

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAJID H. HINDI and ALLISON FLYNN

Appeal No. 2003-1718
Application No. 09/344,295

ON BRIEF

Before GARRIS, DELMENDO, and POTEATE, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2003) from the examiner's final rejection of claims 1, 3 through 8, and 10. Claims 13 through 22, which are the only other pending claims, stand withdrawn from further consideration pursuant to 37 CFR § 1.142(b) (2003) (effective Dec. 22, 1959).

The subject matter on appeal relates to a recyclable, reinforced roofing membrane for use in single ply roofing systems. According to the appellants (specification, page 1,

lines 15-21), prior art single ply roofing membrane systems typically include two propylene-ethylene-copolymer sheets bonded to each other and a woven polyester reinforcing mesh or scrim located intermediate the propylene-ethylene-copolymer sheets. The appellants explain, however, that because polyester meshes are hydrophilic and are not chemically compatible with propylene-ethylene-copolymer sheets, their use in roofing membranes has certain drawbacks (wicking of water into the membranes along unsealed edges of the membranes and inability to recycle scrap membrane). (Id. at page 1, line 31 to page 2, line 10.) The appellants state that "the present invention may reduce the wicking problem associated with polyester scrim reinforced membranes and can be recycled both during the production process, if the membrane is out of specification, and after the membrane's useful service life in the field." (Id. at page 2, lines 27-31.) Further details of this appealed subject matter are recited in representative claim 1, the only independent claim on appeal, reproduced below:

1. A recyclable, reinforced roofing membrane for use in single ply roofing systems, comprising:
first and second propylene-ethylene-copolymer sheets wherein the propylene-ethylene-copolymer of the sheets is polymerized from a polypropylene and ethylene-monomer blend comprising about 30% to about 70% by weight polypropylene and about 30% to about 70% by weight ethylene-monomer; and a hydrophobic polypropylene reinforcing mesh intermediate the first

and second propylene-ethylene-copolymer sheets and bonded to the first and second propylene-ethylene-copolymer sheets for reinforcing the membrane; the polypropylene reinforcing mesh being chemically compatible with the first and second propylene-ethylene-copolymer sheets for permitting scrap produced in a process of manufacturing of the membrane to be recycled back into the process.

The examiner relies on the following prior art references as evidence of unpatentability:

Paeglis et al. (Paeglis)	4,589,804	May 20, 1986
Wynne	5,891,541	Apr. 6, 1999 (filed Jun. 18, 1996)

Claims 1, 3 through 8, and 10 on appeal stand rejected under 35 U.S.C. § 103(a) (2003) as unpatentable over Wynne in view of Paeglis. (Examiner's answer mailed Dec. 17, 2002, paper 22, pages 3-5.)

We reverse.

The examiner states: "Wynne discloses the claimed invention except for the teaching that the scrim is made of polypropylene and the specific ratio of ethylene to propylene in the copolymer." (Answer, page 3.) The examiner then continues (id. at pages 3-4):

It should be noted that increasing the amounts of ethylene and polypropylene are result effective variables. For example, increasing the amount of polypropylene directly affects the hydrophobic property of the composite material. Furthermore, given the lack of specific teaching in Wynne for the

proportions of components of the polymer and the very large range instantly claimed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the copolymer of Wynne contain about 30-70% by weight polypropylene and about 30-70% by weight of ethylene-monomer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, it would have been obvious to optimize the amount of polypropylene and ethylene-monomer motivated by the desire to obtain a composite with superior reinforcing stability.

Regarding the claim element "hydrophobic polypropylene reinforcing mesh," the examiner relies on the teaching of a polypropylene scrim in Paeglis (column 10, lines 18-31) and holds that "[i]t would have been obvious to have used Paeglis' woven scrim as the scrim layer in Wynne motivated by the desire to obtain a reinforced composite with some degree of flexibility." (Id. at page 4.)

The appellants, on the other hand, argue that Wynne "neither discloses nor suggests a blend made up of about 30% to about 70% by weight polypropylene and about 30% to about 70% by weight ethylene-monomer, let alone sheets made from such a blend that are reinforced by a hydrophobic polypropylene reinforcing mesh." (Appeal brief filed Oct. 4, 2002, paper 21, page 6.) As to Paeglis, the appellants point out that "Paeglis [] does not teach using a hydrophobic polyethylene [sic, polypropylene]

reinforcing mesh in combination with propylene-ethylene-copolymer sheets..." (Id.)

We must agree with the appellants that the examiner's rejection is not well founded. Wynne describes reinforced composite materials useful in a wide variety of industrial, transportation, and engineering applications (e.g., landfills). (Column 1, lines 5-20.) Wynne teaches that the composite may be formed by overlapping and coupling a first sheet of reinforced composite material 81 and a second sheet of reinforced composite material 82 to form a seam 80, wherein each sheet of reinforced composite material 81 and 82 includes at least two polymer film layers between which is coupled a fabric layer or scrim with a plurality of horizontal reinforcing fibers 84 and 85 and a plurality of longitudinal reinforcing fibers 90 and 91. (Column 5, lines 43; Figures 1, 6A, 6B, 7A, and 7B.) According to Wynne (column 3, lines 18-27; column 13, lines 16-21), the polymer layers may be "selected from polypropylene, ethylene acrylic acid [sic], polyvinyl chloride, ethylene-vinyl acetate copolymer, ethylene-propylene-diene [sic], high density polyethylene, low density polyethylene, linear low density polyethylene, or mixtures thereof" and the fabric layer or scrim "can be made from synthetic fiber forming polymers, naturally occurring fibers, and mixtures thereof" (e.g., polyester).

Thus, Wynne's composite material differs from the invention recited in appealed claim 1 in at least two significant ways. First, Wynne does not disclose the use of a "hydrophobic polypropylene reinforcing mesh." Second, contrary to the examiner's unsupported allegation, Wynne does not disclose propylene-ethylene copolymer sheets "polymerized from a polypropylene and ethylene-monomer blend" (emphasis added), much less the here recited propylene-ethylene copolymer sheets having the specified polypropylene and ethylene monomer weight percents.

Paeglis, like Wynne, discloses liners. (Column 3, lines 15-18.) While Paeglis does disclose the use of polypropylene scrim as a reinforcement (column 10, lines 15-31), the polymer sheets used in Paeglis bear no resemblance to the polymer sheets of Wynne, much less the propylene-ethylene copolymer sheets recited in appealed claim 1. Specifically, the polymer sheets described in Paeglis are said to include neutralized acid group containing elastomeric polymers such as neutralized acid group containing EPDM elastomer or butyl rubber. (Column 3, line 64 to column 4, line 44.)

Under these circumstances, we cannot subscribe to the examiner's argument that one of ordinary skill in the art would have been led to combine the teachings of Wynne and Paeglis.

Appeal No. 2003-1718
Application No. 09/344,295

But even if the references could be combined in the manner as proposed by the examiner, the combination would not result in the appellants' claimed invention because neither Wynne nor Paeglis provides any motivation, teaching, or suggestion to use the recited propylene-ethylene copolymer sheets polymerized from specific amounts of polypropylene and ethylene monomer.

For these reasons, we reverse the examiner's rejection under 35 U.S.C. § 103(a) of appealed claims 1, 3 through 8, and 10.

Appeal No. 2003-1718
Application No. 09/344,295

The decision of the examiner is reversed.

REVERSED

Bradley R. Garris)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
Romulo H. Delmendo)	
Administrative Patent Judge)	APPEALS AND
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Linda R. Poteate)	
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Appeal No. 2003-1718
Application No. 09/344,295

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