UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte R. SUTER HUDSON,
ROBERT E. WATERS and
LOWELL E. WEST

Appeal 2006-2159
Application 09/862,234
Technology Center 1700

Decided: September 28, 2006

Before WALTZ, JEFFREY T. SMITH, and FRANKLIN, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal from the Primary Examiner's refusal to allow claims 1, 2, 4, 5, 10, 11, 13, 16 through 19, 25, 26, 29, 33 through 39, 41 through 44, 46 through 50, and 55 through 74, as amended subsequent to the Final Rejection (Br. 6; see the Amendment dated Feb. 18, 2005, and the

Advisory Action dated Feb. 28, 2005). These claims are the only claims pending in this application (Br. 5). We have jurisdiction pursuant to 35 U.S.C. § 134.

According to Appellants, the invention is directed to a method of forming a floor covering on a substrate in which the floor covering, prior to curing, comprises a plurality of superposed, separate and distinct fluid coating compositions applied simultaneously with a multi-cavity slot die coater (Br. 7). In claims 1, 10, 13, 16, 25, 33 and 66, plastisols, water-based compositions, solvent-based compositions and 100% solids compositions are applied as fluids at room temperature (*id.*). Claims 1 and 49 are representative of the invention and are reproduced below:

> 1. A method of forming a floor covering or floor covering component on a substrate, wherein the floor covering or floor covering component prior to curing comprises a plurality of superposed, separate and distinct fluid coating compositions, the method comprising:
>
> a) obtaining a plurality of curable fluid coating compositions, wherein at least one fluid coating composition comprises a 100 percent solids composition, said 100 percent solids being fluid at room temperature, and
>
> b) applying each fluid coating composition onto a substrate to form a plurality of separate and distinct layers directly or indirectly overlying the substrate,
>
> wherein the fluid coating compositions are applied to the substrate simultaneously with a multi-cavity slot die coater.

> 49. A method of forming a floor covering or floor covering component on a substrate, wherein the floor covering or floor covering component prior to curing comprises a plurality of superposed, separate and distinct fluid coating compositions, the method comprising:
>
> a) obtaining a plurality of curable fluid coating compositions, and

b) applying each fluid coating composition onto a substrate to form a plurality of separate and distinct topcoat layers directly or indirectly overlying the substrate,

wherein the plurality of topcoat compositions are applied to the substrate simultaneously with a multi-cavity slot die coater, and

wherein the plurality fluid coating compositions is applied to the substrate at a point opposite where the substrate is between two adjacent supports.

The Examiner has relied on the following references as evidence of obviousness:

Schirmer	US 4,146,451	Mar. 27, 1979
Rosenberry	US 5,719,227	Feb. 17, 1998
Sartor	US 5,728,430	Mar. 17, 1998
Most	US 5,871,585	Feb. 16, 1999
Simpson	US 6,287,706	Sep. 11, 2001

The following rejections are before this merits panel for review in this appeal:

(1) claims 1, 2, 4, 5, 10, 13, 16-19, 25, 41-44, 47-50, 56, 57, 59-64, 66-70, and 72-74 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Simpson in view of Sartor (Answer 3);

(2) claims 1, 2, 4, 5, 10, 13, 16-19, 25, 41-44, 47-50, 56, 57, 59-64, 66-70, and 72-74 stand rejected under § 103(a) over Simpson in view of Sartor and Rosenberry (Answer 8); and

(3) claims 11, 26, 29, 33-39, 46, 55, 58, 65 and 71 stand rejected under § 103(a) over Simpson in view of Sartor or Simpson in view of Sartor and Rosenberry, both further in view of Schirmer (Answer 9).

We REVERSE all rejections of claims 1, 2, 4, 5, 10, 11, 13, 16-19, 25, 26, 29, 33-39, 44, 48, and 55-74, essentially for the reasons stated in the

Brief, as well as those reasons set forth below. We AFFIRM the rejections of claims 41-43, 46, 47, 49 and 50 for reasons set forth below. Accordingly, the decision of the Examiner is AFFIRMED-IN-PART.

OPINION

A. The Rejection over Simpson in view of Sartor

The Examiner finds that Simpson discloses a method of forming a multilayer sheet for use as a floor covering comprising applying onto a moving glass fiber web multiple curable layers of polyolefin resins, back-coat formulations, a wear layer, and a clear coating formulation, either by melt calendering, viscous blank calendering, or by simultaneously co-extruding multiple layers of curable polyolefin layers in a molten state in a single pass using a sheet die block (Answer 3). The Examiner also finds that Simpson teaches further heating steps to foam the foamable layers and crosslink the polyolefin resins, as well as applying a polish or lacquer type finish as the top layer (Answer 3-4). The Examiner further finds that Simpson teaches use of a non-volatile liquid plasticizer such as liquid paraffin to lower the temperature needed to obtain the viscosity required for good processing. The Examiner finds that Simpson "*[i]n general*" teaches holding the fluid system at a temperature of 80 to 120ºC. to retain the required fluidity for the fabrication of the final product form (Answer 4).

The Examiner recognizes that, *inter alia*, Simpson fails to teach that the polymer and liquid monomer plasticizer system is a liquid at room temperature or that the system could be simultaneously extruded onto a substrate using a multi-cavity slot die coater at room temperature (Answer 4-5). To remedy this deficiency in Simpson, the Examiner reasons that the resin and dodecene liquid plasticizer taught by Simpson would be fluid at

room temperature, as required by the claims on appeal (Answer 5). Alternatively, if the resin and plasticizer mixture was not fluid at room temperature, the Examiner applies Sartor for the teaching that the most important factor in the art of multi-cavity slot die coating is the liquid's viscosity or the ratio of viscosities of the two contiguous layers, and such viscosity can be changed by adding thickeners or thinners (Answer 5). From these findings, the Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention "to have used only thinners such as liquid reactive monomers, e.g. dodecene, or water in Simpson et al without heating coating compositions" with the expectation of providing the desired optimal ratio of viscosities of the two contiguous layers to be coated, as taught by Sartor (*id.*). We disagree.

As correctly argued by Appellants (Br. 10-11), neither Simpson nor Sartor disclose or suggest the required limitation of claims 1 and 10 on appeal that the 100% solids composition is fluid at room temperature. The Examiner's technical reasoning is not convincing since the Examiner has not presented any factual basis to support the premise that the mixture of solid resin and liquid plasticizer (mineral oil) would necessarily be a fluid at room temperature. To the contrary, the Kauffman Declaration under 37 C.F.R. § 1.132 dated Oct. 27, 2005, states that such mixtures result in non-fluid masses at room temperature (Decl. 2-3: ¶ 9).[1] Furthermore, the process of Simpson clearly suggests that the mixture of resin and plasticizer is a melt,

[1] The Kauffman Declaration was submitted by Appellants with the Brief (Br. 1). The Examiner does not explicitly state that this Declaration was entered and considered but does respond to the evidence in the Declaration (Answer 11). Therefore, for the purposes of this appeal, we consider this Declaration as evidence of record, implicitly entered and considered by the Examiner.

i.e., non-fluid at room temperature (Decl. 3: ¶ 10; Simpson, col. 13, ll. 28-45, and Examples 1-5). We determine that Simpson teaches that the combination of the solid and liquid components must be mixed together at sufficient temperature and shear to achieve dispersive mixing, with the fluid system held at a temperature that retains the required fluidity for the fabrication of the final product, generally at 80 to 120ºC (col. 13, ll. 35-45), in contrast to Appellants' process where the 100% solids composition has the required viscosity at room temperature (Specification 10, 17 and 19).

We also determine that Sartor does not remedy the deficiency of Simpson. Sartor merely reinforces the teachings of Simpson, namely that the viscosity is important in the coating process and this viscosity can be controlled by the addition of thinners (Sartor, col. 11, ll. 47-57; col. 12, ll. 9-17; and Simpson, col. 12, ll. 6-14). Although Simpson teaches that the addition of liquids (thinners) can be used to lower the temperature needed to obtain the viscosity necessary for good processing (col. 12, ll. 12-14), there is no teaching or suggestion in either Simpson or Sartor that such thinners could be added until the resins were fluid at room temperature. See Simpson, col. 13, ll. 42-45.

For the foregoing reasons and those stated in the Brief, we determine that the Examiner has not established a prima facie case of obviousness in view of the reference evidence. Therefore we cannot sustain the rejection over Simpson in view of Sartor for claims 1, 2, 4, 5, 10, 11, 13, 16-19, 25, 26, 29, 33-39, 44, 48 and 55-74.

However, the rejection of claims 41-43, 46, 47, 49 and 50 present a different issue since these claims do *not* require that the 100% solids composition be fluid at room temperature. As correctly found by the

Examiner (Answer 3), Simpson teaches the use of a multi-cavity slot die coater (col. 11, ll. 59-65). Appellants argue that Sartor fails to teach the point where the topcoats are applied (Br. 17) while the Examiner finds that Sartor teach applying the coatings at a point opposite where the substrate is between two adjacent supports (Answer 6). Regardless of the interpretation of Sartor, we agree with the Examiner that Appellants have admitted that multi-cavity slot die coaters were known in the art, as evidenced by Most, who teaches applying the coating at the same point as required by the above noted claims (Answer 13; Specification 9; see Most, Fig. 11). Therefore we agree with the Examiner that the subject matter of claims 41-43, 46, 47, 49 and 50 would have been obvious to one of ordinary skill in the art in view of the disclosure and teachings of Simpson, Sartor and Most.

B. The Rejections including Rosenberry and Schirmer

The Examiner additionally relies on Schirmer for the teaching that latex is suitable for making a foamable layer of a floor covering by use of a co-extrusion process (Answer 10). Therefore Schirmer does not remedy the deficiency discussed above with respect to the combination of Simpson and Sartor against any claims with the limitation of a 100% solids composition being fluid at room temperature.

The Examiner applies Rosenberry for the teaching of advantageous results for a wear layer for a floor covering, where the layer comprises a 100% solids coating composition which is liquid at room temperature, a reactive monomer, and a photoinitiator (Answer 9). From this finding, the Examiner concludes that it would have been obvious to "have formulated polymer and monomer/non-volatile liquid plasticizers systems of Simpson et

al; as liquids at room temperature and used a coating composition of Rosenberry et al as top wear layer composition" (*id.*). We disagree.

Rosenberry is directed to an oligomer that is liquid at room temperature, and this oligomer with a diluent can be used as a coating composition to form a wear layer on floor coverings (col. 1, ll. 16-19; and col. 2, ll. 26-35). However, the Examiner has failed to establish how this one (wear) layer could be coated at room temperature in the Simpson process, where Simpson teaches use of a melt process at high temperatures such as 80 to 120ºC. for the remaining layers (Simpson, col. 13, ll. 42-45). The Examiner has further failed to explain how the multi-cavity slot die coater taught by Simpson would function with one coating at room temperature for the oligomer of Rosenberry when all the teachings of Simpson relate to higher temperatures for the required fluidity. The claims require that the fluid coating compositions are applied simultaneously (Br. 20). As discussed above, we fail to find any factual support for the Examiner's finding that Simpson and Sartor teach the use of thinners that can be used with 100% solids compositions without heating to achieve the fluidity necessary for processing.

For the foregoing reasons, we determine that the Examiner has not established a prima facie case of obviousness in view of the reference evidence. Therefore we REVERSE the rejection of claims 1, 2, 4, 5, 10, 13, 16-19, 25, 44, 48, 56, 57, 59-64, 66-70, and 72-74 over Simpson in view of Sartor and Rosenberry. We also REVERSE the rejection of claims 11, 26, 29, 33-39, 55, 58, 65 and 71 over Simpson in view of Sartor, Rosenberry and Schirmer.

As discussed above, claims 41-43, 46, 47, 49 and 50 do not include the limitation requiring that the 100% solids composition is fluid at room temperature. Therefore we AFFIRM the rejection of claims 41-43, 47, 49 and 50 over Simpson in view of Sartor and Rosenberry, for reasons of record and as discussed above. We also AFFIRM the rejection of claim 46 over Simpson in view of Sartor, Rosenberry and Schirmer, for reasons of record and as discussed above.

C. Summary

We REVERSE all rejections of claims 1, 2, 4, 5, 10, 11, 13, 16-19, 25, 26, 29, 33-39, 44, 48, and 55-74.

We AFFIRM all rejections of claims 41-43, 46, 47, 49 and 50. Accordingly, the decision of the Examiner is AFFIRMED-IN-PART.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2004).

AFFIRMED-IN-PART

TAW/tf

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