

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HOWARD M. ZINS
and DAVID C. HOLLAND

Appeal No. 1996-3195
Application No. 08/228,086¹

ON BRIEF

Before JOHN D. SMITH, WARREN, and KRATZ, Administrative Patent Judges.

KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 27, which are all of the claims pending in this application.

BACKGROUND

The appellants' invention relates to an ultrasonically bonded seam that is impervious to liquids, method of

¹ Application for patent filed April 15, 1994.

preparation thereof, and a fabric that is impervious to liquids. The seam comprises a laminate sheet of a polyester fabric with a polyurethane coating on one side thereof. An understanding of the invention can be derived from a reading of exemplary claims 1, 8, 15, and 27 which are reproduced below.

1. A stitchless seam that is impervious to liquids, the seam comprising:

a laminate sheet constructed solely of a polyester fabric on one side of the sheet and a polyurethane coating over the polyester fabric on a second side of the sheet, the sheet having at least one pair of opposite edges;

the sheet being formed in a tube configuration with the polyester fabric extending around an interior of the tube and the polyurethane coating extending over an exterior of the tube;

the pair of opposite edges being folded back into the tube interior where the edges are aligned adjacent each other in the interior of the tube and the polyurethane coating on each of the opposite edges being in mutual contact, and wherein the polyurethane coating on each of the opposite edges has been ultrasonically welded securing the edges together and forming a seam along the tube of laminate sheet that both joins the opposite edges of the sheet together and seals the join of the edges solely by the ultrasonically welded polyurethane coating.

8. A method of forming a stitchless seam that is impervious to liquids, the method comprising:

constructing a laminate sheet from a piece of polyester fabric, the fabric having a configuration with at least one pair of opposite edges, and covering over one side of the

piece of fabric with a polyurethane coating thereby constructing the laminate sheet solely of the polyester fabric on one side of the sheet and solely of the polyurethane coating on a second side of the sheet;

forming the sheet in a tube configuration so that the polyester fabric extends around an interior of the tube and the polyurethane coating extends over an exterior of the tube;

folding the opposite edges of the polyester fabric back so that the polyester fabric at the opposite edges is folded back over itself and so that the pair of edges are aligned and extending into the tube interior and the polyurethane coating on each of the edges is in mutual contact; and

subjecting the contacting polyurethane coating of each of the opposite edges to ultrasonic energy thereby securing the opposite edges together and forming a seam along the laminate tube that both securely joins the opposite edges of the sheet together and seals the join of the edges solely by the ultrasonically welded polyurethane coating in mutual contact at the opposite edges.

15. A stitchless seam that is impervious to liquid, the seam comprising:

a pair of adjacent pieces of a polyester fabric, each piece of fabric having opposite interior and exterior surfaces and each piece of fabric having an edge that is folded back so that the edge extends out from the interior surface of the piece of fabric;

a polyurethane coating on the exterior surface of each piece of fabric, the polyurethane coating on the exterior surfaces of the folded back edges being in mutual contact, and the mutually contacting polyurethane coating being ultrasonically welded thereby securing the folded back edges together forming a seam in the pieces of fabric that both joins the edges of the two pieces of fabric together and seals the join of the edges solely by the ultrasonically welded polyurethane coating.

27. An autoclavable fabric that is impervious to liquids, the fabric comprising:

a sheet of polyester fabric;

a layer of thermoplastic polyurethane; and

a layer of thermosetting polyurethane, the thermosetting polyurethane layer being substantially less tacky than the thermoplastic polyurethane layer when autoclaved, the thermoplastic polyurethane layer being positioned between the fabric and the thermosetting polyurethane layer, thereby encapsulating the thermoplastic polyurethane layer and preventing the thermoplastic polyurethane layer from sticking to itself during autoclaving.

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

Pounder et al. (Pounder) 09, 1969	3,483,073	Dec.
Kerr et al. (Kerr) 1994	5,298,303	Mar. 29,

Claims 1-27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kerr in view of Pounder.

OPINION

Upon careful consideration of the opposing arguments presented on appeal, we concur with appellants that the applied prior art fails to establish a *prima facie* case of obviousness of the claimed subject matter. Accordingly, we will not sustain the examiner's rejection.

In order for a *prima facie* case of obviousness of appellants' claimed invention to be established, the prior art must be such that it would have provided one of ordinary skill in the art with both a suggestion to carry out appellants' claimed process and a reasonable expectation of success in doing so. See *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). "Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *Id.* The mere possibility that the prior art could be modified such that appellants' process is carried out is not a sufficient basis for a *prima facie* case of obviousness. See *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); *In re Ochiai*, 71 F.3d 1565, 1570, 37 USPQ2d 1127, 1131 (Fed. Cir. 1995).

A fundamental flaw in the stated rejection is that the examiner has not convincingly explained how one of ordinary skill in the art would have arrived at the claimed invention from the teachings of the references. In this regard, claims 1 and 8 and the claims depending therefrom require a fabric seam or method of forming the seam wherein an ultrasonic weld

is applied to inwardly folded back opposite edges of a tube-shaped, one-sided polyurethane coated polyester fabric sheet with the polyurethane coating of each edge being in mutual contact as the sole mechanism for securing the opposite edges together. Claim 15 and the claims depending therefrom require a fabric seam wherein an ultrasonic weld is applied to folded back edges of adjacent pieces of one-sided polyurethane coated polyester fabric sheet material with the polyurethane coatings in mutual contact as the sole mechanism for securing the pieces together.

Kerr discloses the multi-layer coating of a fabric substrate (figure 1) to provide a fabric structure useful in a fuel cell or rotary flap peening device. Kerr teaches that a variety of substrate materials may be used including polyester fibers and the coatings may comprise various polymers including polyurethanes (columns 2-10). Kerr does not disclose seam formation including formation of an ultrasonically welded seam. Pounder discloses joined sheets of cross-linked polyurethanes and/or polyurethane coated fabrics using ultrasonically formed seams. Pounder teaches that the separate sheets to be joined are assembled in abutting or

overlapping relationship. Pounder does not teach joining folded back edges as claimed. According to the examiner, it would have been obvious to one of ordinary skill in the art to fold the composite fabrics as claimed so that the polyurethane layers may contact each other (answer, page 5). However, the examiner has not pointed to any prior art teaching or convincing line of reasoning to substantiate this proposition. In this regard, even with regard to claim 15, we note that Pounder clearly teaches a seam for joining separate sheets that does not involve folding and which differs from that claimed herein. Accordingly, even if we agreed that the teachings of Kerr and Pounder are combinable as urged by the examiner, the examiner has not adequately explained where the motivation or suggestion for modifying Kerr's fabric structure or method of coating a fabric substrate to employ an ultrasonic weld to folded back edges of polyurethane coated polyester fabric sheet(s) is found in the combined applied references' teachings.

Likewise, the examiner has not explained how the combined references' teachings would have suggested the specific positioning of a polyester fabric, thermoplastic polyurethane

coating, and thermosetting polyurethane coating as recited in claim 27. From our perspective, the assertions of the examiner regarding the fabric structure arrangement(s) that would have been obvious from the teachings of Kerr (answer, pages 4 and 5) appear to be based on conjecture. In this regard, the examiner has not specifically identified which portions of the disclosure of Kerr would have rendered the specifically claimed fabric arrangement of claim 27 obvious to one of ordinary skill in the art.

The determination of obviousness must be based on facts, and not on unsupported generalities. See *In re Freed*, 425 F.2d 785, 787, 165 USPQ 570, 571 (CCPA 1970). Moreover, there must be some basis in the references for concluding that the claimed subject matter would have been obvious. Simplicity and hindsight are not proper criteria for resolving the issue of obviousness. See *In re Horn*, 203 USPQ 969, 971 (CCPA 1979). In our view, the motivation for the examiner's stated rejection appears to come solely from the description of appellants' invention in their specification. Thus, the record indicates that the examiner used impermissible hindsight when rejecting the claims. See *W.L. Gore &*

Associates v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984); *In re Rothermel*, 276 F.2d 393, 396, 125 USPQ 328, 331 (CCPA 1960). Accordingly, we reverse the examiner's rejection.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-27 under 35 U.S.C. § 103 as being unpatentable over Kerr in view of Pounder is reversed.

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

REVERSED

JOHN D. SMITH)	
Administrative Patent Judge)	
)	
)	
)	
)	BOARD OF PATENT
CHARLES F. WARREN)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
PETER F. KRATZ)	
Administrative Patent Judge)	

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HOWELL & HAFERKAMP, L.C.
7733 Forsyth Blvd., Suite 1400
St. Louis, MO 63105

APPEAL NO. - 1996-3193
APPLICATION NO. 08/228,086

APJ KRATZ

APJ WARREN

APJ JOHN SMITH

DECISION: **REVERSED**

Prepared By: TINA

DRAFT TYPED: 12 Oct 00

FINAL TYPED: