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**UNITED STATES DISTRICT COURT
DISTRICT OF UTAH**

RANIR LLC, a Michigan Limited Liability
Company,

Plaintiff,

vs.

CAO GROUP, INC., a Utah Company

Defendant.

**COMPLAINT FOR DECLARATORY
JUDGMENT**

Jury Demand

Case No.:

District Judge:

Magistrate Judge:

COMPLAINT FOR DECLARATORY JUDGMENT

Plaintiff Ranir LLC (“**Ranir**”) states as its claims for declaration of non-infringement and invalidity of certain patents owned by Defendant CAO Group, Inc. (“**CAO**” or “**Defendant**”) as follows:

THE PARTIES

1. Plaintiff Ranir is a Michigan limited liability company with its principal place of business located at 4701 East Paris Avenue Southeast, Grand Rapids, Michigan 49512. Ranir is an indirect, wholly owned subsidiary of Perrigo Company, an Irish public limited company with its principal place of business in Dublin, Ireland.

2. Defendant CAO is a Utah corporation with a principal place of business at 4628 West Skyhawk Drive, West Jordan, Utah 84084.

JURISDICTION AND VENUE

3. This Court has exclusive subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331, 1338(a), 2201, and 2202, and under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.* Furthermore, a real and immediate controversy between Ranir and CAO exists regarding whether Ranir’s products infringe certain patents alleged by CAO, and whether those patents are invalid.

4. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(b)(1).

5. This Court has personal jurisdiction over CAO. CAO is registered as a corporation in Utah, with its principle, regular and established place of business physically located within the District of Utah. Specifically, CAO’s principal place of business is located at 4628 West Skyhawk Drive, West Jordan, Utah 84084.

BACKGROUND

6. Ranir was founded in 1979 in Grand Rapids, Michigan.

7. At that time, Ranir's stated mission was to provide retail partners with store brand dental floss and manual toothbrushes. Ranir quickly grew to become the leader in both.

8. Eventually, Ranir expanded offerings to include teeth whitening products, power toothbrushes, and other oral healthcare products.

9. Today, Ranir is recognized as a leading global manufacturer of store brand private label consumer oral care products, including power and manual toothbrushes, teeth whiteners, dental floss, and interdental brushes.

Ranir has used the same Oral Care Layer in its teeth whitening products since 2002.

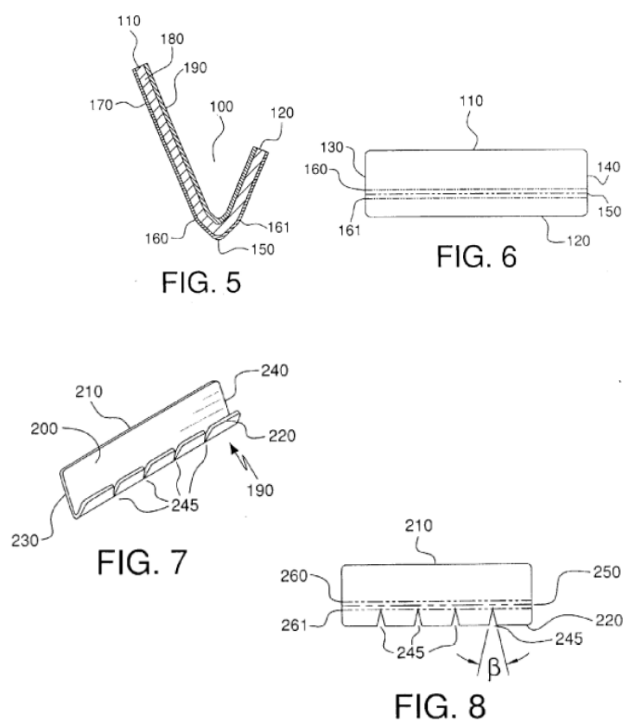
10. Prior to 2001, there were various teeth whitening oral care layers ("OCLs") available on the market. The majority of these OCLs were liquids or flowable gels.

11. The issue with such OCLs is that they are difficult to use and messy to handle, as they are considered a "wet" composition and are typically used twice per day for desired results. Given these issues, companies in the industry sought a more desirable product formulation.

12. No later than 2002, Ranir developed teeth whitening formulation and delivery system that relied on a delivery system that used flat sheets that was shaped to form wraps and an OCL that was a blend of three polymers and activated with a hydrogen peroxide solution.

13. On July 2, 2002, Ranir filed U.S. Appl. No. 10/187,666, which published as U.S. Pub. No. 2004/0005277 on January 8, 2004 (the "'277 Publication"). (Ex A.) The '277 Publication is directed toward a device and method for delivering an OCL. The devices are flat sheets—as

shown in Figures 6 and 8 below—that are then shaped to form wraps—as shown in Figures 5 and 7 below:



14. In addition to the above flat sheets and wraps used as a delivery method of the OCL, the '277 Publication also teaches the formulation to make the desired OCL:

TABLE 4

| <u>Oral Cure Layer Formulation</u> | | | |
|------------------------------------|----------------------------------|-----------------|-------------------|
| <u>Item</u> | <u>Brand Name</u> | <u>Supplier</u> | <u>Percentage</u> |
| Polyvinylpyrrolidone K90 (PVP90) | Kollidone 90 | BASF | 58% |
| Polyethylene Glycol 400 | Carbowax Polyethylene Glycol 400 | Union Carbide | 30% |
| Acrylic acid esters | Eudragit L100/55 | Rohm America | 12% |

15. As shown in Table 4 above, the OCL first used by Ranir (and still used today) is formed from an extruded blend of three polymers: polyvinylpyrrolidone (“PVP”), polyethylene glycol (“PEG”), and acrylic acid esters (also known as acrylates copolymer or methacrylic acid copolymer).

16. The disclosed OCL in the '277 Publication provides for the following polymer weight percentages: 58% PVP K90, 30% PEG 400 (also referred to as PEG 8), and 12% Eudragit L 100-55 (an acrylates copolymer).

17. This same OCL formulation is disclosed in later applications, including U.S. Pub. No. 2006/0099550, which published on May 11, 2006. (Ex. B.)

18. The OCL disclosed in the '277 Publication ensures that the OCL is processible and has end-use physical properties that are desirable to the user.

Ranir works with Corium to further develop and manufacture its teeth whitening product with the PVP-based OCL.

19. In 2004, Ranir signed an agreement with Corium Inc. (“Corium”) to further develop, formulate, and produce Ranir’s OCL.

20. The OCL manufactured by Corium on behalf of Ranir was referred to commercially as “Complex.” Complex is a PVP-based OCL that uses a 58-30-12 weight percent ratio as discussed above, which had been routinely disclosed in the prior art.

21. No later than 2004, Ranir sold teeth whitening products that utilized Complex, such as the Rite Aid Advance Whitening product shown below:



Date: **09/17/04** New Item Revised Item

HP Color Proof Colors are not exactly matched to Pantone Colors
Refer to your color book for exact Pantone Colors

22. As shown above, the products are depicted in the form of flat strips. “Patent Pending” is indicated, a 7-day treatment regime is noted, and the following ingredients are listed (including “PVP”, “PEG 400”, and “Methacrylic Acid Co-polymer”):

INGREDIENTS: PVP, Water, PEG 400, Methacrylic Acid Co-polymer, Hydrogen Peroxide, Sodium Pyrophosphate, Sodium Stannate, Disodium EDTA.

23. Another example of packaging art from 2004 is shown below:

(Space intentionally left blank)



24. As shown above, the products are in the form of flat strips (see instruction images) and are referred to as a “film.” “Patent Pending” is once again indicated, a 14-day treatment regime is noted, and the following ingredients are listed (including “PVP”, “PEG 400”, and “Methacrylic Acid Co-polymer”):

**INGREDIENTS: PVP, PEG 400,
 Water, Methacrylic Acid
 Co-polymer, Hydrogen Peroxide,
 Disodium EDTA, Sodium Stannate,
 Sodium Pyrophosphate.**

Corium and Topchiev patents and patent applications disclose and teach the PVP-based OCL layer formulation and manufacture.

25. Corium has several patents and patent applications directed toward pressure sensitive adhesives (“**PSAs**”), hydrogels, and bio-adhesives.

26. Many of Corium’s patent filings and non-patent literature publications reference authors and inventors are associated with A.V. Topchiev Institute of Petrochemical Synthesis (“**Topchiev**”).

27. Topchiev is an academic institute with a particular focus on petrochemistry and oil refinery, polymers, material science, and membrane technology.

28. Corium and Topchiev have filed (and continue to file) patent applications in this space.

29. For example, U.S. Patent No. 6,576,712, which published on June 10, 2003 (the “**’712 Patent**”) focuses exclusively on the interplay between PVP and PEG, further teaching the use of Eudragit E-100—the exact components used in Ranir’s OCL. (Ex C.)

30. Additionally, Corium and Topchiev’s U.S. Appl. No. 10/137,664 filed on May 1, 2002 (the “**’664 Application**”), which published as U.S. Pub. No. 2003/0170308 on September 11, 2003 (the “**’308 Publication**”), is directed toward a hydrogel composition and includes OCL blends of PVP 90, PEG 400, and Eudragit L100-55—the same components used in Ranir’s OCL. (Ex D.)

31. In fact, the ’308 Publication discloses the exact polymers in nearly the exact same ratio as Ranir’s OCL:

EXAMPLE 18

[0310] Four hydrogel compositions (designated 12-SP-104, 12-SP-113, 12-SP-115, and 12-SP-117) composed entirely of a continuous hydrophilic phase were prepared containing the following components, using a melt extrusion process as described in Example 3:

TABLE 2

| Formulation | Weight Percent | | |
|-------------|----------------|---------|------------------|
| | PVP 90 | PEG 400 | Eudragit L100-55 |
| 12-SP-104 | 59.67 | 35.44 | 4.91 |
| 12-SP-113 | 56.31 | 35.47 | 8.22 |
| 12 SP-115 | 54.38 | 30.62 | 15 |
| 12-SP-117 | 56.7 | 35.53 | 7.76 |

32. On February 5, 2003, Corium and Topchiev filed U.S. Appl. No. 10/359,548 (the “**548 Application**”), which published as U.S. Pub. No. 2003/0152528 on August 14, 2003, which is a continuation-in-part application of the ’664 Application. (the “**528 Publication**”) (Ex. E.) The ’528 Publication is directed toward hydrogel compositions for tooth whitening, and includes OCL blends of PVP 90, PEG 400, and Eudragit L100-55—again, the same components used in Ranir’s OCL.

33. Indeed, the ’528 Publication discloses the same OCL chemicals in the same ratio as the ’277 Publication:

(Space intentionally left blank)

Example 1

[0138] Preparation of Solid Composition

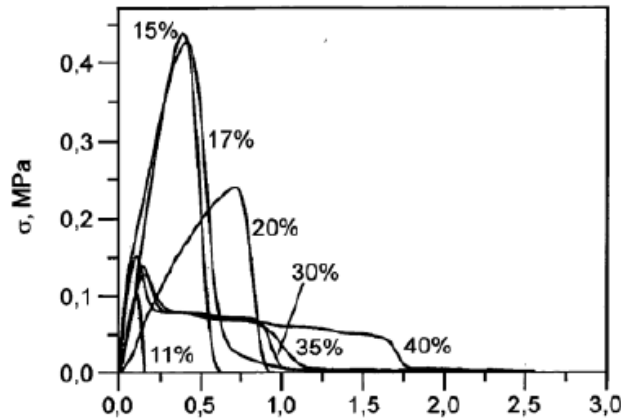
[0139] One embodiment of a composition for tooth whitening was prepared from the following ingredients using a melt extrusion process:

| | |
|-----------------------------------|---------|
| Eudragit L100-55 | 9 wt % |
| PVP | 44 wt % |
| PEG | 22 wt % |
| Hydrogen peroxide | 6 wt % |
| Water, stabilizers, pH modulators | 19 wt % |

[0140] The ingredients were melt processed in a Brabender single screw extruder as follows: The Eudragit L100-55 was added to the extruder first, followed by PVP and PEG, at a temperature of 100 to 150° C The composition was extruded to a thickness of 0.35 mm between two polyethylene terephthalate release liners. Hydrogen peroxide solution was added to the extruded film.

34. PVP, PEG, and Eudragit L100-55 are listed at 44, 22, and 9 wt %, respectively.
35. When added together, PVP, PEG, and Eudragit L100-55 total 75 wt %, meaning the ratio is 58-30-12 ($44/75 = 58.6$ parts PVP; $22/75 = 29.3$ parts PEG; $9/75 = 12$ parts Eudragit L100-55).
36. On September 8, 2004, Corium and Topchiev filed U.S. Appl. No. 10/936,887 (the “**887 Application**”), which published as U.S. Pub. No. 2005/0113510 on May 26, 2005. (the “**510 Publication**”) (Ex F.) The ’887 Application is a continuation-in-part of the ’548 Application.
37. The ’510 Publication is directed at a method of preparing polymeric adhesive compositions utilizing the mechanism of interaction between polymer components.
38. Figure 8 of the ’510 Publication “illustrates the impact of absorbed water upon adhesive properties of the PVP-PEG-Eudragit L 100-55 blends [i.e., the same OCL blend used by Ranir], where the composition contains 58 wt. % PVP, 30 wt. % PEG, and 12 wt. % of the Eudragit L 100-55 [i.e., the same weight percentages used by Ranir]. The amounts of absorbed water (in

wt. %) are indicated”:



39. The '510 Publication also discloses various whitening agents and applications such as teeth whitening strips, as well as teaches that various method of manufacture may be used, such as melt extrusion.

Ranir's product offerings continue to use the same OCL as used since at least 2002.

40. In or around 2010, Ranir ceased its relationship with Corium and began manufacturing a PVP-based OCL in-house, maintaining the same Complex, and using the same machine it had used since 2002 it purchased by agreement from Corium.

41. To this day, Ranir manufactures OCL at its facility in Kentwood, Michigan.

42. The OCL manufactured by Ranir continues to be used in two different products: one that applies the OCL to a more rigid, wax-based backing layer, and another product that utilizes a thin flexible polymeric backing layer.

43. The teeth whitening products manufactured by Ranir include the Equate Ultra-White, the Equate Timeless White Whitening Strips, the Equate Professional Whitening Strips, the CVS Health Brilliant Whitening Strips Starter Kit, CVS Health Classic Whitening Strips Starter

Kit, CVS Health Classic White Whitening Strips, CVS Health Sensitive Whitening Strips, CVS Health Professional White Whitening Strips, Kroger Wonderfully White Whitening Strips, Kroger Deluxe Whitening Strips, Kroger Ultra Whitening Strips, Walgreens Extreme Whitening Strips, Walgreens Class Bright Whitening Strips, Meijer Classic Whitening Strips, Meijer Purely White Sensitive Teeth Whitening Strips, Meijer Premium Whitening Strips, and Meijer Professional Whitening Strips, among other name brand equivalent (“NBE”) products manufactured by Ranir. (the “**Accused Products**”).

44. To manufacture the Accused Products, Ranir uses a two-step process. The first step is to manufacture the OCL, which consists of a 58-30-12 ratio of PVP, PEG, and Eudragit L100-55, respectively. The OCL is manufactured via melt extrusion, which results in an OCL film on top of either a wax-based backing layer or a thin flexible polymeric backing layer. This first step does not include water or a peroxide bleaching agent.

45. After the OCL film layer is formed, Ranir conducts the second step. This involves adding a hydrogen peroxide solution, including water and other additives to the OCL film. This second step results in an “activated” OCL film.

46. Neither the first nor second step requires or otherwise involves drying the OCL or finished product.

Dr. Densen Cao forms CAO in 2000 and obtains various patents between 2020 to 2023.

47. Upon information and belief, Dr. Densen Cao formed CAO in or around 2000.

48. Upon information and belief, in or around 2006, CAO moved into a new facility in West Jordan, Utah.

49. Upon information and belief, in or around 2010, CAO launched its Sheer White!

Teeth Whitening Strips for in-home use.

50. Rather than use PVP, upon information and belief, CAO's whitening strips used a different primary polymer—poly(2-ethyl-2-oxazoline).

51. In or about 2014, Ranir was evaluating potential improvements to its teeth whitening technology and approached CAO. Ranir and CAO discussed CAO's patents directed toward use of poly(2-ethyl-2-oxazoline).

52. Ranir quickly determined that CAO teeth whitening products using poly(2-ethyl-2-oxazoline) in place of PVP were too different and ended the discussions, with Ranir instead continuing to manufacture its OCL with PVP as it had since 2002.

53. Apparently seeing the commercial success of Ranir's PVP-based product in the market, CAO upon information and belief began a concerted effort to obtain patents that covered PVP-based OCLs, while improperly and without any legal or factual basis relying on its earlier patents that required poly(2-ethyl-2-oxazoline) as a basis for support for these patent claims.

54. CAO obtained several issued patents between 2020 to 2023, that CAO asserts claim priority to its parent application filed by CAO on February 8, 2006.

55. On March 31, 2020, United States Patent No. 10,603,259 ("the '**259 Patent**"), entitled "PEROXIDE GEL COMPOSITION" and disclosing Dr. Densen Cao and Mr. Steven D. Jensen as co-inventors, was issued. The '259 Patent is assigned to CAO. (Ex. G.)

56. On May 12, 2020, United States Patent No. 10,646,419 ("the '**419 Patent**"), entitled "PEROXIDE GEL COMPOSITION" and disclosing Dr. Densen Cao and Mr. Steven D. Jensen as co-inventors, was issued. The '419 Patent is assigned to CAO. (Ex. H.)

57. On January 11, 2022, United States Patent No. 11,219,582 ("the '**582 Patent**"),

entitled “PEROXIDE GEL COMPOSITION” and disclosing Dr. Densen Cao and Mr. Steven D. Jensen as co-inventors, was issued. The ’582 Patent is assigned to CAO. (Ex. I.)

58. On November 28, 2023, United States Patent No. 11,826,444 (“the **’444 Patent**”), entitled “PEROXIDE GEL COMPOSITION” and disclosing Dr. Densen Cao and Mr. Steven D. Jensen as co-inventors, was issued. The ’444 Patent is assigned to CAO. (Ex. J.)

59. On November 28, 2023, United States Patent No. 11,826,445 (“the **’445 Patent**”), entitled “PEROXIDE GEL COMPOSITION” and disclosing Dr. Densen Cao and Mr. Steven D. Jensen as co-inventors, was issued. The ’445 Patent is assigned to CAO. (Ex. K.)

60. Collectively, the ’259 Patent, ’419 Patent, ’582 Patent, ’444 Patent, and ’445 Patent are referred to as the “**Asserted Patents.**”

61. Despite including formulations for products that rely on poly(2-ethyl-2-oxazoline), no formulations or other discussion of PVP are included, nor any disclosures for how such a PVP-based product could be manufactured.

62. Indeed, the only references to PVP in any of the Asserted Patents (outside of the claims themselves, which were drafted over a decade after the application that each claimed priority to) was in passing in two sentences—both of which are critical of PVP being used as compared to poly(2-ethyl-2-oxazoline).

63. None of the Asserted Patents disclose any formulations for PVP-based OCLs.

64. Further, rather than claim any particular formulation, the Asserted Patents’ claims each rely on vague, indefinite, unsupported claim terms that are not sufficiently enabled, supported, or defined in the Asserted Patents to be valid and enforceable.

CAO sends threatening communications to Ranir and its customers and sues Walmart for patent infringement in the District of Utah.

65. On June 6, 2023, shortly before the '444 Patent and '445 Patent issued, Dr. Densen Cao emailed Ranir on behalf of CAO, stating:

This email is to inform you that your branded products, Rembrandt Whitening Strips, and OEM whitening strip products including, but not limited to, Walmart Equate Whitening Strips, Walgreen Whitening Strips, CVS Whitening Strips, Kroger Whitening Strips, Amazon Basic Whitening Strips, and others, infringed at least one independent claim of following US patents: 10,603,259; 10,646,419; and 11,219,582. . . . We like to have amicable resolution for the infringement without going through litigation process by July 15, 2023. [Ex L, June 2023 Emails.]

66. Ranir, through its employees, responded to Dr. Cao, explaining, among other things, that Ranir's OCL was the same as it had been since 2002, and provided product packaging from the time period evidencing the same components were used no later than 2004.

67. Specifically, but without limitation, Ranir notified CAO of various Ranir products—including those noted above—that included the same OCL layer that predated CAO's Asserted Patents—as well as other documentation and evidence demonstrating that Ranir's OCL products predated and therefore would invalidate the Asserted Patents (with 3 of the 5 having issued as patents, and the remaining two still pending at that time).

68. Accordingly, no later than July 2023, CAO knew and had reason to know the Asserted Patents were invalid.

69. Rather than abandon his efforts, however, Dr. Cao began a harassment campaign of sending letters to Ranir's customers, including Walmart, CVS, Kroger, Meijer, Walgreens, and Target. These letters all asserted that each customer was infringing "at least one claim" of the '259 Patent, '419 Patent, '582 Patent, and pending patent applications (*i.e.*, the now issued '444 Patent and '445 Patent).

70. On March 5, 2024, CAO upped the ante, suing Ranir's customer, Walmart, for patent infringement in the District of Utah. (**Ex. M**, Complaint.)

71. CAO alleges that Walmart is infringing at least Claim 1 of the '259 Patent, Claim 1 of the '419 Patent, Claim 1 of the '582 Patent, Claim 1 of the '444 Patent, and Claim 1 of the '445 Patent. This case remains pending.

72. Most recently, in late May 2024, CAO again reached out to several Ranir customers, including CVS, Walgreens, Kroger, Albertsons, Target, and Meijer, stating that each customer infringed claims of the Asserted Patents, demanding that each customer cease and desist from further sales of the Accused Products. If they refused, CAO threatened to sue each for patent infringement.

73. At this point, there is no doubt that an actual and justiciable controversy exists between Ranir and CAO concerning Ranir's non-infringement position and the (in)validity of the Asserted Patents.

COUNT I
(Declaratory Judgment of Non-Infringement of the '259 Patent)

74. Ranir incorporates by reference all preceding paragraphs.

75. The Accused Products have not and do not infringe, directly or indirectly, any valid and enforceable claim of the '259 Patent, either literally or under the doctrine of equivalents.

76. Claims 1, 14, and 27 are the only independent claims of the '259 Patent.

77. The Accused Products do not infringe independent Claims 1, 14, and 27 of the '259 Patent, including but not limited to, because Ranir does not apply a "peroxide bleaching agent, a first solvent, and a thickening agent" onto a "strip of backing material" simultaneously. This is done in a two-step process.

78. Ranir's process does not include a drying step, as required by the following limitation of Claims 1, 14, and 27: "[W]herein the dental composition is dried after being applied on the strip of backing material."

79. Furthermore, Ranir also does not infringe because the Accused Products do not include a "gelatinous and viscoelastic" composition as claimed in the '259 Patent.

80. For at least these reasons and more, the Accused Products do not infringe any claims of the '259 Patent, either literally or under the doctrine of equivalents.

81. Ranir is entitled to a judgment from this Court that Ranir has not and does not infringe any valid and enforceable claim of the '259 Patent.

COUNT II
(Declaratory Judgment of Invalidity of the '259 Patent)

82. Ranir incorporates by reference all preceding paragraphs.

83. The '259 Patent is invalid for failure to meet the conditions of patentability or otherwise comply with one or more of 35 U.S.C. §§ 102, 103, and/or 112.

84. The '259 Patent is invalid under 35 U.S.C. § 112 because, among other infirmities, the claims do not contain "a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains."

85. Furthermore, the claims of the '259 Patent are also indefinite, failing to claim with the requisite particularity the claimed subject matter of the alleged invention.

86. Additionally, the '259 Patent is invalid as anticipated or obvious under 35 U.S.C. §§ 102, 103 because the prior art discloses or renders obvious to one of ordinary skill in the art the claim limitations of the '259 Patent.

87. At a minimum, the '277 Publication and '510 Publication anticipate or render obvious the claims of the '259 Patent. Additionally, Ranir's manufacture and sale of teeth whitening products beginning in 2004 ("**Ranir Prior Art Products**") is also invalidating prior art and anticipates or renders obvious the claims of the '259 Patent (collective with the '277 Publication and '510 Publication, the "**Invalidating Prior Art**").

88. The Invalidating Prior Art was not cited by the Applicant or Examiner during prosecution. Thus, this prior art was never applied, considered, discussed, or otherwise relied upon during prosecution of the Asserted Patents.

89. Claims 1, 14, and 27 of the '259 Patent are anticipated or rendered obvious over the Invalidating Prior Art because it would have been obvious to a person of ordinary skill in the art at the time of the invention to simply modify the disclosure of the Invalidating Prior Art, or combine these disclosures with another reference, to obtain the subject matter of the '259 Patent.

90. To resolve the legal and factual questions raised by CAO, and to afford Ranir relief from the uncertainty and controversy that CAO's allegations have created, Ranir is entitled to a declaratory judgment that the '259 Patent is invalid.

91. At least as of July 2023, CAO knew and had reason to know that the '259 Patent was invalid, yet persisted in enforcing it against Ranir and its customers without sufficient legal and factual basis to do so.

92. Ranir is further entitled to a declaration that CAO's enforcement of the '259 patent was in bad faith and that Ranir is entitled to damages against CAO.

COUNT III
(Declaratory Judgment of Non-Infringement of the '419 Patent)

93. Ranir incorporates by reference all preceding paragraphs.

94. The Accused Products have not and do not infringe, directly or indirectly, any valid and enforceable claim of the '419 Patent, either literally or under the doctrine of equivalents.

95. Claims 1, 16, and 28 are the only independent claims of the '419 Patent.

96. The Accused Products do not infringe independent Claims 1, 16, and 28 of the '419 Patent, including, but not limited to, because Ranir does not apply a “peroxide bleaching agent, a first solvent, and a thickening agent” onto a “strip of backing material” simultaneously. This is done in a two-step process.

97. Ranir’s process does not include a drying step, as required by the following limitation of Claims 1, 16, and 28: “[W]herein the dental composition is dried after being applied on the strip of backing material.”

98. For at least these reasons and more, the Accused Products do not infringe any claims of the '419 Patent, either literally or under the doctrine of equivalents.

99. Furthermore, Ranir also does not infringe because the Accused Products do not include a “gelatinous and viscoelastic” composition as claimed in the '419 Patent.

100. Ranir is entitled to a judgment from this Court that Ranir has not and does not infringe any valid and enforceable claim of the '419 Patent.

COUNT IV
(Declaratory Judgment of Invalidity of the '419 Patent)

101. Ranir incorporates by reference all preceding paragraphs.

102. The '419 Patent is invalid for failure to meet the conditions of patentability or otherwise comply with one or more of 35 U.S.C. §§ 102, 103, and/or 112.

103. The '419 Patent is invalid under 35 U.S.C. § 112 because, among other infirmities, the claims do not contain “a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains.”

104. Furthermore, the claims of the '419 Patent are also indefinite, failing to claim with the requisite particularity the claimed subject matter of the alleged invention.

105. Additionally, the '419 Patent is invalid as anticipated or obvious under 35 U.S.C. §§ 102, 103 because the prior art discloses or renders obvious to one of ordinary skill in the art the claim limitations of the '419 Patent.

106. At a minimum, the Invalidating Prior Art anticipates or renders obvious the claims of the '419 Patent.

107. The Invalidating Prior Art was not cited by the Applicant or Examiner during prosecution. Thus, this prior art was never applied, considered, discussed, or otherwise relied upon during prosecution of the Asserted Patents.

108. Claims 1, 16, and 28 of the '419 Patent are anticipated or rendered obvious over the Invalidating Prior Art because it would have been obvious to a person of ordinary skill in the art at the time of the invention to simply modify the disclosure of the Invalidating Prior Art , or combine these disclosures with another reference, to obtain the subject matter of the '419 Patent.

109. To resolve the legal and factual questions raised by CAO, and to afford Ranir relief from the uncertainty and controversy that CAO's allegations have created, Ranir is entitled to a

declaratory judgment that the '419 Patent is invalid.

110. At least as of July 2023, Cao knew and had reason to know that the '419 Patent was invalid, yet persisted in enforcing it against Ranir and its customers without sufficient legal and factual basis to do so.

111. Ranir is further entitled to a declaration that Cao's enforcement of the '419 Patent was in bad faith and that Ranir is entitled to damages against Cao.

COUNT V
(Declaratory Judgment of Non-Infringement of the '582 Patent)

112. Ranir incorporates by reference all preceding paragraphs.

113. The Accused Products have not and do not infringe, directly or indirectly, any valid and enforceable claim of the '582 Patent, either literally or under the doctrine of equivalents.

114. Claims 1 and 2 are the only independent claims of the '582 Patent.

115. The Accused Products do not infringe independent Claims 1 and 2 of the '582 Patent, including but not limited to, because Ranir does not apply a "peroxide bleaching agent, a solvent, and a thickening agent" onto a "portion of one of the flat sides of the strip of backing material" simultaneously. This is done in a two-step process.

116. Ranir's process does not include a drying step, as required by the limitations of Claims 1 and 2.

117. Furthermore, Ranir also does not infringe because the Accused Products do not include a "gelatinous, non-coalescent, and viscoelastic" composition as claimed in the '582 Patent.

118. For at least these reasons and more, the Accused Products do not infringe any claims of the '582 Patent, either literally or under the doctrine of equivalents.

119. Ranir is entitled to a judgment from this Court that Ranir has not and does not infringe any valid and enforceable claim of the '582 Patent.

**COUNT VI
(Declaratory Judgment of Invalidity of the '582 Patent)**

120. Ranir incorporates by reference all preceding paragraphs.

121. The '582 Patent is invalid for failure to meet the conditions of patentability or otherwise comply with one or more of 35 U.S.C. §§ 102, 103, and/or 112.

122. The '582 Patent is invalid under 35 U.S.C. § 112 because, among other infirmities, the claims do not contain “a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains.”

123. Furthermore, the claims of the '582 Patent are also indefinite, failing to claim with the requisite particularity the claimed subject matter of the alleged invention.

124. Additionally, the '582 Patent is invalid as anticipated or obvious under 35 U.S.C. §§ 102, 103 because the prior art discloses or renders obvious to one of ordinary skill in the art the claim limitations of the '582 Patent.

125. At a minimum, the Invalidating Prior Art anticipates or renders obvious the claims of the '582 Patent.

126. The Invalidating Prior Art was not cited by the Applicant or Examiner during prosecution. Thus, this prior art was never applied, considered, discussed, or otherwise relied upon during prosecution of the Asserted Patents.

127. Claims 1 and 2 of the '582 Patent are anticipated or rendered obvious over the Invalidating Prior Art because it would have been obvious to a person of ordinary skill in the art

at the time of the invention to simply modify the disclosure of the Invalidating Prior Art, or combine these disclosures with another reference, to obtain the subject matter of the '582 Patent.

128. To resolve the legal and factual questions raised by CAO, and to afford Ranir relief from the uncertainty and controversy that CAO's allegations have created, Ranir is entitled to a declaratory judgment that the '582 Patent is invalid.

129. At least as of July 2023, CAO knew and had reason to know that the '582 Patent was invalid, yet persisted in enforcing it against Ranir and its customers without sufficient legal and factual basis to do so.

130. Ranir is further entitled to a declaration that CAO's enforcement of the '582 Patent was in bad faith and that Ranir is entitled to damages against CAO.

COUNT VII
(Declaratory Judgment of Non-Infringement of the '444 Patent)

131. Ranir incorporates by reference all preceding paragraphs.

132. The Accused Products have not and do not infringe, directly or indirectly, any valid and enforceable claim of the '444 Patent, either literally or under the doctrine of equivalents.

133. Claims 1, 2, and 3 are the only independent claims of the '444 Patent.

134. The Accused Products do not infringe independent Claims 1 and 2 of the '444 Patent because the Accused Products do not include a "gelatinous, non-coalescent, and viscoelastic" dried dental composition as claimed in the '444 Patent.

135. Ranir's process does not include a drying step, as required by the following limitation of Claims 1 and 2: "[T]he dental composition having been dried to an extent that it no longer remains in a state of fluidity."

136. Ranir's process does not infringe independent Claim 3 of the '444 Patent because

Ranir's process does not include a drying step, as required by the following limitation of Claim 3: "[A] step of drying the bleaching gel on the backing material until the bleaching gel is no longer in a state of fluidity and has attained a non-coalescent gelatinous state."

137. For at least these reasons and more, the Accused Products do not infringe any claims of the '444 Patent, either literally or under the doctrine of equivalents.

138. Ranir is entitled to a judgment from this Court that Ranir has not and does not infringe any valid and enforceable claim of the '444 Patent.

COUNT VIII
(Declaratory Judgment of Invalidity of the '444 Patent)

139. Ranir incorporates by reference all preceding paragraphs.

140. The '444 Patent is invalid for failure to meet the conditions of patentability or otherwise comply with one or more of 35 U.S.C. §§ 102, 103, and/or 112.

141. The '444 Patent is invalid under 35 U.S.C. § 112 because, among other infirmities, the claims do not contain "a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains."

142. Furthermore, the claims of the '444 Patent are also indefinite, failing to claim with the requisite particularity the claimed subject matter of the alleged invention.

143. Additionally, the '444 Patent is invalid as anticipated or obvious under 35 U.S.C. §§ 102, 103 because the prior art discloses or renders obvious to one of ordinary skill in the art the claim limitations of the '444 Patent.

144. At a minimum, the Invalidating Prior Art anticipates or renders obvious the claims of the '444 Patent.

145. The Invalidating Prior Art was not cited by the Applicant or Examiner during prosecution. Thus, this prior art was never applied, considered, discussed, or otherwise relied upon during prosecution of the Asserted Patents.

146. Claims 1, 2, and 3 of the '444 Patent are anticipated or rendered obvious over the Invalidating Prior Art because it would have been obvious to a person of ordinary skill in the art at the time of the invention to simply modify the disclosure of the Invalidating Prior Art, or combine these disclosures with another reference, to obtain the subject matter of the '444 Patent.

147. To resolve the legal and factual questions raised by CAO, and to afford Ranir relief from the uncertainty and controversy that CAO's allegations have created, Ranir is entitled to a declaratory judgment that the '444 Patent is invalid.

148. At least as of July 2023, CAO knew and had reason to know that the '444 Patent was invalid, yet persisted in enforcing it against Ranir and its customers without sufficient legal and factual basis to do so.

149. Ranir is further entitled to a declaration that CAO's enforcement of the '444 Patent was in bad faith and that Ranir is entitled to damages against CAO.

COUNT IX
(Declaratory Judgment of Non-Infringement of the '445 Patent)

150. Ranir incorporates by reference all preceding paragraphs.

151. The Accused Products have not and do not infringe, directly or indirectly, any valid and enforceable claim of the '445 Patent, either literally or under the doctrine of equivalents.

152. Claims 1 and 2 are the only independent claims of the '445 Patent.

153. The Accused Products do not infringe independent Claims 1 and 2 of the '445 Patent because the Accused Products do not include a "gelatinous, non-coalescent, and

viscoelastic” composition as claimed in the ‘445 Patent.

154. For at least these reasons and more, the Accused Products do not infringe any claims of the ‘445 Patent, either literally or under the doctrine of equivalents.

155. Ranir is entitled to a judgment from this Court that Ranir has not and does not infringe any valid and enforceable claim of the ‘445 Patent.

COUNT X
(Declaratory Judgment of Invalidity of the ‘445 Patent)

156. Ranir incorporates by reference all preceding paragraphs.

157. The ‘445 Patent is invalid for failure to meet the conditions of patentability or otherwise comply with one or more of 35 U.S.C. §§ 102, 103, and/or 112.

158. The ‘445 Patent is invalid under 35 U.S.C. § 112 because, among other infirmities, the claims do not contain “a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains.”

159. Furthermore, the claims of the ‘445 Patent are also indefinite, failing to claim with the requisite particularity the claimed subject matter of the alleged invention.

160. Additionally, the ‘445 Patent is invalid as anticipated or obvious under 35 U.S.C. §§ 102, 103 because the prior art discloses or renders obvious to one of ordinary skill in the art the claim limitations of the ‘445 Patent.

161. At a minimum, the Invalidating Prior Art anticipates or renders obvious the claims of the ‘445 Patent.

162. The Invalidating Prior Art was not cited by the Applicant or Examiner during prosecution. Thus, this prior art was never applied, considered, discussed, or otherwise relied upon

during prosecution of the Asserted Patents.

163. Claims 1 and 2 of the '445 Patent are anticipated or rendered obvious over the Invalidating Prior Art because it would have been obvious to a person of ordinary skill in the art at the time of the invention to simply modify the disclosure of the Invalidating Prior Art, or combine these disclosures with another reference, to obtain the subject matter of the '445 Patent.

164. To resolve the legal and factual questions raised by CAO, and to afford Ranir relief from the uncertainty and controversy that CAO's allegations have created, Ranir is entitled to a declaratory judgment that the '445 Patent is invalid.

165. At least as of July 2023, CAO knew and had reason to know that the '445 Patent was invalid, yet persisted in enforcing it against Ranir and its customers without sufficient legal and factual basis to do so.

166. Ranir is further entitled to a declaration that CAO's enforcement of the '445 Patent was in bad faith and that Ranir is entitled to damages against CAO.

REQUEST FOR RELIEF

WHEREFORE, Ranir respectfully requests the following relief:

A. A declaration that Ranir has not infringed, and does not infringe, either directly or indirectly, any valid and enforceable claim of the '259 Patent, '419 Patent, '582 Patent, '444 Patent, and '445 Patent, either literally or under the doctrine of equivalents;

B. A declaration that the claims of the '259 Patent, '419 Patent, '582 Patent, '444 Patent, and '445 Patent are invalid for failure to comply with the requirements of 35 U.S.C. §§ 102, 103, and 112;

C. An injunction against CAO and its officers, agents, servants, and employees from directly or indirectly asserting infringement or initiating any action in any Court or online marketplace, for infringement of the '259 Patent, '419 Patent, '582 Patent, '444 Patent, and '445 Patent against Ranir or any of Ranir's customers;

D. A declaration that this action is an exceptional case under 38 U.S.C. § 285, with an award to Ranir of its attorneys' fees incurred in filing and prosecuting this action, including but not limited to based on the invalidity of the Asserted Patents and Cao's knowledge that the Asserted Patents are invalid and continued maintenance of its lawsuit against Walmart and demanding compensation from Ranir' customers;

E. A declaration that Cao's actions, including maintenance of its lawsuit against Walmart and demands of Ranir's customers, was and remains without merit and constitutes a violation of 28 U.S.C. § 1927; and

F. Award such other relief as the Court may deem appropriate and just under the circumstances.

JURY DEMAND

Ranir demands a trial by jury on all Counts so triable.

DATED July 16, 2024

GREENBERG TRAURIG LLP

/s/ John W Huber
John W. Huber
Marc T. Rasich
Nicholas Peterson