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EXAMINER

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ELECTRONIC

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DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Summary

2. The Applicants argument and claim amendments received on 09/03/2025 are entered into the file. Currently, claims 1, 7, 8, 21, 24, 30, 31, 32, 34, 36, 38, 44, 46, 48, 49, 50, 51, 52, 53, 54, 56, 57 and 58 are amended; claims 11-20 are cancelled; claim 59 and 60 are new; resulting in claims 1-10 and 21-60 pending for examination.

Claim Rejections - 35 USC § 103

3. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

4. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having

ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating

obviousness or nonobviousness.

6. **Claims 24, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 56 and 57 are rejected under 35 U.S.C. 103 as being unpatentable over Ota et al. (JP 2004-250040; machine translation via EPO provided; previously cited).**

7. **Regarding claims 24, 27, 32, 36, 41 and 44**, Ota et al. teaches a label for a container and a container with the label on the exterior surface of the container, the label comprising a first light shielding layer (high opacity layer; 3a) on a first surface of a heat shrinkable film (1) and a second light shielding layer (light blocking ink layer; 3b) on the first light shielding layer (high opacity layer) (pg. 2-5, 8-10, Figure 2). The first and second light shielding layers are comprised of a light shielding substance (light blocking component) that reflects, diffuses or scatters ultraviolet light and/or visible light, such as powders of titanium dioxide, aluminum, aluminum silicate, calcium carbonate, alumina, and combinations thereof in a binder solution (i.e. ink) (pg. 3-4). Ota et al. specifically teaches an example the light shielding layers are comprised of a mixture of titanium

dioxide (white pigment) and aluminum powder (one or more metals) that provides maximum light shielding properties for both the ultraviolet and visible light (i.e. encompassing 200-900nm wavelengths) (pg. 5). Ota et al. teaches that the heat shrinkable film is comprised of shrinkable films including polyester, polystyrene, polyvinylchloride, polyethylene, polypropylene, ethylene vinyl acetate base heat shrinkable films and has a thickness of 20 to 120 μ m (pg. 3), which overlaps with the claimed range of 30 to 100 μ m. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

8. The limitations reciting “the light blocking ink layer configured to block at least 80% of incident light having wavelengths in a range of 200nm to 900 nm” and “recyclable” are considered functional language related to the intended use of the product and is accorded limited weight as the language does not further limit the structure or the process. The aforementioned limitations are functional limitations that are met by the structure of the prior art. There does not appear to be a difference between the structure of Ota et al. and the structure of the claimed invention of the instant application. Ota et al. teaches similar materials for the heat shrink film and the first and second light shielding layers as the heat shrink film, high opacity layer and light blocking composition of the instant application (see pg-pub [0059-0099]), and further teaches that the first and second light shielding layers, are comprised of a light shielding substance (light blocking particulate) that reflects, diffuses or scatters ultraviolet light and/or visible light (pg. 2-5). Therefore, the heat shrink label taught by Ota et al. would perform the same function in the same manner as the instant claims.

9. **Regarding claims 28, 29, 42 and 43**, Ota et al. in view of Williams et al. teaches all the limitations of claims 24 and 36 above, and Ota et al. further teaches a printed design layer (indicia; 2) is formed on the outer surface of the heat shrinkable film (1), wherein, as shown by Figure 2, the first light shielding layer (high opacity layer; 3a) is disposed between the printed design layer (indicia; 2) and the second light shielding layer (light blocking composition; 3b) (pg. 2-5, 8-10).

10. **Regarding claims 30, 31, 48, 49, 50, 51, 56 and 57**, Ota et al. teaches all the limitations of claims 24 and 36 above, and further teaches that the heat shrinkage rate of the heat shrinkable film is preferably 55-80% in the circumferential direction of the bottle to which it is applied (pg. 3). Furthermore, as Ota et al. teaches the same materials used for the heat shrink film and the high opacity layer and light blocking composition of the instant application, it would perform in a similar manner.

11. **Regarding claims 33 and 45**, Ota et al. in view of Williams et al. teaches all the limitations of claims 24 and 36 above, Ota et al. further teaches that the thickness of the first light shielding layer (high opacity layer; 3a) and second light shielding layer (light blocking composition; 3b) is in the preferable range of 8-15 μ m, wherein if the thickness is less than 3 μ m, it is difficult to maintain the low transmittance of light and if the thickness is about 20 μ m, it will interfere with the thermal shrinkage of the film (pg. 5-6).

While the reference does not expressly teach the ppr ranges recited, such a modification would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the amounts of second light shielding layer (light blocking composition; 3b) such that it falls within the ranges recited

by claims 33 and 45 while also being present at an amount sufficient to provide the desired reduction in light transmittance.

12. **Regarding claims 34, 38 and 46**, the limitations reciting “wherein the light blocking ink layer and the white pigment of the high opacity layer is configured to be removed from the recyclable shrink label in a caustic wash of a recycling process” in claim 34, “wherein the light blocking ink layer is configured to be removable in a caustic wash to preserve recyclability of the container” in claim 38 and “wherein the light blocking ink layer and the white pigment of the high opacity layer is configured to be removed from the recyclable shrink label after a caustic wash cycle of a recycling process” are directed to limitations describing a method of using and/or intended use of the claimed label, and does not determine the patentability of the product, unless the method produces a structural feature of the product. The method of using the product is not germane to the issue of patentability of the product itself, unless Applicant presents evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. See MPEP § 2113. Furthermore, there does not appear to be a difference between the prior art structure and the structure used in the claimed method because Ota et al. discloses the structure of claims 24 and 36 as described above. Furthermore, Ota et al. utilizes similar materials to those disclosed by the instant application (see pg-pub [0059-0099]), and therefore, would perform the same function in the same manner as the instant application.

13. **Regarding claims 37**, Ota et al. teaches all the limitations of claim 36 above, and Ota et al. further teaches that the surface (first surface) of the heat shrink film comprising the first and second light shielding layers is arranged to face the container,

wherein the first and second light shielding layers are disposed between the heat shrink film and the external surface of the container (pg. 10).

14. **Claims 52 and 58 are rejected under 35 U.S.C. 103 as being unpatentable over Ota et al. (JP 2004-250040; machine translation via EPO provided; previously cited) in view of Tsuchida et al. (US 2006/0275592; previously cited).**

15. **Regarding claims 52 and 58**, Ota et al. teaches all the limitations of claims 36 and 24 above, however, the references are silent as to the particle size of the light shielding substance (light blocking component) being within the range of 0.1 μm to 25 μm .

16. Tsuchida et al. is in the same field of endeavor directed to heat shrink labels, teaching a heat shrink label comprised of a core layer (2), a white front layer (1) and a white back layer (4) (Figure 1; [0004-0010, 0015, 0021-0022, 0024]). Tsuchida et al. further teaches that the white front layer (1) and white back layer comprise a white pigment (particulate) such as titanium dioxide (light blocking component), wherein the average particle diameter of the white pigment is about 0.01 μm to about 10 μm , wherein if the average particle diameter is less than 0.01 μm , dispersibility may be deteriorated and if it exceeds 10 μm , the film may have a rough surface and show a deteriorated appearance ([0022]). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. The range of about 0.01 μm to about 10 μm taught by Tsuchida et al. overlaps the range of 0.1 μm to 100 μm as recited by claim 20, or 0.1 μm to 25 μm as recited by claim 46; therefore a *prima facie* case of obviousness exists.

17. As both Ota et al. and Tsuchida et al. teach heat shrinkable labels, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize the average particle diameter range of about 0.01 μm to about 10 μm of the white pigment taught by Tsuchida et al. for the light shielding substance (light blocking particulate) of the label taught by Ota et al. in view of Williams et al. as Tsuchida et al. teaches that average particle diameter is less than 0.01 μm , dispersibility may be deteriorated and if it exceeds 10 μm , the film may have a rough surface and show a deteriorated appearance ([0022]).

18. Claims 1-10, 21, 22, 23, 25, 26, 35, 39, 40, 47, 53, 54, 59 and 60 are rejected under 35 U.S.C. 103 as being unpatentable over Ota et al. (JP 2004-250040; machine translation via EPO provided; previously cited) in view of Williams et al. (US 2022/0389184; previously cited).

19. Regarding claims 1, 2, 3, 5, 9 and 23, Ota et al. teaches a label for a container, the label comprising a first light shielding layer (high opacity layer; 3a) on a heat shrinkable film (1) and a second light shielding layer (light blocking ink layer; 3b) on the first light shielding layer (high opacity layer) (pg. 2-5, 8-10, Figure 2). The first and second light shielding layers are comprised of a light shielding substance (light blocking component) that reflects, diffuses or scatters ultraviolet light and/or visible light, such as powders of titanium dioxide, aluminum, aluminum silicate, calcium carbonate, alumina, and combinations thereof in a binder solution (i.e. ink) (pg. 3-4). Ota et al. specifically teaches an example the light shielding layers are comprised of a mixture of titanium

dioxide and aluminum powder that provides maximum light shielding properties for both the ultraviolet and visible light (i.e. encompassing 200-900nm wavelengths) (pg. 5). Ota et al. teaches that the heat shrinkable film is comprised of shrinkable films including polyester, polystyrene, polyvinylchloride, polyethylene, polypropylene, ethylene vinyl acetate base heat shrinkable films and has a thickness of 20 to 120 μ m (pg. 3), which overlaps with the claimed range of 15 to 100 μ m. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

20. The limitations reciting “the light blocking ink layer configured to block at least 80% of incident light having wavelengths in a range of 200nm to 900 nm” and “recyclable” are considered functional language related to the intended use of the product and is accorded limited weight as the language does not further limit the structure or the process. Ota et al. teaches similar materials for the heat shrink film and the first and second light shielding layers as the heat shrink film, high opacity layer and light blocking composition of the instant application, and further teaches that the first and second light shielding layers, are comprised of a light shielding substance (light blocking particulate) that reflects, diffuses or scatters ultraviolet light and/or visible light (pg. 3-5). Therefore, the heat shrink label taught by Ota et al. would be capable of performing in the manner recited by the instant claims.

21. While Ota et al. teaches that the heat shrink film is a polyester based heat shrinkable film, the reference does not expressly teach that the heat shrink film is PET or PETG. Williams et al. teaches an recyclable ink printed label, wherein polymeric shrink wrap labels includes PET or PETG as commonly known shrink film used for

labels ([0084-0085]). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize the PET or PETG heat shrink film taught by Williams et al. as the polyethylene based heat shrink film in the label taught by Ota et al., as Williams et al. teaches PET and PETG are commonly known shrink films used for shrinkable labels.

22. **Regarding claims 4 and 6**, Ota et al. in view of Williams et al. teaches all the limitations of claims 1 and 5 above, and Ota et al. further teaches a printed design layer (indicia; 2) is formed on the outer surface of the heat shrinkable film (1), wherein, as shown by Figure 2, the first light shielding layer (high opacity layer; 3a) is disposed between the printed design layer (indicia; 2) and the second light shielding layer (light blocking composition; 3b) (pg. 2-5, 8-10).

23. **Regarding claims 7, 8, 53 and 54**, Ota et al. in view of Williams et al. teaches all the limitations of claim 1 above, and further teaches that the heat shrinkage rate of the heat shrinkable film is preferably 55-80% in the circumferential direction of the bottle to which it is applied (pg. 3). Furthermore, as Ota et al. teaches the same materials used for the heat shrink film and the high opacity layer and light blocking composition of the instant application, it would perform in a similar manner.

24. **Regarding claim 10**, Ota et al. in view of Williams et al. teaches all the limitations of claim 1 above, Ota et al. further teaches that the thickness of the first light shielding layer (high opacity layer; 3a) and second light shielding layer (light blocking composition; 3b) is in the preferable range of 8-15 μ m, wherein if the thickness is less than 3 μ m, it is difficult to maintain the low transmittance of light and if the thickness is about 20 μ m, it will interfere with the thermal shrinkage of the film (pg. 5-6). While the

reference does not expressly teach the ppr ranges recited, such a modification would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the amounts of second light shielding layer (light blocking composition; 3b) such that it falls within the ranges recited by claim 10 while also being present at an amount sufficient to provide the desired reduction in light transmittance.

25. Regarding claim 21, the limitation reciting “wherein the light blocking ink layer and the white pigment of the high opacity layer is configured to be removed from the recyclable shrink label in a caustic wash of a recycling process” describe a method of using and/or intended use of the claimed label, and does not determine the patentability of the product, unless the method produces a structural feature of the product. The method of using the product is not germane to the issue of patentability of the product itself, unless Applicant presents evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. See MPEP § 2113. Furthermore, there does not appear to be a difference between the prior art structure and the structure used in the claimed method because Ota et al. discloses the structure of claims 24 and 36 as described above. Furthermore, Ota et al. in view of Williams et al. utilize similar materials to those disclosed by the instant application (see pg-pub [0059-0099]), and therefore, would perform the same function in the same manner as the instant application.

26. Regarding claim 22, Ota et al. in view of Williams et al. teaches all the limitations of claim 1 above, and Williams et al. further teaches that to ensure the printed label can be handled, fitted, shipped, stacked, or rubbed against adjacent containers, the dried ink layer has a coefficient of friction at or below 0.3 ([0078]). In the

case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

27. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention, to modify the second light shielding layer (light blocking ink layer; 3b) in the heat shrink label taught by Ota et al. to have a coefficient of friction at or below 0.3 as taught by Williams et al. to ensure the printed label can be handled, fitted, shipped, stacked, or rubbed against adjacent containers without affecting the printing.

28. **Regarding claims 25, 26, 39, 40, 59 and 60**, Ota et al. teaches all the limitations of claims 24 and 36 above, and while Ota et al. teaches that the heat shrink film is a polyester based heat shrinkable film, the reference does not expressly teach that the polyester heat shrink film is PET or PETG.

29. Williams et al. teaches an recyclable ink printed label, wherein polymeric shrink wrap labels includes PET or PETG as commonly known shrink film used for labels ([0084-0085]).

30. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize the PET or PETG heat shrink film taught by Williams et al. as the polyethylene based heat shrink film in the label taught by Ota et al., as Williams et al. teaches PET and PETG are commonly known shrink films used for shrinkable labels.

31. **Regarding claims 35 and 47**, Ota et al. teaches all the limitations of claims 24 and 36 above, however, the reference does not expressly teach that the light blocking layer has a kinetic coefficient of less than 0.22.

32. Williams et al. teaches an recyclable ink printed label, wherein polymeric shrink wrap labels includes PET or PETG as commonly known shrink film used for labels ([0084-0085]). Williams et al. further teaches that to ensure the printed label can be handled, fitted, shipped, stacked, or rubbed against adjacent containers, the dried ink layer has a coefficient of friction at or below 0.3 ([0078]). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

33. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention, to modify the second light shielding layer (light blocking ink layer; 3b) in the heat shrink label taught by Ota et al. to have a coefficient of friction at or below 0.3 as taught by Williams et al. to ensure the printed label can be handled, fitted, shipped, stacked, or rubbed against adjacent containers without affecting the printing.

34. Claim 55 is rejected under 35 U.S.C. 103 as being unpatentable over Ota et al. (JP 2004-250040; machine translation via EPO provided) in view of Williams et al. (US 2022/0389184) and further in view of Tsuchida et al. (US 2006/0275592; previously cited).

35. **Regarding claim 55**, Ota et al. in view of Williams et al. teach all the limitations of claim 1, however, the references are silent as to the particle size of the light shielding substance (light blocking component) being within the range of 0.1 μ m to 25 μ m.

36. Tsuchida et al. is in the same field of endeavor directed to heat shrink labels, teaching a heat shrink label comprised of a core layer (2), a white front layer (1) and a

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white back layer (4) (Figure 1; [0004-0010, 0015, 0021-0022, 0024]). Tsuchida et al. further teaches that the white front layer (1) and white back layer comprise a white pigment (particulate) such as titanium dioxide (light blocking component), wherein the average particle diameter of the white pigment is about 0.01 μm to about 10 μm , wherein if the average particle diameter is less than 0.01 μm , dispersibility may be deteriorated and if it exceeds 10 μm , the film may have a rough surface and show a deteriorated appearance ([0022]). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. The range of about 0.01 μm to about 10 μm taught by Tsuchida et al. overlaps the range of 0.1 μm to 100 μm as recited by claim 20, or 0.1 μm to 25 μm as recited by claim 46; therefore a *prima facie* case of obviousness exists.

37. As both Ota et al. and Tsuchida et al. teach heat shrinkable labels, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize the average particle diameter range of about 0.01 μm to about 10 μm of the white pigment taught by Tsuchida et al. for the light shielding substance (light blocking particulate) of the label taught by Ota et al. in view of Williams et al. as Tsuchida et al. teaches that average particle diameter is less than 0.01 μm , dispersibility may be deteriorated and if it exceeds 10 μm , the film may have a rough surface and show a deteriorated appearance ([0022]).

38. **Claims 1-10, 21-51, 53-54, 56, 57, 59 and 60 are rejected under 35 U.S.C. 103 as being unpatentable over Williams et al. (US 2022/0389184) in view of Ota et al. (JP 2004-250040; machine translation via EPO provided).**

39. **Regarding claims 1, 2, 3, 5, 9, and 23,** Williams et al. teaches an ink and label combination to facilitate recycling of both the label and the container to which the label is applied (i.e. recyclable label), wherein multiple ink layers (high opacity layer and light blocking layer) are printed or coated onto a PET or PETG shrink wrap label (heat shrink film), wherein the multiple ink layers (high opacity layer and light blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking component/particulate) ([0002-0010, 0024-0062, 0069-0085]).

40. The limitation reciting “the light blocking ink layer configured to block at least 80% of incident light having wavelengths in a range of 200nm to 900 nm” is considered functional language related to the intended use of the product and is accorded limited weight as the language does not further limit the structure or the process. Williams et al. teaches similar materials for the heat shrink film multiple ink layers as the heat shrink film, high opacity layer and light blocking composition of the instant application, therefore, the heat shrink label taught by Williams et al. would be capable of performing in the manner recited by the instant claims.

41. Williams et al. does not expressly teach the thickness of the shrink wrap label (heat shrink film). Ota et al. is in the same field of endeavor, heat shrinkable labels, and teaches a wraparound heat shrinkable label for a bottle, the heat shrinkable label

comprising a first light shielding layer (high opacity layer; 3a) on a heat shrinkable film (1) and a second light shielding layer (light blocking composition; 3b) on the first light shielding layer (high opacity layer) (pg. 2-5, 8-10, Figure 2). The first and second light shielding layers are comprised of a light shielding substance (light blocking particulate) that reflects, diffuses or scatters ultraviolet light and/or visible light, including powders of metals, metal oxides, carbon black, types of mica or reflective pigments in a binder solution (i.e. ink) (pg. 3-4). Specific materials used by Ota et al. as the a light shielding substance (light blocking particulate) include titanium dioxide, aluminum silicate, calcium carbonate, alumina, and combinations thereof (pg. 4). Ota et al. teaches that the thickness of the heat shrinkable film will vary depending on the material and size of the bottle to which the label is applied, but is generally in the range of 20 to 120 μ m (pg. 3), which overlaps with the claimed range of 30 to 100 μ m. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

42. As both Williams et al. and Ota et al. are directed to heat shrinkable films with ink layers applied thereon, it would have been obvious to one of ordinary skill in the art to modify the thickness of the label taught by William’s et al. to fall within the range taught by Ota et al. as Ota et al. teaches such thicknesses are generally used for heat shrink labels.

43. Regarding claims 4 and 6, Williams et al. in view of Ota et al. teaches all the limitations of claims 1 and 5 above, and Williams et al. further teaches that the ink layers can be present in multiple layers, such as up to 14 layers ([0074]). As stated above, Williams et al. teaches the multiple ink layers (high opacity layer and light

blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking particulate) ([0002-0010, 0024-0062, 0069-0085]).

44. Therefore, it would have been obvious to one of ordinary skill in the art to provide additional ink layers (indicia) as an obvious matter of design choice based upon the desired visual appearance of the resultant shrink wrap label. Furthermore, it would have been obvious to orient the additional layers such that they were in a stacked arrangement as recited by the claims.

45. **Regarding claims 7, 8, 53 and 54**, Williams et al. in view of Ota et al. teaches all the limitations of claim 1 above. While Williams et al. teaches a heat shrink film comprised of PET or PETG ([0002-0010, 0024-0062, 0069-0085]). Williams et al. does not expressly teach that the heat shrink film or heat shrink label is configured to shrink or contract in a transverse direction by about 1% to about 90% when heated to 100°C as recited by claims 7, 8, 53 and 54, however, such a property would inherently be present in the heat shrink film of Williams et al. Both Williams et al. and the instant application teach a heat shrink film of PET or PETG and an ink layer comprised of inorganic pigments such as titanium dioxide as stated in the rejection of claim 20 above. As stated in MPEP 2112.01(II), it has been held that product of identical composition cannot have mutually exclusive properties, therefore the heat shrink film and heat shrink label taught by Williams et al. would inherently have the heat shrinkable properties recited by the claims.

46. Regarding claim 10, Williams et al. in view of Ota et al. teach all the limitations of claim 1 above, however, Williams et al. does not expressly teach that the multiple ink layers (high opacity layer and light blocking layer) are applied in an amount of 0.5 ppr to 25ppr and the pigment is present in an amount of 0.1ppr to 10ppr of the ink layer. Such a modification would have been obvious to one of ordinary skill in the art based upon the desired amount of coloration provided on and the desired visual effect of the resultant heat shrink label.

47. Regarding claim 21, the limitation reciting “ wherein the light blocking ink layer and the white pigment of the high opacity layer is configured to be removed from the recyclable shrink label in a caustic wash of a recycling process” describe a method of using and/or intended use of the claimed label, and does not determine the patentability of the product, unless the method produces a structural feature of the product. The method of using the product is not germane to the issue of patentability of the product itself, unless Applicant presents evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. See MPEP § 2113. Furthermore, there does not appear to be a difference between the prior art structure and the structure used in the claimed method because Williams et al. in view of Ota et al. discloses the structure of claims 1 and 5 as described above. Furthermore, Williams et al. in view of Ota et al. utilize similar materials to those disclosed by the instant application (see pg-pub [0059-0099]), and therefore, would perform the same function in the same manner as the instant application.

48. Regarding claim 22, Williams et al. in view of Ota et al. teaches all the limitations of claim 1 above, and Williams et al. further teaches that to ensure the

printed label can be handled, fitted, shipped, stacked, or rubbed against adjacent containers, the dried ink layer has a coefficient of friction at or below 0.3 ([0078]). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

49. **Regarding claims 24, 25, 26, 27, 32, 36, 39, 40, 41, 44, 59 and 60,** Williams et al. teaches an ink and label combination to facilitate recycling of both the label and the container to which the label is applied (i.e. recyclable label), wherein multiple ink layers (high opacity layer and light blocking layer) are printed or coated onto a PET or PETG shrink wrap label (heat shrink film), wherein the multiple ink layers (high opacity layer and light blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking component/particulate) ([0002-0010, 0024-0062, 0069-0085]). While Williams et al. teaches multiple inorganic colorants used for the multiple ink layers, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize any of the aforementioned pigments based on the desired visual appearance of the resultant label, including titanium dioxide or a white pigment in one of the layers should a white appearance be desired for the label.

50. Williams et al. does not expressly teach the thickness of the shrink wrap label (heat shrink film) or that the colorant for another one of the multiple ink layers including a metal. Ota et al. is in the same field of endeavor, heat shrinkable labels, and teaches a wraparound heat shrinkable label for a bottle, the heat shrinkable label comprising a first light shielding layer (high opacity layer; 3a) on a heat shrinkable film (1) and a

second light shielding layer (light blocking composition; 3b) on the first light shielding layer (high opacity layer) (pg. 2-5, 8-10, Figure 2). The first and second light shielding layers are comprised of a light shielding substance (light blocking particulate) that reflects, diffuses or scatters ultraviolet light and/or visible light, including powders of metals, metal oxides, carbon black, types of mica or reflective pigments in a binder solution (i.e. ink) (pg. 3-4). Specific materials used by Ota et al. as the a light shielding substance (light blocking particulate) include titanium dioxide, aluminum silicate, calcium carbonate, alumina, and combinations thereof (pg. 4). Ota et al. teaches that the thickness of the heat shrinkable film will vary depending on the material and size of the bottle to which the label is applied, but is generally in the range of 20 to 120 μ m (pg. 3), which overlaps with the claimed range of 30 to 100 μ m. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. Ota et al. further teaches that the light shielding material used in the light shielding layers can be metals oxides such as titanium dioxide and iron oxide, also taught by Williams et al., but can also include metals such as aluminum and copper ([0014]).

51. As both Williams et al. and Ota et al. are directed to heat shrinkable films with ink layers applied thereon, it would have been obvious to one of ordinary skill in the art to modify the thickness of the label taught by William's et al. to fall within the range taught by Ota et al. as Ota et al. teaches such thicknesses are generally used for heat shrink labels. Furthermore, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the inorganic pigments of another one of the ink layers taught by Williams et al. to include the metal particles such

as aluminum and copper as taught by Ota et al. as Ota et al. teaches the metals to be obvious variants to the metal oxides. Furthermore, it would have been an obvious modification based upon the desired visual appearance and coloration of the ink layers as an obvious design choice.

52. The limitation reciting “the light blocking ink layer configured for the recyclable shrink label to block at least 80% of incident light having wavelengths in a range of 200nm to 900 nm” recited by independent claims 24 and 36 are considered functional language related to the intended use of the product and is accorded limited weight as the language does not further limit the structure or the process. Williams et al. teaches similar materials for the heat shrink film multiple ink layers as the heat shrink film, high opacity layer and light blocking composition of the instant application, therefore, the heat shrink label taught by Williams et al. in view of Ota et al. would be capable of performing in the manner recited by the instant claims.

53. Regarding claims 28, 29, 42 and 43, Williams et al. in view of Ota et al. teaches all the limitations of claims 24 and 36 above, and Williams et al. further teaches that the ink layers can be present in multiple layers, such as up to 14 layers ([0074]). As stated above, Williams et al. teaches the multiple ink layers (high opacity layer and light blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking particulate) ([0002-0010, 0024-0062, 0069-0085]).

54. Therefore, it would have been obvious to one of ordinary skill in the art to provide additional ink layers (indicia) as an obvious matter of design choice based upon the

desired visual appearance of the resultant shrink wrap label. Furthermore, it would have been obvious to orient the additional layers such that they were in a stacked arrangement as recited by the claims.

55. Regarding claims 30, 31, 48, 49, 50, 51, 56 and 57, Williams et al. in view of Ota et al. teaches all the limitations of claims 24 and 36 above. While Williams et al. teaches a heat shrink film comprised of PET or PETG ([0002-0010, 0024-0062, 0069-0085]), Williams et al. does not expressly teach that the heat shrink film or heat shrink label is configured to shrink or contract in a transfer direction by about 1% to about 90% when heated to 100°C as recited by claims 30 and 31, however, such a property would inherently be present in the heat shrink film of Williams et al. Both Williams et al. and the instant application teach a heat shrink film of PET or PETG and an ink layer comprised of inorganic pigments such as titanium dioxide as stated in the rejection of claim 20 above. As stated in MPEP 2112.01(II), it has been held that product of identical composition cannot have mutually exclusive properties, therefore the heat shrink film and heat shrink label taught by Williams et al. would inherently have the heat shrinkable properties recited by the claims.

56. Regarding claims 33 and 45, Williams et al. in view of Ota et al. teach all the limitations of claims 24 and 36 above, however, Williams et al. does not expressly teach that the multiple ink layers (high opacity layer and light blocking layer) are applied in an amount of 0.5 ppr to 25ppr and the pigment is present in an amount of 0.1ppr to 10ppr of the ink layer. Such a modification would have been obvious to one of ordinary skill in the art based upon the desired amount of coloration provided on and the desired visual effect of the resultant heat shrink label.

57. Regarding claims 34, 38 and 46, the limitations reciting “ wherein the light blocking ink layer and the white pigment of the high opacity layer is configured to be removed from the recyclable shrink label in a caustic wash of a recycling process” in claim 34, “wherein the light blocking ink layer is configured to be removable in a caustic wash to preserve recyclability of the container” in claim 38 and “wherein the light blocking layer and the white pigment of the high opacity layer is configured to be removed from the recyclable shrink label after a caustic wash cycle of a recycling process” in claim 46 are directed to limitations describing a method of using and/or intended use of the claimed label, and does not determine the patentability of the product, unless the method produces a structural feature of the product. The method of using the product is not germane to the issue of patentability of the product itself, unless Applicant presents evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. See MPEP § 2113. Furthermore, there does not appear to be a difference between the prior art structure and the structure used in the claimed method because Williams et al. in view of Ota et al. discloses the structure of claims 24 and 36 as described above. Furthermore, Williams et al. in view of Ota et al. utilizes similar materials to those disclosed by the instant application (see pg-pub [0059-0099]), and therefore, would perform the same function in the same manner as the instant application.

58. Regarding claims 35 and 47, Williams et al. in view of Ota et al. teaches all the limitations of claims 24 and 36 above, and Williams et al. further teaches that to ensure the printed label can be handled, fitted, shipped, stacked, or rubbed against adjacent containers, the dried ink layer has a coefficient of friction at or below 0.3 ([0078]). In the

case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

59. **Regarding claim 37**, Williams et al. in view of Ota et al. teaches all the limitations of claim 36 above, and while Williams et al. does not expressly teach that the ink layers are disposed between the heat shrink film and the external surface of the container, such a modification would have been obvious to one of ordinary skill in the art based upon the desired use of the label. It is within the level of skill for an ordinary person in the art to print the ink layers on a surface of the heat shrink film that will face the container for enhanced protection against environmental elements.

60. **Claims 52, 55 and 58 are rejected under 35 U.S.C. 103 as being unpatentable over Williams et al. (US 2022/0389184) in view of Ota et al. (JP 2004-250040; machine translation via EPO provided) and further in view of Tsuchida et al. (US 2006/0275592; previously cited).**

61. **Regarding claims 52, 55 and 58**, Williams et al. in view of Ota et al. teach all the limitations of claims 1, 36 and 24, however, the references are silent as to the particle size of the inorganic colorants being within the range of 0.1 μm to 25 μm .

62. Tsuchida et al. is in the same field of endeavor directed to heat shrink labels, teaching a heat shrink label comprised of a core layer (2), a white front layer (1) and a white back layer (4) (Figure 1; [0004-0010, 0015, 0021-0022, 0024]). Tsuchida et al. further teaches that the white front layer (1) and white back layer comprise a white pigment (particulate) such as titanium dioxide (light blocking component), wherein the average particle diameter of the white pigment is about 0.01 μm to about 10 μm ,

wherein if the average particle diameter is less than 0.01 μm , dispersibility may be deteriorated and if it exceeds 10 μm , the film may have a rough surface and show a deteriorated appearance ([0022]). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. The range of about 0.01 μm to about 10 μm taught by Tsuchida et al. overlaps the range of 0.1 μm to 100 μm as recited by claim 20, or 0.1 μm to 25 μm as recited by claim 46; therefore a *prima facie* case of obviousness exists.

63. As both Williams et al. and Tsuchida et al. teach heat shrinkable labels, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize the average particle diameter range of about 0.01 μm to about 10 μm of the white pigment taught by Tsuchida et al. for the pigment of the multiple ink layers (high opacity layer and light blocking layer) of the label taught by Williams et al. in view of Ota et al. as Tsuchida et al. teaches that average particle diameter is less than 0.01 μm , dispersibility may be deteriorated and if it exceeds 10 μm , the film may have a rough surface and show a deteriorated appearance ([0022]).

Response to Arguments

Response-Claim Rejections - 35 USC § 112

64. The previous rejections of claims 21, 34, 38 and 46 under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the

invention are withdrawn due to Applicants amendments to the claims in the response filed 09/03/2025.

65. The amendments recite the intended use and/or process of using the claimed label, and have been treated as such in the office actions above.

Response-Claim Rejections - 35 USC § 103

66. Applicant's arguments filed 09/03/2025 have been fully considered but they are not persuasive.

67. In light of the Applicants amendments to the claims, independent claims 24 and 36, as well as dependent claims 27-34, 36-38, 41-46, 48-51, 56 and 57 are now rejected under 35 USC § 103 over Ota et al. alone, rather than the combination of Ota et al. in view of Williams. Arguments that are still deemed valid with respect to Ota et al. and the rejections of claims 24 and 36 will be addressed below.

68. Regarding the rejections of independent claim 1 over Ota et al. in view of Williams et al., the Applicant argues on pages 11-14 that that the office action disregards the functional language of claim 1, specifically the limitations “the light blocking layer configured to block at least 80% of incident light having wavelengths in the range of 250nm to 900nm”. The Applicant argues that it is insufficient that the heat shrink film of Ota et al. could be capable of performing in the manner claimed, but the correct inquiry should be whether Ota et al. is designed or configured to provide these attributes. These arguments are not persuasive.

69. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

70. Section 2173.05(g) of the MPEP discusses functional language, stating that “A claim term is functional when it recites a feature ‘by what it does rather than what it is’”, further stating that function claiming often involves the recitation of some structure followed by its function. Regarding the light blocking layer of independent claim 13, the structural requirements are:

- a. a light blocking ink layer comprising a light blocking ink component
- b. the light blocking ink component is comprised of at least one of: metal, metal oxide, a reflective pigment, carbon black, mica and combinations thereof.

71. The limitations reciting “configured to block at least 80% of incident light having wavelengths in the range of 205nm to 900nm” is functional language pertaining to the light blocking ink layer. Therefore, should a light blocking ink layer comprise the claimed components, it would function in the manner claimed.

72. Ota et al., as stated above, teaches first and second light shielding layers are comprised of a light shielding substance (light blocking component) that reflects, diffuses or scatters ultraviolet light and/or visible light, such as powders of titanium dioxide, aluminum, aluminum silicate, calcium carbonate, alumina, and combinations thereof in a binder solution (i.e. ink) (pg. 3-4). Ota et al. specifically teaches an example wherein the light shielding layers are comprised of a mixture of titanium dioxide (pigment) and aluminum powder (light blocking component) that provides maximum

light shielding properties for both the ultraviolet and visible light (i.e. encompassing 200-900nm wavelengths) (pg. 5). Ota et al. teaches that the first and second light shielding layers are formed by dispersing or dissolving various light shielding substances in a binder solution (i.e. ink) to prepare a coating liquid and applying the layer by printing or coating (pg. 4).

73. Ota et al. teaches similar materials for the heat shrink film and the first and second light shielding layers (see pgs. 3-5), as the heat shrink film, high opacity layer and light blocking composition of the instant application see pg-pub [0059-0099]). Thus Ota et al. would perform the same function in the same manner as the instant application.

74. Regarding the rejections of independent claim 1 over Ota et al. in view of Williams et al., the Applicant argues on pages 14-17 that one of ordinary skill in the art would not be motivated to combine Ota et al. with Williams et al., as the labels have completely different constructions.

75. In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

76. In this case, Ota et al. teaches a wraparound heat shrinkable label for a bottle, the heat shrinkable label comprising a first light shielding layer (high opacity layer; 3a) disposed on a heat shrinkable film (1) and a second light shielding layer (light blocking composition; 3b) on the first light shielding layer (high opacity layer) (pg. 2-5, 8-10, Figure 2). The first and second light shielding layers are comprised of a light shielding substance (light blocking particulate) that reflects, diffuses or scatters ultraviolet light and/or visible light, including powders of metals, metal oxides, carbon black, types of mica or reflective pigments in a binder solution (i.e. ink) (pg. 3-4). Specific materials used by Ota et al. as the a light shielding substance (light blocking particulate) include titanium dioxide, aluminum silicate, calcium carbonate, alumina, and combinations thereof (pg. 4). Ota et al. teaches that the thickness of the heat shrinkable film will vary depending on the material and size of the bottle to which the label is applied, but is generally in the range of 20 to 120 μ m (pg. 3), which overlaps with the claimed range of 30 to 100 μ m.

77. Ota et al. does not expressly teach that the heat shrinkable film is selected from PET or PETG. Williams et al. is in the same field of endeavor, heat shrinkable labels, and teaches a shrink wrap label of PET or PETG shrink wrap film having multiple ink layers disposed on the film, the multiple ink layers (high opacity layer and light blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking component/particulate) (claim 26-28,33,40; ([0002-0010, 0024-0062, 0069-0085])), as described in the rejection above. Williams et al. , however, does not expressly teach the thickness of the shrink wrap label (heat shrink film).

78. Both Williams et al. and Ota et al. teach heat shrink labels with multiple ink layer disposed thereon comprising similar components therein, therefore, it is maintained that it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to utilize the PET or PETG heat shrink film taught by Williams et al. as the polyethylene based heat shrink film in the label taught by Ota et al., as Williams et al. teaches PET and PETG are commonly known shrink films used for shrinkable labels.

79. Dependent claims 2-10, 21-23 and 53-55 depend from claim 1, and therefore, the rejections are maintained for the reasons expressed above.

80. Regarding the rejections of independent claim 24 over Ota et al. in view of Williams et al., the Applicant argues on pages 18-19 that that the office action disregards the functional language of claim 24, specifically the limitations “the light blocking layer configured to block at least 80% of incident light having wavelengths in the range of 250nm to 900nm”. The Applicant argues that it is insufficient that the heat shrink film of Ota et al. could be capable of performing in the manner claimed, but the correct inquiry should be whether Ota et al. is designed or configured to provide these attributes. These arguments are not persuasive.

81. As stated above with respect to claim 1, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

82. Section 2173.05(g) of the MPEP discusses functional language, stating that “A claim term is functional when it recites a feature ‘by what it does rather than what it is’, further stating that function claiming often involves the recitation of some structure followed by its function. Regarding the light blocking layer of independent claim 13, the structural requirements are:

- c. a light blocking ink layer comprising a light blocking ink component
- d. the light blocking ink component is comprised of at least one of: metal, metal oxide, a reflective pigment, carbon black, mica and combinations thereof.

83. The limitations reciting “configured to block at least 80% of incident light having wavelengths in the range of 205nm to 900nm” is functional language pertaining to the light blocking ink layer. Therefore, should a light blocking ink layer comprise the claimed components, it would function in the manner claimed.

84. Ota et al., as stated above, teaches first and second light shielding layers are comprised of a light shielding substance (light blocking component) that reflects, diffuses or scatters ultraviolet light and/or visible light, such as powders of titanium dioxide, aluminum, aluminum silicate, calcium carbonate, alumina, and combinations thereof in a binder solution (i.e. ink) (pg. 3-4). Ota et al. specifically teaches an example wherein the light shielding layers are comprised of a mixture of titanium dioxide (pigment) and aluminum powder (light blocking component) that provides maximum light shielding properties for both the ultraviolet and visible light (i.e. encompassing 200-900nm wavelengths) (pg. 5). Ota et al. teaches that the first and second light shielding layers are formed by dispersing or dissolving various light shielding substances in a

binder solution (i.e. ink) to prepare a coating liquid and applying the layer by printing or coating (pg. 4).

85. Ota et al. teaches similar materials for the heat shrink film and the first and second light shielding layers (see pgs. 3-5), as the heat shrink film, high opacity layer and light blocking composition of the instant application see pg-pub [0059-0099]). Thus Ota et al. would perform the same function in the same manner as the instant application.

86. Claim 24 no longer requires that the heat shrink film be comprised of PET, PETG or combinations thereof, and therefore Williams et al. is no longer used in the rejection of claim 24.

87. Dependent claims 25-35 and 56-57 depend from claim 24, and therefore, the rejections are maintained for the reasons expressed above.

88. Regarding the rejections of independent claim 36 over Ota et al. in view of Williams et al., the Applicant argues on pages 19-20 that that the office action disregards the functional language of claim 36, specifically the limitations “the light blocking layer configured to block at least 80% of incident light having wavelengths in the range of 250nm to 900nm”. The Applicant argues that it is insufficient that the heat shrink film of Ota et al. could be capable of performing in the manner claimed, but the correct inquiry should be whether Ota et al. is designed or configured to provide these attributes. These arguments are not persuasive for the same reasons expressed above with respect to claims 1 and 24.

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89. Claim 36 no longer requires that the heat shrink film be comprised of PET, PETG or combinations thereof, and therefore Williams et al. is no longer used in the rejection of claim 36.

90. Dependent claims 37-51 depend from claim 36, and therefore, the rejections are maintained for the reasons expressed above.

91. Regarding the rejections of independent claim 1 over Williams et al. in view of Ota et al., the Applicant argues on pages 21-22 that that the office action disregards the functional language of claim 1, specifically the limitations “the light blocking layer configured to block at least 80% of incident light having wavelengths in the range of 250nm to 900nm”. The Applicant argues that it is insufficient that the heat shrink film of Ota et al. could be capable of performing in the manner claimed, but the correct inquiry should be whether Ota et al. is designed or configured to provide these attributes. These arguments are not persuasive for the same reasons expressed above regarding claim 1.

92. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

93. Section 2173.05(g) of the MPEP discusses functional language, stating that “A claim term is functional when it recites a feature ‘by what it does rather than what it is’, further stating that function claiming often involves the recitation of some structure

followed by its function. Regarding the light blocking layer of independent claim 13, the structural requirements are:

- e. a light blocking ink layer comprising a light blocking ink component
- f. the light blocking ink component is comprised of at least one of: metal, metal oxide, a reflective pigment, carbon black, mica and combinations thereof.

94. The limitations reciting “configured to block at least 80% of incident light having wavelengths in the range of 205nm to 900nm” is functional language pertaining to the light blocking ink layer. Therefore, should a light blocking ink layer comprise the claimed components, it would function in the manner claimed.

95. The Applicants arguments are directed towards Ota et al., however, Williams et al. is used as the primary reference in this set of rejections and Ota et al. is used as a secondary reference to address the limitation pertaining to the thickness of the heat shrink film layer. As stated in the rejections above, Williams et al. teaches an ink and label combination wherein multiple ink layers (high opacity layer and light blocking layer) are printed or coated onto a PET or PETG shrink wrap label (heat shrink film), wherein the multiple ink layers (high opacity layer and light blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking component/particulate) ([0002-0010, 0024-0062, 0069-0085]).

96. Williams et al. teaches similar materials for the heat shrink film and the multiple ink layers (high opacity layer and light blocking layer) ([0002-0010, 0024-0062, 0069-0085]) as the heat shrink film, high opacity layer and light blocking composition of the

instant application see pg-pub [0059-0099]). Thus Williams et al. would perform the same function in the same manner as the instant application.

97. Regarding the rejections of independent claim 1 over Williams et al. in view of Ota et al., the Applicant argues on pages 22-24 that one of ordinary skill in the art would not be motivated to combine Ota et al. with Williams et al., as the labels have completely different constructions.

98. In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

99. In this case, Williams et al. teaches a shrink wrap label of PET or PETG shrink wrap film having multiple ink layers disposed on the film, the multiple ink layers (high opacity layer and light blocking layer) comprise inorganic colorants such as titanium dioxide (white pigment), iron oxide, chromium oxide, ferric ammonium, ferric oxide blacks, pigment black and pigment white (white pigment) (light blocking component/particulate) (claim 26-28,33,40; ([0002-0010, 0024-0062, 0069-0085]), as described in the rejection above. Williams et al. , however, does not expressly teach the thickness of the shrink wrap label (heat shrink film).

100. Ota et al. is in the same field of endeavor, heat shrinkable labels, and teaches a wraparound heat shrinkable label for a bottle, the heat shrinkable label comprising a first light shielding layer (high opacity layer; 3a) disposed on a heat shrinkable film (1) and a second light shielding layer (light blocking composition; 3b) on the first light shielding layer (high opacity layer) (pg. 2-5, 8-10, Figure 2). The first and second light shielding layers are comprised of a light shielding substance (light blocking particulate) that reflects, diffuses or scatters ultraviolet light and/or visible light, including powders of metals, metal oxides, carbon black, types of mica or reflective pigments in a binder solution (i.e. ink) (pg. 3-4). Specific materials used by Ota et al. as the a light shielding substance (light blocking particulate) include titanium dioxide, aluminum silicate, calcium carbonate, alumina, and combinations thereof (pg. 4). Ota et al. teaches that the thickness of the heat shrinkable film will vary depending on the material and size of the bottle to which the label is applied, but is generally in the range of 20 to 120 μ m (pg. 3), which overlaps with the claimed range of 30 to 100 μ m. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists.

101. Both Williams et al. and Ota et al. teach heat shrink labels with multiple ink layer disposed thereon comprising similar components therein, therefore, it is maintained that it would have been obvious to one of ordinary skill in the art to modify the thickness of the label taught by William’s et al. to fall within the range taught by Ota et al. as Ota et al. teaches such thicknesses are generally used for heat shrink labels.

102. Dependent claims 2-10, 21-23 and 53-55 depend from claim 1, and therefore, the rejections are maintained for the reasons expressed above.

103. With respect to the rejections of claim 24 over Williams et al. in view of Ota et al., the Applicant presents the same arguments as presented for the rejections of claim 1. These arguments are not persuasive for the same reasons presented above with respect to the rejections of claim 1 over Williams in view of Ota.

104. Dependent claims 25-35 and 56-57 depend from claim 24, and therefore, the rejections are maintained for the reasons expressed above.

105. With respect to the rejections of claim 36 over Williams et al. in view of Ota et al., the Applicant presents the same arguments as presented for the rejections of claim 1. These arguments are not persuasive for the same reasons presented above with respect to the rejections of claim 1 over Williams in view of Ota.

106. Dependent claims 37-51 depend from claim 36, and therefore, the rejections are maintained for the reasons expressed above.

Conclusion

107. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any nonprovisional extension fee (37 CFR 1.17(a)) pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

108. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA POWERS whose telephone number is (571)270-5624. The examiner can normally be reached Monday-Thursday, 10:00AM-3:00PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached at 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LAURA POWERS

Examiner

Art Unit 1785

/LAURA C POWERS/

Primary Examiner, Art Unit 1785