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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PEIGUANG ZHOU, DAVID GERARD IWANSKI,
GARY ALAN TURCHAN, and ANDREW MARK LONG

Appeal 2019-006087
Application 15/025,445
Technology Center 1600

Before DONALD E. ADAMS, JEFFREY N. FREDMAN, and
ELIZABETH A. LAVIER, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from Examiner's decision to reject claims 1–15 (Br. 2).² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “Kimberly-Clark Worldwide, Inc.” (Appellant’s October 8, 2018 Appeal Brief (Br.) 1).

² Appellant’s pending claims 16–20 stand withdrawn from consideration (Br. 2).

STATEMENT OF THE CASE

Appellant's disclosure relates "to an extruded, water-soluble, thermoplastic article into which an active agent has been incorporated, and a method for manufacturing the same" (Spec. 1). Appellant's claims 1, 9, 10, and 14 are reproduced below:

1. An extruded water-soluble article comprising:

a water-soluble, polymer having an extrusion temperature of 90 to 150°C, the polymer having a molecular weight between about 10,000 to about 50,000; a plasticizer; and

one or more thermal active agents in a total amount of 0.1 % to 50% by weight of the article,

wherein the one or more thermal active agents are completely dissolvable/dispersible in the plasticizer;

wherein the combination of the one or more thermal active agents and the plasticizer is a homogeneous mixture/solution;

wherein a homogeneous blend, comprising the polymer and the homogeneous mixture/solution, has an extrusion temperature of 50 to 125°C; and

wherein the one or more thermal agents are configured to be released when the extruded water-soluble article is wetted to provide either an actual or perceived thermal effect on a user's skin.

(Br. 8.)

9. The extruded water-soluble article of claim 1, wherein the article is a mono-layer or multilayer film.

(*Id.* at 9.)

10. The extruded water-soluble article of claim 9, wherein the film has a water dissolution speed from 5 seconds to 30 minutes as determined by the Dissolution Test of the present disclosure.

(*Id.*)

14. The extruded water-soluble article of claim 1, wherein the one or more thermal active agents are configured to either

stimulate human sensory receptors or change the temperature of the skin upon contact therewith.

(Id.)

Grounds of rejection before this Panel for review:

Claims 1–15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bond,³ Mentink,⁴ and Oji.⁵

Claims 1–15 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1–11 and 15 of copending Application 15/032,235.

Obviousness:

ISSUE

Does the preponderance of evidence relied upon by Examiner support a conclusion of obviousness?

FACTUAL FINDINGS (FF)

FF 1. Bond “relates to films formed from compositions comprising intimate admixtures of thermoplastic starch, thermoplastic polymers and oils, waxes, or combinations thereof” and “to articles made of these films” (Bond ¶ 2; *see generally* Ans.⁶ 5–6).

FF 2. Bond discloses that “[t]he term ‘thermoplastic starch’ refers to destructured starch with a plasticizer” (Bond ¶ 25; *see also id.* ¶ 32 (Bond discloses that a “plasticizer can be used . . . to destructure the starch and

³ Bond et al., US 2012/0321871 A1, published Dec. 20, 2012.

⁴ Mentink et al., US 2011/0086949 A1, published Apr. 14, 2011.

⁵ Oji et al., GB 2 302 651 A, published Jan. 29, 1997.

⁶ Examiner’s February 8, 2019 Answer.

enable the starch to flow, i.e. create a thermoplastic starch” and to “improve the flexibility of the final products”); *see generally* Ans. 8).

FF 3. Bond discloses that plasticizer within the scope of its invention includes glycerin (Bond ¶ 35; *see* Ans. 5; *cf.* Spec. 5 (Appellant disclose that glycerin is a plasticizer within the scope of its invention)).

FF 4. Bond discloses the use of starch or starch blends having an average molecular weight “from about 3,000 g/mol to about 20,000,000 g/mol” (Bond ¶ 29; *see* Ans. 5 and 8).

FF 5. Bond discloses that “[t]hermoplastic polymers . . . are polymers that melt and then, upon cooling, crystallize or harden, but can be re-melted upon further heating,” wherein “[s]uitable thermoplastic polymers used . . . [in Bond’s disclosure] have a melting temperature . . . from about 60° C. to about 300° C.” (Bond ¶ 37; *see* Ans. 5).

FF 6. Bond discloses that “thermoplastic polymers [within the scope of its disclosure] include polypropylene, polyethylene, polyamides, polyvinyl alcohol, ethylene acrylic acid, polyolefin carboxylic acid copolymers, polyesters, and combinations thereof” (Bond ¶ 40; *see also id.* ¶ 39; *see* Ans. 5; *cf.* Spec. 15 (Appellant discloses, and claims, polymers within the scope of its invention “selected from the group consisting of polyvinyl alcohol (PVOH), polyethylene oxide (PEO), polyethylene glycol (PEG), polyacrylate (acid), polyacrylamide, polyester, thermoplastic starch, polyolefin copolymer; and a combination thereof.)).

FF 7. Bond discloses that its compositions may “include an additive[, such as a filler,] . . . dispersed throughout the composition, or . . . substantially in the thermoplastic polymer portion of the thermoplastic layer, substantially in the oil portion of the composition, or substantially in the . . . [thermoplastic

starch (TPS)] portion of the composition” (Bond ¶ 56; *see id.* ¶ 57 (Bond discloses “[n]on-limiting examples of classes of additives contemplated in the compositions disclosed herein include perfumes, dyes, pigments, nanoparticles, antistatic agents, fillers, and combinations thereof”); *see generally* Ans. 5–6).

FF 8. Bond discloses that a filler within the scope of its disclosure includes “alkali metal salts” (Bond ¶ 60; *cf.* Spec. 5 and 16 (Appellant discloses, and claims, that thermal agents within the scope of its invention includes alkali-metal compounds, menthol, and combinations thereof); *see* Ans. 6).

FF 9. Bond discloses that the additive, i.e. filler, is present “in a weight percent of about 0.05 wt% to about 20 wt%” (Bond ¶ 57; *see* Ans. 6).

FF 10. Bond discloses that its composition:

can be formed into a film and can comprise one of many different configurations, depending on the film properties desired. The properties of the film can be manipulated by varying, for example, the thickness, or in the case of multilayered films, the number of layers, the chemistry of the layers, i.e., hydrophobic or hydrophilic, and the types of polymers used to form the polymeric layers.

(Bond ¶ 65; *see also id.* ¶ 66 (Bond’s “films . . . can be multi-layer films”); *see generally id.* ¶¶ 67–71; *see* Ans. 5–6.)

FF 11. Bond discloses that “[t]he oil, wax, or combination thereof can be dispersed within the thermoplastic starch and thermoplastic polymer such that the oil, wax, or combination has a droplet size of less than 10 µm”

(Bond ¶ 11; *see* Ans. 8).

FF 12. Bond discloses that its

[f]ilms . . . are made from compositions of an intimate admixture of a thermoplastic starch, thermoplastic polymer, and an oil, wax or combination thereof. The term “intimate

admixture” refers to the physical relationship of the oil or wax, the thermoplastic starch, and thermoplastic polymer, wherein the oil or wax is dispersed within the thermoplastic polymer and/or thermoplastic starch. The droplet size of the oil or wax within in the thermoplastic polymer is a parameter that indicates the level of dispersion of the oil or wax within the thermoplastic polymer and/or thermoplastic starch. The smaller the droplet size, the higher the dispersion of the oil or wax within the thermoplastic polymer and/or thermoplastic starch, the larger the droplet size the lower the dispersion of the oil or wax within the thermoplastic polymer and/or thermoplastic starch. The oil, wax, or both associate with the thermoplastic polymer, but are mixed into both the TPS and thermoplastic polymer during formation of the compositions as disclosed herein. As used herein, the term “admixture” refers to the intimate admixture of the present invention, and not an “admixture” in the more general sense of a standard mixture of materials.

(Bond ¶ 17; *see generally* Ans. 8–9.)

FF 13. Examiner finds that although Bond discloses vinyl polymers, it fails to disclose “the specific vinyl of [Appellant’s dependent] . . . claims” and relies on Mentink to make up for this deficiency in Bond (Ans. 6).

FF 14. Mentink discloses “thermoplastic and/or elastomeric compositions and . . . a process for the preparation of these compositions” (Mentink ¶ 1).

FF 15. Examiner finds that Mentink discloses a thermoplastic formulation comprising a homogenous blend of thermoplastic starch, plasticizers (such as glycerin and polyethylene glycols) and additional water soluble polymers (such as polyvinyl alcohol, amorphous vinyl alcohols, ethylene vinyl acetate, and other vinyl alcohol polymers) (Ans. 6 (citing Mentink, Abstract; Mentink ¶¶ 13, 18, 150, and 153)).

FF 16. Examiner finds that Mentink discloses that “the thermoplastic starch is present in at least 25% of the final composition, with at least 8% plasticizer” (Ans. 6 (citing Mentink, claims)).

FF 17. Examiner finds that Mentink discloses that the components of the formulation are mixed and extruded at “temperatures are from 90°C-120°C” (Ans. 6 (citing Mentink ¶¶ 266–270)).

FF 18. Examiner finds that although the combination of Bond and Mentink make obvious “an extruded water-soluble article comprising water-soluble polymer and a thermal active agent, the combination [of Bond and Mentink] is silent [as] to the configuration of . . . such compounds into formulations that exhibit thermal effects on the user’s skin” and relies on Oji to make up for this deficiency in the combination of Bond and Mentink (Ans. 7).

FF 19. Oji discloses a patch comprising “1-menthol and ethanol are incorporated as a reagent for providing [a] . . . cooling effect [on a user’s skin] . . . into a paste composition comprising a water-soluble high-molecular-weight compound[, such as polyvinyl alcohol], a polyhydric alcohol[, such as glycerol, polyethylene glycol, or a mixture thereof,] and water” (*see* Oji 3–4; *see generally* Ans. 7).

ANALYSIS

Based on the combination of Bond, Mentink, and Oji, Examiner concludes that, at the time Appellant’s invention was made, it would have been *prima facie* obvious to incorporate Mentink’s vinyl polymers and Oji’s menthol and ethanol into Bond’s formulation to obtain a film that provides an actual or perceived thermal effect on a user’s skin (*see* Ans. 6–7; *see* FF 1–19). In reaching the forgoing conclusion, Examiner recognizes that although Bond suggests the components of Appellant’s claimed article, i.e.

film, Bond is silent as to the water dissolution speed of such a film (*see* Ans. 6). Examiner reasons, however, that because the water dissolution speed is a direct feature, or property, of film's composition and Bond discloses a film comprising the same components as Appellant's film, a person of ordinary skill in this art would have expected Bond's film to have the same water dissolution speed as Appellant's claimed invention (*see* Ans. 6; FF 1–13; *see also In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (“Products of identical chemical composition can not have mutually exclusive properties.”)).

Claim 1:

Appellant contends that, notwithstanding Examiner's assertion to the contrary, “Bond does not teach an identical chemical structure to the film Appellant specifies in independent claim 1, and the differences of Bond prevent the structure of Bond from performing in the same manner as specified by Appellant's claim 1” (Br. 4). Specifically, Appellant contends that “[a]lthough Bond teaches some of the same components as Appellant specifies in independent claim 1, such as a thermoplastic polymer and plasticizer,” “Bond is directed at films composed of a starch-polymer-wax-oil composition” and, because of “the insoluble nature of the wax and oil” in Bond's formulation, it “is not water-soluble” and this “prevents the alkali metal salt filler materials of Bond . . . from being configured to be released when the film is wetter” (Br. 4–5). For these reasons, Appellant contends that Bond's “filler materials . . . cannot serve as a thermal active agent that is 'configured to be released when the extruded water-soluble article is wetted to provide either an actual or perceived thermal effect on a user's skin’,” as

required by Appellant's claim 1 (Br. 5). Appellant further contends that "Mentink and Oji do not cure these deficiencies of Bond" (Br. 5).

We are not persuaded.

As Examiner explains, "the oil and wax components [of Bond's film] are present as discreet particles" (Ans. 8 (citing Bond ¶ 11)). We agree. Bond discloses that "[t]he oil, wax, or combination thereof can be dispersed within the thermoplastic starch and thermoplastic polymer such that the oil, wax, or combination has a droplet size of less than 10 μm ," wherein, as Bond explains, "the larger the droplet size the lower the dispersion of the oil or wax within the thermoplastic polymer and/or thermoplastic starch" (FF 11–12).

We also agree with Examiner's reasoning that because Bond's oil and wax components are dispersed in a composition that falls within the scope of Appellant's claimed invention, "the film, when extruded, would be a water soluble article with discreet water-insoluble components" and, although portions of the film would not be soluble, "the film itself would dissolve, leaving the insoluble portions such that those portions would no longer be the article" (Ans. 8–9).

Claim 10:

Appellant contends "that Bond does not teach or suggest that the film including an oil-wax composition can have a dissolution speed of the claimed rate of Appellant's dependent claim 10" (Br. 6). Stated differently, Appellant contends that

As noted above in the discussion with respect to independent claim 1 . . . the film of Bond will not be water soluble due to its oil-wax composition. Certainly, by no means does Bond teach

or suggest that the film can have a dissolution speed from 5 seconds to 30 minutes as Appellant specifies in dependent claim 10, and the Office has not provided any rationale for how such an oil/wax based composition could provide such a dissolution speed.

(Br. 6.)

We are not persuaded by Appellant’s contentions for the same reasons articulated by the Examiner (Ans. 8–9) and discussed above. In this regard, we note that Appellant’s claimed invention does not exclude dispersed droplets of oil and wax from its composition. Thus, we find no error in Examiner’s conclusion that Bond discloses an article that falls within the scope of Appellant’s claimed invention (*see* Ans. 8 (Examiner finds that Bond’s “thermoplastic starch, polymer and plasticizer [are] all identical to those of the instant claims”); *see* FF 1–13). “[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990). Appellant failed to establish an evidentiary basis on this record to support a conclusion that Appellant’s article is distinct from the film disclosed by Bond.

Claim 14:

For the reasons set forth above, with respect to Appellant’s claim 1, we are not persuaded by Appellant’s contention that “Bond does not teach any thermal active agents that are configured to be released when the film is wetted because the film Bond teaches is not water-soluble” and, thus, fails to disclose the subject matter of Appellant’s claim 14, reproduced above (*see* Br. 6–7).

CONCLUSION

The preponderance of evidence relied upon by Examiner supports a conclusion of obviousness. The rejection of claims 1, 10, and 14 under 35 U.S.C. § 103(a) as unpatentable over the combination of Bond, Mentink, and Oji is affirmed. Claims 2–9, 11–13, and 15 are not separately argued and fall with claim 1.

Obviousness-type Double Patenting:

ISSUE

Does the preponderance of evidence relied upon by Examiner support a conclusion of obviousness-type double patenting?

ANALYSIS

Appellant’s claim 1, reproduced above, is representative.

Appellant does not contest the provisional rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1–11 and 15 of copending Application No. 15/032,235. Appellant also did not file a terminal disclaimer to moot this obviousness-type double patenting rejection. Instead, Appellant contends that because allowable subject matter has not be identified in this or the copending Applications, “any action by Appellant with regard to the present rejection is premature” (Br. 3).

“If a ground of rejection stated by the examiner is not addressed in the appellant’s brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it.” Manual of Patent Examining Procedure § 1205.02 (9th Ed., Rev. 08.2017 (Jan. 2018)).

Accordingly, the provisional obviousness-type double patenting rejection is summarily affirmed.

CONCLUSION

The preponderance of evidence relied upon by Examiner supports a conclusion of obviousness-type double patenting. The provisional rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1–11 and 15 of copending Application 15/032,235 is affirmed. Claims 2–15 are not separately argued and fall with claim 1.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–15	103	Bond, Mentink, Oji	1–15	
1–15		Nonstatutory Double Patenting, copending 15/032,235	1–15	
Overall Outcome			1–15	

TIME PERIOD FOR RESPONSE

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