UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DOUGLAS EDWARD APPLEBY

Appeal 2008-0957
Application 10/407,738
Technology Center 1700

Decided: 7 February 2008

Before FRED E. MCKELVEY, *Senior Administrative Patent Judge*, and SALLY G. LANE, and JAMES T. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

The Appellants appeal under 35 U.S.C. § 134 (2002) from a final rejection of claims 1-11 and 23-31.[1] We have jurisdiction under 35 U.S.C. § 6(b) (2002).

[1] Claims 12-22 stand withdrawn pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

The Appellant's claims are directed to caramel coated food casings and methods of manufacturing the casings.

Claims 1, 11, 23, 27 and 31 are the independent claims in the application. The Appellant does not argue any claims separately in the Appeal Brief.[2] Therefore, we select independent claim 1 to decide this appeal. 37 C.F.R. § 41.37(c)(1)(vii)(2006).

Claim 1 reads as follows:

> 1. A coated food casing comprising a substantially uniform caramel coating on a surface of a food casing, wherein said caramel coating comprises at least about 40% by weight of solids having a molecular weight greater than about 10,000.

THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Chiu	US 4,219,574	Aug. 26, 1980
Oxley	US 5,084,283	Jan. 28, 1992
Stall	US 6,086,929	Jul. 11, 2000

The following rejections are before us for review:

[2] We note that the Appellant raises an argument in the Reply Brief that relates to the Examiner's rejection of independent claims 23, 27 and 31 with regard to the "fractionated caramel composition" limitation, asserting that it would add expense. *See* Reply Br. 2; *see also* claims 23, 27 and 31. We note that this belated attorney argument is also unpersuasive. It has long been known in the art to fractionate caramel by ultrafiltration to remove the fraction with molecular weight up to 10,000 (US 4,330,561) and improve coloring power by removing lower molecular weight constituents (US 4,325,743), despite its added cost.

1. Claims 1-5, 7, 11, 23, 25, 27, 29, and 31 stand rejected under 35 U.S.C. § 103(a) (2004) over the combination of Chiu and Oxley.

2. Claims 6, 8-10, 24, 26, 28, and 30 stand rejected under 35 U.S.C. § 103(a) (2004) over the combination of Chiu, Oxley and Stall.

We AFFIRM.

ISSUE

Has the Appellant established that the Examiner erred in determining that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine and optimize the known elements of the prior art for their known functions to arrive at the claimed subject matter?

FINDINGS OF FACT

The record supports the following findings of fact by a preponderance of the evidence:

1. Chiu describes a food casing suitable to impart an apparent smoke color to at least a portion of a food product and its casing. (Chiu 1:1-7).

2. Chiu describes that the food casing has interior and exterior surfaces and a coating comprising caramel and an antiblock agent on at least a portion of one of the surfaces. (2:13-17).

3. Chiu describes one embodiment of the coating wherein the coating is preferably substantially uniform over the entire interior surface of the food casing. (2:37-38).

4. Chiu describes that suitable antiblocking agents include hydrophobic substances, for example, vegetable oil. (3:34-37).

5. Chiu describes that the amount of caramel in the coating of the

invention, i.e, the concentration of the caramel in the solution applied to the coating, depends upon the degree of coloring desired. (4:5-9).

6. Chiu describes that the term "caramel" includes commercially available caramel, but is not limited to this class of materials. The term "caramel" also includes any carbohydrate containing material which has been caramelized and can include other substances such as flavoring ingredients. (3:26-33).

7. Chiu differs from the claimed invention in that Chiu does not expressly describe that the caramel coating comprises at least 40% by weight of solids having a molecular weight greater than about 10,000.

8. Oxley describes a food casing having distinguishing indicia, such as a pattern or logo on one surface of the casing. (Oxley 1:6-20).

9. Oxley describes that preferred indicia material for the food casing is a caramel based coloring material. (4:45-46).

10. Oxley describes that when caramel is applied to the casing surface, it remains substantially on the surface and does not significantly migrate or diffuse into the casing wall due to the molecular weight of the caramel, which is composed of constituents having molecular weights from below 2,000 to over 10,000. (4:47-54).

11. Oxley describes that natural or synthetic caramel, or other high molecular weight, water soluble coloring that is edible is suitable for the invention. (4:56-59).

12. Oxley describes one example of the invention using a caramel color with 27% of the caramel constituents having molecular weights above

10,000; 14 wt.% are in the 2,000-10,000 range; and 59 wt.% are below 2,000. (10:7-14).

13. Oxley describes using a dark higher molecular weight caramel to simulate a dark brown color and a lower molecular weight caramel to provide a lighter brown color. (12:37-40).

14. Stall describes an improved shirring solution for coating a cellulosic sausage casing comprising carboxymethylcellulose, polyethylene glycol and methylcellulose. (6:14-20).

15. Stall describes that, in the art, propylene glycol is often used as a humectant in shirring solutions. (1:23-26; 3:54-55; 7:48-49).

16. Stall describes that propylene glycol is used in the casing to prevent water loss. (3:56-57).

17. Stall describes that using a 60% concentration of propylene glycol in the shirr spray was typical in the art and that concentrations have "more recently" decreased to about 10%. (4:11-16).

PRINCIPLES OF LAW

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007).

When the "claimed ranges are completely encompassed by the prior art, the conclusion [that a prima facie case of obviousness exists] is even

more compelling than in cases of mere overlap." *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003).

ANALYSIS

I. The Rejection of Claims 1-5, 7, 11, 23, 25, 27, 29, and 31 under 35 U.S.C. § 103(a) (2004) over Chiu and Oxley.

Claims 1-5, 7, 11, 23, 25, 27, 29, and 31 stand rejected under 35 U.S.C. § 103(a) over Chiu and Oxley. The Examiner found that Chiu describes a fiber-reinforced cellulose food casing having an interior surface coating composed of a solution containing caramel and vegetable oil. (Non-Final Rejection, Mar. 14, 2006, p. 2, incorporated by reference in Final Rejection, Sep. 20, 2006, p. 2). The Examiner also found that Chiu describes that the coating transfers to a food product that is encased in the coating. (Non-Final Rejection, Mar. 14, 2006, p. 2, incorporated by reference in Final Rejection, Sep. 20, 2006, p. 2).

Additionally, the Examiner found that Oxley describes a caramel composed of constituents having molecular weights above 10,000. (Non-Final Rejection, Mar. 14, 2006, p. 2, incorporated by reference in Final Rejection, Sep. 20, 2006, p. 2).

From these findings, the Examiner determined that it would have been obvious to one of ordinary skill in the art at the time of the invention to select Oxley's caramel, composed of constituents having molecular weights above 10,000, as the caramel used in Chiu. (Non-Final Rejection, Mar. 14, 2006, p. 2, incorporated by reference in Final Rejection, Sep. 20, 2006, p. 2). The Examiner further determined that it would have been obvious to one of ordinary skill in the art at the time of the invention to select a fractionated

caramel to use as the caramel described in Chiu because it was well known in the art at the time of the invention to prepare a cellulose casing having a fractionated caramel coloring. (Id.).

The Examiner also determined that finding the optimum percent of caramel solids having a molecular weight above 10,000 for use in the coating of a food casing would have required nothing more than routine experimentation by one of ordinary skill in this art. (Non-Final Rejection, Mar. 14, 2006, p. 2, incorporated by reference in Final Rejection, Sep. 20, 2006, p. 2). The Examiner then concluded that it would have been obvious for one skilled in the art at the time of the invention to use a caramel comprising at least about 40% by weight of solids having a molecular weight of 10,000. (Id.).

The Appellant argues that the Examiner erred in rejecting claims 1-5, 7, 11, 23, 25, 27, 29, and 31 as being obvious over the combination of Chiu and Oxley because the cited references "fail to teach or suggest each and every limitation of the claim [sic] invention." (App. Br. p. 3). Specifically, the Appellant argues that the combination of references does not teach a caramel coating that "comprises at least about 40% by weight of solids having a molecular weight greater than about 10,000." (App. Br. p. 3). The Appellant asserts that Oxley "merely teaches generic caramel" having a "distribution of molecular weights." (Id.).

This argument is not persuasive. To begin, the combination of prior art references need not teach or suggest all claim limitations for an Examiner to properly rely upon the references for an obviousness rejection. *Dann v. Johnson*, 425 U.S. 219, 230 (1976)("mere existence of differences between

the prior art and an invention does not establish the invention's nonobviousness"). Rather, the principal issue is whether the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

Further, the Appellant has not distinguished its claim from the prior art by asserting that Oxley teaches "generic caramel" having "a distribution of molecular weights." The Appellant's claim, as written, does not preclude the caramel coating solids from having a distribution of molecular weights. The claim language only requires that the caramel coating "comprises *at least 40%* weight of solids having a molecular weight greater than about 10,000." (App. Br. 8). The claim, therefore, does not require that *all* of the constituents comprising the 40 or more percent weight of solids to have the *same* molecular weight greater than 10,000. In other words, this portion of the constituents could comprise a distribution of molecular weights greater than 10,000.

Similarly, the Appellant's claim does not require the constituents making up the remaining percent weight of solids, i.e., up to 60% of the weight solids, to have the same molecular weight. Indeed, the molecular weights for this portion of the solids content are unlimited. Therefore, we find that the Appellant's claim does not exclude having a caramel coating comprised of solids having a distribution of molecular weights, as described by Oxley.

The primary difference between the claimed invention and the combined prior art is that the Appellant claims a more narrow range of molecular weights for a portion, i.e., "at least 40%," of the caramel

constituents in its coating. The Appellant's claimed range for this portion of constituents is "greater than about 10,000" and Oxley describes a molecular weight range for the entire portion of its caramel constituents "from below 2,000 to over 10,000." (4:47-54). Therefore, the molecular weight range described by Oxley encompasses the range of molecular weights claimed by the Appellant. As explained by the Court in *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003), when the "claimed ranges are completely encompassed by the prior art, the conclusion [that a prima facie case of obviousness exists] is even more compelling than in cases of mere overlap." Such is the case here.

Additionally, as the Examiner properly determined, limiting the molecular weight of "at least 40 % weight of solids" in the caramel to greater than about 10,000 would have been obvious to one of ordinary skill in the art at the time of the invention who reviewed the references. Oxley describes that the molecular weight of the caramel allows the caramel to remain on the surface of the casing without significantly migrating or diffusing into the casing wall. (4.47-54). Oxley also describes that there is a direct relationship between the molecular weight of the caramel and the shade of brown color simulated: higher molecular weight provides darker brown color and lower molecular weights provide lighter brown color. (12:37-40).

Thus, it would be obvious from these teaching to one of ordinary skill in the art to adjust the percentage of higher molecular weight solids in the caramel based upon the characteristics of the casing surface selected and/or the shade of caramel color desired. Consequently, the Appellant's claimed

range represents an optimization, through routine experimentation, of the range of molecular weights described by Oxley. This discovery of an optimum range is not inventive. *In re Aller*, 220 F.2d 454, 456 (C.C.P.A. 1955).

Moreover, the Appellant has not argued or presented evidence that its claimed optimum percent of caramel solids having molecular weight greater that 10,000 is critical to improving the caramel coating on a food casing, or that the "results of optimizing the range are unexpectedly good." *See In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997)(internal quotes omitted).

For these reasons, we do not find error with the Examiner's obviousness rejections.

The Appellant next argues that the rejections of claims 1-5, 7, 11, 23, 25, 27, 29, and 31 are improper because the Examiner failed to provide evidence of a motivation to combine Chiu and Oxley, and, without such evidence, the rejections "amount to no more than an impermissible hindsight reconstruction of Applicant's invention." (App. Br. 4-6). The Appellant urges that the only statement that the Examiner offered as the motivation to combine Chiu and Oxley was "that the combination would have been obvious 'depending on [sic] desired results, personal preference and consumer appeal.'" (App. Br. 5)(quoting Final Rejection, Sep. 20, 2006, p. 3). "Chiu teaches away from using a caramel coating having a concentrated molecular [sic] as claimed." (Br. p. 4).

This argument is not persuasive. In rejecting these claims, the Examiner referenced teachings in Chiu and Oxley. (*See* Non-Final Rejection, Mar. 14, 2006, p. 2, incorporated by reference in Final Rejection,

Sep. 20, 2006, pp. 2-3). The reason to combine these references to arrive at the claimed subject matter is provided, although not expressly, in the references themselves. Chiu teaches a coated food casing comprising a caramel coating that is preferably substantially uniform over the surface of the casing. (2:13-17, 37-38). Chiu also describes that the caramel selected is not limited to commercially available caramel, (3:26-33), and that the concentration of caramel used depends upon the degree of coloring desired, (4:5-9). Oxley describes applying a caramel color comprised of constituents having molecular weights above 10,000 to a food casing. (4:47-54). Oxley also describes that a higher molecular weight caramel will simulate a dark brown color. (12:37-40). The Examiner discussed that one skilled in the art at the time of the invention who reviewed Chiu and Oxley and desired a darker colored caramel coating would select a caramel comprised of solids having molecular weights over 10,000 as the caramel used in the coating described by Chiu. The appellant has put forth no persuasive argument that the examiner erred in this regard.

Therefore, we conclude that the Examiner supported the obviousness rejections with a rational basis and did not err in determining that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the references to arrive at the claimed invention. Such a determination is not the result of inappropriate hindsight. *See In re McLaughlin*, 443 F.2d 1392, 1395 (C.C.P.A. 1971)(reconstruction is not improper if it relies on ordinary skill at the time of the invention and not on knowledge gained solely from the applicant's disclosure).

II. The Rejection of Claims 6, 8-10, 24, 26, 28, and 30 under 35 U.S.C. § 103(a) (2004) over Chiu, Oxley and Stall.

Claims 6, 8-10, 24, 26, 28, and 30 stand rejected under 35 U.S.C. § 103(a) over Chiu, Oxley and Stall. The Examiner found that it would have been obvious to one of ordinary skill in the art at the time of the invention to select soybean oil as the vegetable oil in the casing coating in Chiu because soybean oil is a well known lubricant for coating the interior of a cellulose casing. (Non-Final Rejection, Mar. 14, 2006, p. 3, incorporated by reference in Final Rejection, Sep. 20, 2006, p. 2).

The Examiner also found that it would have been obvious to include propylene glycol and methylcellulose in the coating because, as described by Stall, these components are conventionally used in cellulose casing coatings to improve coherency of the casing. (Id.). Additionally, the Examiner determined that selecting an optimum amount of propylene glycol to use in the coating requires only routine experimentation by one reasonably skilled in the art. (Id.).

The Appellant asserts that the Examiner failed to provide any teaching or suggestion in Stall that addresses the "missing elements" that the Appellant asserted with regard to claims 1-5, 7, 11, 23, 25, 27, 29, and 31. The Appellant does not raise any separate arguments to support this assertion. Rather, the Appellant contends only that claims 6, 8-10, 24, 26, 28, and 30 are allowable because they depend from claims 1, 23, and 27. As set forth, supra, we have affirmed the rejection of claims 1, 23 and 27. Consequently, the Appellant has not persuaded us that the Examiner erred in rejecting dependent claims 6, 8-10, 24, 26, 28, and 30.

CONCLUSION OF LAW

On the record before us, the Appellant has not shown error on the part of the Examiner. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine and optimize the known elements of the prior art for their known functions to arrive at the claimed subject matter.

DECISION

The Rejection of claims 1-5, 7, 11, 23, 25, 27, 29, and 31 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Chiu (US 4,219,574) and Oxley (US 5,084,283) is AFFIRMED.

The Rejection of claims 6, 8-10, 24, 26, 28, and 30 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Chiu (US 4,219,574), Oxley (US 5,084,283), and Stall (US 6,086,929) is AFFIRMED.

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) (2006).

AFFIRMED

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