the time of the invention to have used “thermally sensitive filaments as taught by Ploch et al. as the stitching, or ground, yarn in the fabric taught by Lombardi et al. to help increase the bond between the ground fabric and the pile yarn and produce a stable and wear resistant compound fabric with increased bulk.” (Answer 4-5).

Appellants do not dispute the Examiner’s finding that Lombardi discloses a double face knitted velour fabric having a structure similar to Appellants’ claimed fabric. (Br. 3). Rather, Appellants contend that the Examiner has relied on improper hindsight reasoning in concluding that one of ordinary skill in the art would have been motivated to use the heat sensitive filaments of Ploch to form one of Lombardi’s fabric faces. (Br. 5-6).

Therefore, the issue raised in this appeal is: Has the Examiner identified a proper teaching, suggestion, or motivation for modifying Lombardi to achieve the claimed invention? We find that the facts and reasons set forth by the Examiner in the Answer provide a reasonable basis

to conclude that one of ordinary skill in the art would have been motivated to combine the references in the manner claimed. We are not persuaded by Appellants' arguments for the reasons discussed in greater detail below.

The following enumerated findings of fact are relevant to our consideration of the issue in this appeal:

- 1) Lombardi discloses a circular knitting apparatus for forming terry loops on the technical front face of the fabric alone, or in combination with terry loops on the technical back face of the fabric. (Col. 1, ll. 10-16). When sheared, this fabric forms the basis for knitted velour. (Col. 1, ll. 25-27).
- 2) According to Lombardi, terry loops can be incorporated in a fabric in a non-knit manner, i.e., "they do not constitute knitted loops in the ground construction, but rather are tied into the base fabric in a loosely-held manner." (Col. 1, ll. 34-39). Lombardi states that a drawback of this structure is that "[a]t least portions of the terry loops can be pulled free from the base fabric which is undesirable. (Col. 1, ll. 48-50).
- 3) Lombardi states that the disclosed invention "contemplates the formation of terry loops which are knitted jointly with a ground yarn into the base or ground fabric and thus securely anchored in the knitted construction." (Col. 1, ll. 16-19).
- 4) According to Lombardi, known machines and methods for producing double-faced terry loop fabric in which the front and back loop yarns are inter-knitted with a ground yarn suffer from various drawbacks (col. 1, l. 63 – col. 2, l. 2) which include problems with the yarn severing (col. 2, ll. 15-58).

5) Ploch discloses a method of producing compound fabrics in which overlying yarns or fleece are attached to a pre-formed base fabric. (Col. 1, ll. 3-7). According to Ploch, a problem with prior art methods of producing these fabrics was that the thread used to attach the overlying yarns would break due to high tension or damage by the stitching-knitting machine causing disintegration of the compound fabric. (Col. 1, ll. 29-33).

6) To overcome this problem, Ploch utilizes stitching threads comprising filaments having different thermal characteristics. (Col. 1, ll. 54-57).

According to Ploch's method, after the fibrous material is sewn onto the base fabric, "the fabric is subjected to a heat treatment to a temperature within the softening range of the component having the lower softening range . . . so that the component . . . becomes bonded to the base fabric and to the fibrous material sewn onto the base fabric as well as bonding the thread to itself wherever contact is made between different parts of the thread." (Col. 1, l. 60-col. 2, l. 1).

Appellants contend that "the motives to combine [the applied prior art] advanced by the Examiner are not supported by the teachings of the references." (Br. 5). Appellants argue that Ploch uses heat sensitive filaments to address problems which arise in connection with methods of incorporating yarn into a ground cloth in a non-knit manner. (Br. 5). Appellants maintain that Lombardi's fabric is formed by knitting and, therefore, does not suffer from the same problems addressed by Ploch's filaments. (Br. 5). Appellants point out, e.g., that because Lombardi's terry loops are already securely anchored to the ground fabric by the knitted construction, Lombardi would have no motivation to use thermally sensitive filaments to secure the terry loops. (Br. 5).

“As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor.” *In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992). *See Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323 (Fed. Cir. 2005) (“One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings.”). In this case, the Examiner determined that one of ordinary skill in the art was aware that although knitted pile fabrics do have improved bonding between the pile and base fabric, they are still susceptible to unraveling. (Answer 8). This determination is clearly based on the applied prior art disclosures. *See* Findings of Fact 4 and 5. The Examiner then reasonably concluded that one of ordinary skill in the art would have been motivated use a heat sensitive material as the ground thread in Lombardi’s fabric to improve durability and wear resistance (Answer 8), i.e., reduce the chance of unraveling. *See KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739-40 (2007) (In an obviousness determination, the question to be asked is “whether the improvement is more than the predictable use of prior art elements according to their established functions.”).

Appellants also disagree with the Examiner’s determination that one of ordinary skill in the art would have been motivated to use heat sensitive material to form one of the faces of Lombardi’s fabric, since Ploch only discloses the use of the thermally sensitive filaments as stitching to attach pile forming yarns to pre-formed ground fabric. (Reply 3). In our view, the Examiner has provided a well-reasoned explanation for this determination (*see* Answer 8-9). As explained by the Supreme Court in *KSR Int’l Co. v.*

Teleflex Inc.: “A person of ordinary skill is also a person of ordinary creativity, not an automaton.” 127 S. Ct. at 1742. Thus, while “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does . . . the analysis need not seek out precise teachings [in the prior art] directed to the specific subject matter of the challenged claim.” *Id.* at 1741. See *KSR*, 127 S. Ct. at 1741 (An obviousness analysis “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”).

Appellants contend that “[n]either Lombardi, nor Ploch discloses, suggests, or provides any motivation of using a heat sensitive material to form a face of a knitted fabric or to increase tortuosity of air flow paths through a knitted fabric body.” (Reply 3). Appellants’ argument is not persuasive because it fails to address the Examiner’s finding that the proposed prior art combination would result in a fabric possessing substantially the same or similar properties as the claimed fabric. (Answer 5). Where, as here, the Examiner demonstrates that a claimed product appears to be substantially identical to a product disclosed by the prior art, the burden is on the Appellants to prove that the product of the prior art does not necessarily or inherently possess characteristics or properties attributed to the claimed product. *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990); *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977).

In response to the rejection of claims 10-13 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch, and further in view of Richards, Appellants argue that there is no motivation to combine Richards and Ploch because use of an elastic yarn as disclosed in Richards is

inconsistent with Ploch's objective of tight seams. (Reply 5). This argument is not persuasive since the Examiner's rejection is based on what the combined teachings of Lombardi, Ploch, and Richards as a whole would have suggested to one of ordinary skill in the art. (Answer 5-6). *See KSR*, 127 S. Ct. at 1741 (An obviousness analysis "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ."). Moreover, we note that the claims are not limited to a specific degree of elasticity. Thus, Appellants' argument also lacks persuasive merit because Appellants have not shown that even a minor amount of elasticity would be contraindicated by Ploch.

With respect to the remaining grounds of rejection, Appellants' arguments are limited to their contention that neither Callaway, Richards, or Wood provide motivation to use a heat sensitive filament stitch yarn in Lombardi's fabric. (Reply 5-6). These arguments are unpersuasive in view of our finding that the Examiner properly established motivation to modify Lombardi's fabric to include a filament stitch yarn comprising heat sensitive material based on Ploch.

In sum, we find that the facts and reasons relied on by the Examiner provide a reasonable basis to conclude that appealed claims 1-27, 30, and 37 are prima facie obvious within the meaning of 35 U.S.C. § 103.

ORDER

The Examiner's decision rejecting claims 1-9, 16-18, 25, 30, and 37 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch is affirmed.

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The Examiner's decision rejecting claim 24 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch, and further in view of Callaway is affirmed.

The Examiner's decision rejecting claims 14 and 15 under 35 U.S.C. § 103 as unpatentable over Lombardi in view of Ploch and Richards, and further in view of Wood is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(i)(iv).

AFFIRMED

tf/lr

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