

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS H. PETER,
VINCENT J. GAJEWSKI,
and
CHARLES F. MALLON

Appeal No. 2006-0440
Application No. 10/291,933

ON BRIEF

Before KIMLIN, WARREN, and DELMENDO, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2004) from the examiner's final rejection of claims 1 through 9, 17, and 18 (final Office action mailed on September 29, 2004), which are all of the claims pending in the above-identified application.

The subject matter on appeal relates to a method for coating a substrate with a polymeric reaction mixture.

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According to the appellants, the claimed method is particularly well suited for coating rolls, pipes, belts, die cutting devices and a variety of other cylindrical substrates. (Specification at 8, lines 5-23.) Further details of this appealed subject matter are recited in representative claims 1, 17, and 18 reproduced below:

1. A method for coating a substrate comprising:
 - i) rotating the substrate about an axis at a selected rotational speed,
 - ii) applying a polymeric reaction mixture to a surface of the rotating substrate by ejecting the polymeric reaction mixture through a die at a selected flow rate, said die dividing an inlet stream of the polymeric reaction mixture into plural outlet streams, the outlet streams being applied to the substrate and the outlet streams being spaced apart from each other such that the outlet streams flow together seamlessly after application to the substrate,
 - iii) effecting relative linear movement between the rotating substrate and the die in a direction parallel to the axis of rotation at a selected relative linear speed, and,
 - iv) synchronizing the reaction mixture flow rate, the relative linear speed and the rotational speed in such a way that successive convolutions of the outlet streams of the polymeric reaction mixture overlap and meld together seamlessly.

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17. The method of claim 1 wherein the die is oriented at an angle of from about 8° to about 40° from the surface of the substrate.

18. The method of claim 1 wherein the die divides the inlet stream of polymeric reaction mixture in a series of branched successive stages to provide the plural outlet streams, the streams of each stage being provided by branched division of corresponding streams of the preceding stage.

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

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|---------------------------|-----------|---------------|
| Zimmer et al. (Zimmer) | 4,550,681 | Nov. 5, 1985 |
| Grimm et al. (Grimm) | 5,601,881 | Feb. 11, 1997 |

Claims 1 through 9, 17, and 18 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Grimm in view of Zimmer. (Examiner's answer mailed on August 11, 2005 at 3-9.¹)

We affirm. Because we are in complete agreement with the examiner's factual findings and legal conclusions, we adopt them

¹ The statement of rejection in the answer contains a typographical error. Specifically, it appears that claims 17 and 18 were inadvertently omitted from the statement. It is clear, however, that the examiner has maintained the final of these claims (answer at 5-6; final Office action at 4) and the appellants have fully responded to the rejection of these claims (substitute appeal brief filed on May 20, 2005 at 6-8).

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as our own and add the following comments primarily for emphasis.²

It is well settled that the United States Patent and Trademark Office (PTO) is obligated to give disputed claim terms their broadest reasonable interpretation, taking into account any enlightenment by way of definitions or otherwise found in the specification. In re Bigio, 381 F.3d 1320, 1324, 72 USPQ2d 1209, 1211 (Fed. Cir. 2004) (“[T]he PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution.”); In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997) (“[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill.”); In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (“During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.”).

² The appellants present arguments for separate patentability of the claims as follows: (i) claims 1-9; (ii) claim 17; and (iii) claim 18. (Substitute appeal brief at 3-8.) We select claim 1 as representative of claims 1-9 and, accordingly, confine our discussion of the rejection to claims 1, 17, and 18. 37 CFR § 41.37(c)(vii)(2005) (effective September 13, 2004).

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Claim 1, step ii), recites in part: "the outlet streams being applied to the substrate and the outlet streams being spaced apart from each other such that the outlet streams flow together seamlessly after application to the substrate." Thus, the recitation specifies two limitations: (1) the outlet streams are applied to the substrate; and (2) the outlet streams are spaced apart from each other such that they flow together seamlessly after application to the substrate. By its express terms, however, the first limitation does not specify the particular physical forms of the outlet streams. That is, the limitation does not recite that the outlet streams are applied to the substrate individually and separately. Hence, we construe the first limitation to read on or encompass a step in which the outlet streams are combined at the time that they are applied to the substrate. Similarly, with respect to the second limitation, there is no requirement that the outlet streams must be spaced apart immediately prior to their application to the substrate. The limitation merely requires that the outlet streams are spaced apart at some point in time but that they flow seamlessly after application to the substrate.

Our interpretation of the claim language is consistent with the specification description, which indicates to one skilled in

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the relevant art that the claimed invention encompasses a method in which the outlet streams "flow together easily and immediately over a relatively wide area of the substrate" (emphasis added). (Specification at 9, lines 10-13.) While Figures 1 and 2 appear to depict an embodiment in which the outlet streams are individually and separately applied to the substrate, such an embodiment is described as a preferred embodiment. In this regard, the specification (page 21, lines 16-19) informs one skilled in the relevant art as follows:

While the above description contains many specifics, these specifics should not be construed as limitations on the scope of the invention, but merely as exemplifications of preferred embodiments thereof.

In re Bigio, 381 F.3d at 1324, 72 USPQ2d at 1211 ("[T]his court counsels the PTO to avoid the temptation to limit broad claim terms solely on the basis of specification passages.")

Having construed the disputed claim language, we turn to the evidence. Like the appellants, Grimm describes a method for coating a body (e.g., a substrate such as a pipe) comprising:

- i) rotating the body (substrate) about an axis;
- ii) ejecting a polyurethane reaction mixture through a sheet die onto the rotating body, with the sheet die being disposed at an angle α to the axis of rotation;

- iii) effecting relative movement between the rotating body and the sheet die in a direction parallel to the axis of rotation; and
- iv) synchronizing the rate of reaction of the reaction mixture and the relative movement with the circumferential speed of the rotating body in such a way that successive convolutions overlap in the form of scales and connect together seamlessly.

(Column 1, line 50 column 2, line 17.) Grimm further teaches that the circumferential speed at the largest diameter of the coating to be applied is preferably adjusted to be less than the speed at which the reaction mixture emerges from the sheet die.

(Column 3, lines 41-45.) Thus, one of ordinary skill in the art would have understood that the substrate is rotated at a selected speed.

As the examiner correctly points out (answer at 3), Grimm's method differs from a method encompassed by appealed claim 1 only in that step ii) of the prior art method does not involve the use of a die that divides "an inlet stream of the polymeric reaction mixture into plural outlet streams, the outlet streams being applied to the substrate and the outlet streams being spaced apart from each other such that the outlet streams flow

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together seamlessly after application to the substrate." This difference notwithstanding, we find no reversible error in the examiner's determination (answer at 4-5) that one of ordinary skill in the art would have been led to modify Grimm's method in view of the teachings of Zimmer to arrive at a method encompassed by appealed claim 1.

Specifically, Zimmer teaches a device for applying a flowable material onto the surface of a substrate. (Column 1, lines 7-12.) According to Zimmer, uniform distribution of a working fluid over a relatively moving substrate is achievable by means of an applicator body provided with a channel system having a branched structure extending from an entrance port to a multiplicity of exit ports disposed in a row transverse to the direction of relative substrate motion, the branches of the channel system becoming progressively more numerous and correspondingly narrower from the entrance port to the exit ports. (Column 1, line 59 to column 2, line 2; Figure 16.) Given the collective teachings of the prior art, we share the examiner's view that one of ordinary skill in the art would have found the requisite motivation, suggestion, or teaching in the applied prior art references to modify Grimm's method by using Zimmer's applicator in lieu of a sheet die in order to achieve

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uniform distribution of the coating, thus arriving at a method encompassed by appealed claim 1. In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991) (citing In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988)).

The appellants argue that “[n]othing in Zimmer et al. discloses or suggests the coating of a substrate with a reactive polymeric reaction mixture” and that “[n]othing in Grimm et al. discloses or suggests the use of a multichannel applicator for applying a polymeric reaction mixture in the method described therein.” (Substitute appeal brief at 3-4.) The examiner correctly found these arguments unpersuasive. While Zimmer does not expressly disclose the use of the disclosed multichannel applicator for applying a polymeric reaction mixture on a substrate, the reference suggests the suitability of the applicator for applying any flowable material (which would be inclusive of Grimm’s polyurethane reaction mixture) onto a substrate. Also, while Grimm does not disclose a multichannel applicator, the teachings of Zimmer provide the requisite motivation, suggestion, or teaching for one of ordinary skill in the art to modify Grimm’s method. In re Keller, 642 F.2d 413, 426, 208 USPQ 871, 882 (CCPA 1981) (“[O]ne cannot show non-

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obviousness by attacking references individually where, as here, the rejections are based on combinations of references.”).

The appellants argue that the examiner’s restriction requirement, which divided apparatus claims from method claims, somehow precludes the examiner’s rejection. (Substitute appeal brief at 4-5.) This argument is utterly without merit. Both references disclose a method of coating a substrate as well as an apparatus to carry out that method. Thus, the appellants’ contention that “disclosure of an apparatus does not render a process obvious,” even if accepted as correct, is irrelevant.

The appellants urge that Zimmer is not concerned with the problem (entrapment of air bubbles) addressed in the present specification. (Substitute appeal brief at 5-6.) We note, however, that Grimm addresses this problem and states that the method described therein solves this problem. (Column 2, lines 28-31.) Moreover, the examiner is again correct in pointing out (answer at 8) that the motivation to combine the prior art references need not be identical to that of the applicants in order to establish obviousness under 35 U.S.C. § 103(a). In re Kemps, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996); In re Dillon, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (en banc).

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With respect to the appellants' argument that Zimmer does not teach orienting the applicator at an angle relative to the substrate (substitute appeal brief at 6), no such requirement is recited in appealed claim 1. To the extent that such an argument is appropriate for appealed claim 17, we find it unpersuasive for the reasons stated in the answer at 8-9. Furthermore, in discussing the coating of a flat substrate, Zimmer teaches that the applicator can be mounted "somewhat inclinedly." (Column 6, lines 1-4.)

With respect to appealed claim 18, the appellants argue (substitute appeal brief at 7):

While Zimmer et al. discloses the branched division of a flowable material, the branched division does not provide plural outlet streams applied to a substrate. Rather, the plural streams from the branches are combined within the applicator itself prior to discharge therefrom.

The problem with the appellants' argument is that the appealed claims are significantly broader in scope than what the appellants would have us believe. As discussed above, the appealed claims do not recite any limitation with respect to the outlet streams being applied to the substrate individually and separately. Nor do they recite any requirement that the outlet streams must be spaced apart immediately prior to their

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application to the substrate. Although the appellants could have clearly avoided the prior art by narrowing the scope of the appealed claims during prosecution, they chose not to do so. In re Bigio, 381 F.3d at 1324, 72 USPQ2d at 1211 (“[A] patent applicant has the opportunity and responsibility to remove any ambiguity in claim term meaning by amending the application.”); In re Morris, 127 F.3d 1048, 1056, 44 USPQ2d 1023, 1029 (Fed. Cir. 1997) (“It is the applicants’ burden to precisely define the invention, not the PTO’s.”).

Belatedly in the reply brief (2-4), the appellants rely on the example discussed in the specification at 19-21 as evidence of unexpected results. Specifically, the example is limited to a single comparison of the claimed invention against the prior art using Adiprene RFA 1004 (an MDI polyester polyurethane prepolymer from Crompton Corp.) and Adiprene RFB 4170 (an ester/amine based curative from Crompton Corp.) under specific conditions. According to the specification, the invention provided a “high quality, bubble free roll cover...with a thickness of about 2.3 cm,” while a method representative of Grimm’s method provided a roll with “some bubbles.”

We find this evidence unconvincing for a number of reasons. Unlike the specific method described in the example, the

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appealed claims read on a method for applying any polymeric reaction mixture on any substrate under virtually any set of conditions. Thus, the proffered showing is not commensurate in scope with the claims. In re Kulling, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990) (“‘[O]bjective evidence of nonobviousness must be commensurate in scope with the claims.’”) (quoting In re Lindner, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972)); In re Dill, 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979) (“The evidence presented to rebut a prima facie case of obviousness must be commensurate in scope with the claims to which it pertains.”).

Further, the appellants have not met their burden of establishing that one of ordinary skill in the art would have considered the differences in results to be truly unexpected. In re D’Ancicco, 439 F.2d 1244, 1248, 169 USPQ 303, 306 (CCPA 1971) (holding that the appellants failed to rebut a prima facie case of obviousness where the asserted differences between the claimed foams and prior art foams were not shown to be significant); In re Freeman, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973) (explaining that in order for a showing of unexpected results to be probative evidence of nonobviousness, an applicant must establish (1) that there actually is a

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difference between the results obtained through the claimed invention and those of the prior art and (2) that the difference actually obtained would not have been expected by one skilled in the art at the time of invention).

Finally, it is not entirely clear that the appellants followed the procedures set forth in the examples of Grimm, which teaches that there was no evidence of any air blisters in the product. In re Baxter Travenol Labs, 952 F.2d 388, 392, 21 USPQ 1281, 1285 (Fed. Cir. 1991) (“[R]esults must be shown to be unexpected compared with the closest prior art.”).

For these reasons and those set forth in the answer, we affirm the examiner’s rejection under 35 U.S.C. § 103(a) of appealed claims 1 through 9, 17, and 18 as unpatentable over Grimm in view of Zimmer.

The decision of the examiner is affirmed.

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

AFFIRMED

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| Edward C. Kimlin |) | |
| Administrative Patent Judge |) | |
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| |) | BOARD OF PATENT |
| Charles F. Warren |) | |
| Administrative Patent Judge |) | APPEALS AND |
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