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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHN E. HAYES,
ALBERT MAGNOTTA, and NIGEL BARКСBY

Appeal 2011-006114
Application 11/546,639
Technology Center 1700

Before PETER F. KRATZ, CATHERINE Q. TIMM, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

KRATZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-15. We have jurisdiction pursuant to 35 U.S.C. § 6.

Appellants' claimed invention is directed to a reaction system for preparing a fiber reinforced composite and a method of preparing same.

Claims 1 and 8 are illustrative and reproduced below:

1. A reaction system for the preparation of a fiber reinforced composite by a pultrusion process comprising:

continuous fiber reinforcing material; and

a polyurethane formulation comprising,

a polyisocyanate component containing at least one polyisocyanate, and

an isocyanate-reactive component containing at least one double metal cyanide ("DMC")-catalyzed polyol

which polyurethane formulation undergoes essentially no reaction while in an impregnation die.

8. A pultrusion process for preparing a fiber reinforced polyurethane composite, the process comprising:

continuously pulling a roving or tow of continuous fiber reinforcing material successively through an impregnation chamber and a die;

continuously feeding a polyurethane formulation comprising a polyisocyanate component containing at least one polyisocyanate and an isocyanate-reactive component containing at least one double metal cyanide

("DMC")-catalyzed polyol to the impregnation chamber;

contacting the fiber reinforcing material with the formulation in the impregnation chamber such that substantially complete wetting of the material by the formulation occurs;

directing the fiber reinforcing material through a die heated to reaction temperature to form a solid composite;
and

drawing the composite from the die,

wherein conditions in the impregnation chamber are such that substantially no polymerization takes place.

The Examiner relies on the following prior art references as evidence in rejecting the appealed claims:

Ishida	US 5,294,461	Mar. 15, 1994
Le-Khac	US 5,714,428	Feb. 3, 1998

Claims 1-7 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellant regards as the invention. Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of Le-Khac.

We affirm the indefiniteness rejection under the second paragraph of 35 U.S.C. § 112 for substantially the reasons stated by the Examiner. As for the obviousness rejections, we adopt the Examiner's fact finding as our own and we affirm for substantially the reasons set forth by the Examiner in the Answer.

Rejection under 35 U.S.C. § 112, second paragraph

“[T]he indefiniteness inquiry asks whether the claims ‘circumscribe a particular area with a reasonable degree of precision and particularity.’”

Marley Mouldings Ltd. v. Mikron Indus. Inc., 417 F.3d 1356, 1359 (Fed. Cir. 2005), quoting *In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971).

Here, we determine that the Examiner has carried the burden to establish that the contested clause set forth in independent claim 1 renders the rejected claims indefinite. In this regard, the inclusion of the “essentially no reaction” limitation of the polyurethane formulation in the reaction system (composition) of claim 1 conflates a process with the claimed reaction system (composition) combination, particularly given that process reaction conditions, such as temperature, significantly affects the reaction of the polyurethane formulation, as indicated by the Examiner (Ans. 8 and 9; see Spec. p. 6, l. 27- p. 7, l. 7). As such, we agree with the Examiner that the affected rejected claims run afoul of the requirements of the second paragraph of 35 U.S.C. § 112.

It follows that we affirm the Examiner’s rejection of claims 1-7 under 35 U.S.C. § 112, second paragraph.

Obviousness Rejections

We focus on independent claims 1 and 8 as Appellants argue the rejected claims together as a group for each of the separately stated obviousness rejections.¹ We agree with the Examiner that it would have been obvious for one of ordinary skill in the art to employ the polyol of Le-Khac as at least a part of the isocyanate reactive component of Ishida based on the combined teachings of the references and for reasons expressed by the Examiner and notwithstanding Appellants’ argument to the contrary

¹ While we have found product claims 1-7 indefinite, we conditionally interpret these claims as relatively broad so as to encompass any polyurethane formulation as otherwise specified in argued claim 1 that is capable of undergoing essentially no reaction under any process conditions reasonably applicable to a poltrusion system impregnation die.

(Ans. 4-7). In this regard, Appellants' arguments are amply refuted as being unavailing for reasons expressed by the Examiner in rebuttal (Ans. 9-11).

We emphasize that Appellants seem to have conflated disclosure concerning the reaction die 17 of Ishida with their impregnation die/chamber (Reply Br. 1; claims 1 and 8). In this regard, chamber 28 of Ishida corresponds to Appellants' injection die or chamber of claims 1 and 8 whereas die 17 of Ishida corresponds to the die heated to a reaction temperature of Appellants' claim 8. Ishida teaches that reactions in the impregnation chamber 28 are minimized or avoided (col. 4, ll. 17-21; col. 6, ll. 10-51; col. 7, ll. 9-22).

For the reasons stated by the Examiner in the Answer, the other arguments furnished by Appellants are not persuasive of substantive error in the Examiner's obviousness rejections. In this regard, Appellants' assertions to the effect that there is a lack of any disclosure in the applied references that would have led one of ordinary skill in the art to employ the polyol of Le-Khac in Ishida lacks merit for reasons indicated by the Examiner (Ans. 5-7 and 9-11).

On this record, we shall sustain the Examiner's obviousness rejections.

ORDER

The Examiner's decision to reject claims 1-7 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellant regards as the invention is affirmed. The Examiner's decision to reject claims 1-15 under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of Le-Khac is affirmed.

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

AFFIRMED

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