[redacted]

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

Before The Honorable Doris Johnson Hines
Administrative Law Judge

IN THE MATTER OF CERTAIN VAPORIZER DEVICES, CARTRIDGES USED THEREWITH, AND COMPONENTS THEREOF	Investigation No. 337-TA-1372

COMPLAINANT'S PRE-HEARING BRIEF

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e) [16.5] the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source 169

f) [16.6] an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing....171

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h) [16.8] a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium 177

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d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow

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e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow.....206

f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 209

g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture. 212

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e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow.....218

f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source 218

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g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing. 218

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a) [25.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 231

b) [25.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, te housing having a first aperture proximate the first end and a second aperture proximate the second end....231

c) [25.3] the first end of the housing being adapted to electrically couple to the power source....231

d) [25.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing....231

e) [25.5] a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer 231

f) [25.6] the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 235

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g) [25.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing. 238

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a) [1.1] An apparatus comprising 271

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b) [1.2] a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion; and.....271

c) [1.3] a cartridge having a housing that comprises an interior, wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end.....272

d) [1.4] wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing, ...273

e) [1.5] wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source,.....275

f) [1.6] wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing,.....276

g) [1.7] wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element, ...277

h) [1.8] wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end,.....279

i) [1.9] wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source. 280

3. 881 Patent, Claim 16.....281

a) [16.1] A cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer, the cartridge comprising: 281

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b) [16.2] a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing 281

c) [16.3] the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end 282

d) [16.4] the housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing 283

e) [16.5] the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source 285

f) [16.6] an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing 285

g) [16.7] the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway; and 287

h) [16.8] a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium 288

i) [16.9] the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture 290

j) [16.10] the heating element being connected to the electrically conductive portion of the first end of the

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housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge. 290

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b) [1.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end 295

c) [1.3] the first end of the housing being adapted to electrically couple to the power source 297

d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture 297

e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow 298

f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 299

g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture. 301

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a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:.....303

b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end 303

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f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source 303

g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing. 304

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b) [25.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end....308

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(g) [16.7] the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway; and 378

(h) [16.8] a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium, ...381

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(e) [1.5] wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source, ...444
(f) [1.6] wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing, ...456
(g) [1.7] wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element, ...460

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(h) [1.8] wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end,.....465

(i) [1.9] wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source. 469

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(2) Solution Holding Medium 996
(3) Interior, Solution Holding Medium 1000
(4) Perpendicular Heating Element Coil 1002
(5) Heating Element 1004
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(2) Solution Holding Medium 1012
(3) Interior, Solution Holding Medium 1017
(4) Perpendicular Heating Element Coil 1019
(5) Airflow Passing Both Transverse Sides of Heating Element 1023
(6) Distinct Airflows 1029
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e) The Claims at Issue Are Not Indefinite Under Pre-AIA 35 U.S.C. § 112, ¶ 2 1035
(1) Interior, Solution Holding Medium 1036
(2) Interior extending continuously along a majority of the length of the airflow passageway 1039
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1. Infringement....1040
a) The JUUL System Infringes the Claims at Issue....1040
(1) Claim 1....1040
(a) [1.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1041
(b) [1.2] [the cartridge comprising:] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the firt end and a second aperture proximate the second end,....1042
(c) [1.3] the first end of the housing being adapted to electrically couple to the power source, ...1055
(d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; 1056
(e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ...1058
(f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 1067
(g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture. 1071
(2) Claim 2....1074
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(a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1078

(b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,.....1078

(c) [9.3] the first end of the housing being adapted to electrically couple to the power source, ...1078

(d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and.....1078

(e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ...1079

(f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source, ...1079

(g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.....1079

(4) Claim 10.....1085

(5) Claim 12.....1086

(6) Claim 13.....1090

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(7) Claim 15 1091
(8) Claim 16 1092
(9) Claim 20 1095
(10) Claim 25 1096
(a) [25.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1096
(b) [25.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,..... 1096
(c) [25.3] the first end of the housing being adapted to electrically couple to the power source, ... 1097
(d) [25.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing; and 1097
(e) [25.5] a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer,..... 1098
(f) [25.6] the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 1103
(g) [25.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow

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passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing. 1104

(11) Claim 26 1109

(12) Rebuttal to Respondent's Non-Infringement Arguments 1109

b) The JUUL2 System Infringes the Claims at Issue 1124

(1) Claim 1 1124

(a) [1.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1124

(b) [1.2] [the cartridge comprising:] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end, ...1125

(c) [1.3] the first end of the housing being adapted to electrically couple to the power source, ...1135

(d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; 1137

(e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ...1139

(f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 1146

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(g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture. 1148

(2) Claim 2.....1153

(3) Claim 9.....1153

(a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1154

(b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,.....1154

(c) [9.3] the first end of the housing being adapted to electrically couple to the power source, ...1154

(d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and.....1154

(e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ...1155

(f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source, ...1155

(g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the

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central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing. 1155

(4) Claim 10 1159

(5) Claim 12 1159

(6) Claim 13 1160

(7) Claim 15 1161

(8) Claim 20 1162

(9) Rebuttal to Respondent's Non-Infringement Arguments 1163

c) [redacted] 1175

2. Indirect Infringement 1178

a) JUUL System 1179

b) JUUL2 System 1180

3. Domestic Industry – Technical Prong 1181

a) The NJOY ACE and NJOY [redacted] Systems Practice the Claims at Issue 1181

(1) Claim 9 1181

(a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1182

(b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end, ... 1183

(c) [9.3] the first end of the housing being adapted to electrically couple to the power source, ... 1193

(d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and 1195

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(e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ...1196

(f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source, ...1200

(g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.....1203

(2) Claim 10.....1206

(3) Claim 12.....1209

(4) Claim 13.....1211

(5) Claim 15.....1215

(6) Claim 20.....1217

(7) Respondent's Contentions Will Not Demonstrate that the NJOY ACE and NJOY [redacted] Systems Do Not Practice the 864 Patent.....1219

(a) Solution Holding Medium 1220

(b) First End of the Housing Being Adapted to Electrically Couple to the Power Source 1221

(c) Heating Element Being Configured to Vaporize at Least a Portion of the Solution for Oral Provision to an Individual in the Airflow.....1222

(d) The Heating Element Extending Transversely to a Central Longitudinal Axis of the Housing.....1224

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(e) A Heating Element . . . Being Partially Exposed to the Airflow 1224

(f) A [first/second] portion of the airflow path proximate the [first/second] aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.....1225

(g) First and Second Apertures.....1229

(h) Jose Bonet Testimony.....1230

b) The VUSE Alto System Practices the Claims at Issue 1233

(1) Claim 9.....1233

(a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1233

(b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,.....1234

(c) [9.3] the first end of the housing being adapted to electrically couple to the power source, ...1244

(d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and.....1247

(e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ...1248

(f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source, ...1251

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(g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a econd portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.....1253

(2) Claim 10.....1255

(3) Claim 12.....1257

(4) Claim 13.....1259

(5) Claim 15.....1260

(6) Claim 20.....1262

(7) Respondent's Contentions Will Not Demonstrates that the VUSE Alto System Does Not Practice the 864 Patent.....1263

(a) A Cartridge Comprising: A Housing.....1264

(b) Solution Holding Medium.....1264

(c) Heating Element Being Configured to Vaporize at Least a Portion of the Solution for Oral Provision to an Individual in the Airflow.....1266

(d) The Heating Element Extending Transversely to a Central Longitudinal Axis of the Housing.....1267

(e) A Heating Element . . . Being Partially Exposed to the Airflow.....1267

(f) A [first/second] portion of the airflow path proximate the [first/second] aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.....1268

(g) Power Source Adapted to Be Electrically Coupled to the First End of the Housing, the Power Source Including a Battery.....1273

(h) Wicking Material.....1274

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(i) The First Aperture Proximate the First End Is Smaller Than the Second Aperture Proximate the Second End 1274

c) The VUSE Solo System Practices the Claims at Issue 1275

(1) Claim 1 1275

(a) [1.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1275

(b) [1.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end, ... 1278

(c) [1.3] the first end of the housing being adapted to electrically couple to the power source, ... 1285

(d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; 1292

(e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ... 1295

(f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 1300

(g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture. 1309

(2) Claim 2 1313

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(3) Claim 9 1321

(a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1321

(b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end, ... 1321

(c) [9.3] the first end of the housing being adapted to electrically couple to the power source, ... 1321

(d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and 1321

(e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, ... 1321

(f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source, ... 1322

(g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing 1322

(4) Claim 10 1325

(5) Claim 12 1325

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(6) Claim 15 1329
(7) Claim 16 1330
(8) Claim 20 1334
(9) Claim 25 1341
(a) [25.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising: 1341
(b) [25.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end, ... 1342
(c) [25.3] the first end of the housing being adapted to electrically couple to the power source, ... 1342
(d) [25.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing; and 1342
(e) [25.5] a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer, ... 1342
(f) [25.6] the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and 1345
(g) [25.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow

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passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing. 1345

(10) Claim 26 1349

(11) Respondent's Contentions Will Not Demonstrate that the VUSE Solo System Does Not Practice the 864 Patent 1349

(a) Solution Holding Medium 1349

(b) Heating Element Extending Transversely 1350

(c) Heating Element Configured to Vaporize Solution 1351

(d) First End of the Housing Electrically Coupled to a Power Source 1354

(e) Airflow Passageway 1354

(f) Substantially Central and Axial Airflow Path 1356

(g) With Only the Heating Element Obstructing a Portion of the Airflow 1358

(h) Airflow Passing on Both Transverse Sides of the Heating Element 1358

4. Validity 1359

a) The Alleged Prior Art References 1359

b) The Claims at Issue Are Not Anticipated Under Pre-AIA 35 U.S.C. § 102 or Rendered Obvious Under Pre-AIA 35 U.S.C. § 103 1359

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35 U.S.C. § 112..... *passim*

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[redacted]

I. INTRODUCTION

Pursuant to the Ground Rules (Order No. 2) and the Third Amended Procedural Schedule (Order No. 22), Complainant NJOY, LLC provides its pre-hearing brief. As set forth herein and as will be demonstrated at the hearing, Respondent JUUL Labs, Inc. has engaged in unfair acts in violation of Section 337 through and in connection with the unlicensed importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of certain vaporizer devices, cartridges used therewith, and components thereof that infringe claims 19 and 26 of U.S. Patent No. 10,331,881 ("the 881 Patent")[1] and claims 2, 9, 10, 12, 13, 15, 16, 20 and 26 of U.S. Patent No. 11,497,864 ("the 864 Patent") (the 881 and 864 Patents collectively, the "Asserted Patents").

The products at issue in this investigation are vaporizer devices, which are also known as electronic nicotine delivery systems ("ENDS"). ENDS generally comprise a battery and electronic circuity for operating the device, as well as a vaporizable substance containing nicotine (e.g., a liquid) and an atomizer for vaporizing the substance in response to a user inhaling on the device. ENDS have been commercially sold in the United States since at least the mid-2000s.

Soon after this emergence, in 2009 the inventors of the Asserted Patents conceived of and reduced to practice a novel and foundational ENDS design. Prior ENDS existed as one-piece, two-piece, and three-piece designs. A one-piece design had a reusable unitary body comprising a power source, atomizer, liquid storage, which often could be refilled, and a mouthpiece. The three-piece design separated the power source from a reusable atomizer and a disposable cartridge, which comprised a liquid storage and a mouthpiece. The two-piece design integrated the atomizer into the disposable cartridge, but the atomizer was always oriented parallel with the length of the

[1] Complainant also asserts claim 1 of the 881 Patent for domestic industry purposes only.

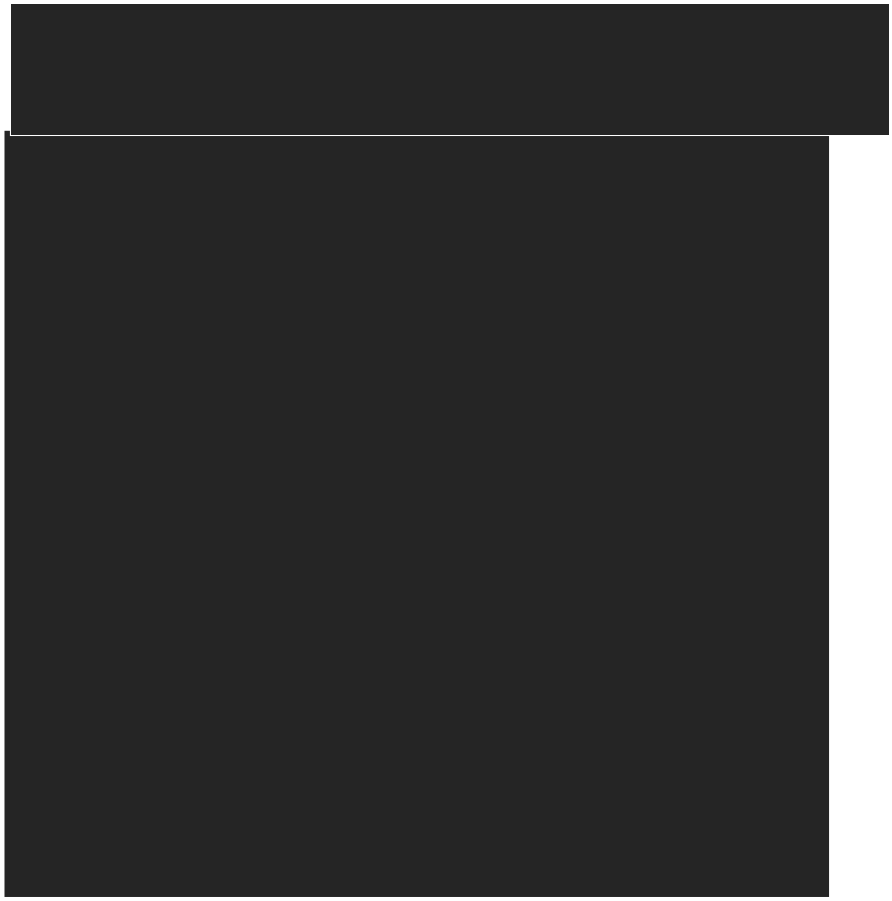
[redacted]

cartridge and wrapped in liquid-holding that was susceptible to burning. The inventions of the Asserted Patents improved upon these prior designs in many ways, including by fitting and orienting a heating element transversely within an airflow passageway of the cartridge, which avoided the burning taste and smell plaguing prior two-piece designs.

As will be demonstrated at the hearing, these patented inventions are embodied in, and infringed by, the accused JUUL System and JUUL2 System, as well as the [redacted] identified by Respondent in this investigation. The JUUL System comprises [redacted]

[redacted]

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Some of Complainant's ENDS devices, namely the ACE and [redacted] also embody the claims of the Asserted Patents, and Complainant has established a domestic industry based thereon. The ACE and [redacted] are each a pod vaporizer device that comprises a reusable and rechargeable electronic device and a disposable pod ("ACE Pod") that stores a vaporizable liquid that is inserted into the electronic device for use. Once the liquid in an ACE Pod is depleted, the adult consumer can replace the used ACE Pod with a new one.

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[redacted]

Figure 1 NJOY ACE Device; Assembled (left), NJOY ACE POD Separated (right)



JX-0558C.0008

Complainant has made and continues to make substantial investments in the United States related to engineering, research and development, manufacturing, and obtaining regulatory authorization of its products, including ACE, and products in development, such as [redacted] For example, Complainant maintains facilities and equipment in Wisconsin that support engineering, research and development, and quality control directed to design and development work for ACE and successor products, quality control and other testing for supporting Complainant's commercial products and regulatory authorization activities, and assessing customer feedback. CX-0017C.0005. The liquid formulations used in ACE [redacted]. *Id.* at .0007.

The ACE is the only FDA-authorized pod vaporizer device on the market in the United States. The Premarket Tobacco Product Applications ("PMTA") for ACE were received by the FDA on March 10, 2020, and totaled tens of thousands of pages, including numerous scientific studies and extensive consumer research. Complainant submitted scientific evidence

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[redacted]

demonstrating: the ACE products are less harmful than combustible cigarettes; meaningful switching among consumers from combustible cigarettes to the ACE products; and youth prevalence data showing miniscule levels of youth interest in the ACE products. After two years of extensive scientific review, the FDA issued a decision on April 25, 2022, granting market authorization for the ACE device and three tobacco-flavored ACE Pods. Complainant's authorized ACE products are subject to continued FDA oversight in the form of post-market surveillance and reporting requirements.

The evidence at the hearing will show that Complainant's licensee, R.J. Reynolds Vapor Company ("RJR"), has also established a domestic industry for its VUSE Alto and VUSE Solo vapor devices, which practice the Asserted Patents. Like the ACE products, the VUSE Alto includes (1) a pod containing an airflow passageway, a transverse heating element therein, and a solution holding medium, and (2) a power source containing the battery and circuitry. The VUSE Solo also includes a cartridge and a power source containing the same general components, but having an alternative design.

[redacted]

JX-0580C.0015, JX-0580C.0016

[redacted]

JX-0577C.0012

RJR has made and continues to make substantial investments in the United States related to [redacted]

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[redacted], including for the VUSE Alto and Solo. JX-0582.0004. For example, RJR maintains [redacted]. *Id.* [redacted]. JX-0582.0005. [redacted] *Id.* [redacted] JX-0582.0005.

Respondent argues that the accused products do not infringe the Asserted Patents and that the ACE products, the VUSE Alto, and the VUSE Solo do not practice them. Respondent's arguments rely on incorrect, hyper-technical analyses of these products, strained and narrow interpretations of the asserted claims, and/or strawmen claim limitations. For example, as described further herein, Respondent contends the JUUL System does not practice claims requiring an "airflow path proximate the first aperture being defined substantially centrally and axially" due to the [redacted] Respondent, however, ignores its own airflow analyses that show a [redacted] CX-2833. As another example, Respondent repeatedly imports limitations into the asserted claims to create strawmen limitations—*e.g.*, a housing that is the exterior structure of the entire cartridge, a solution holding medium that surrounds the airflow passageway over the entirety of its length and in 360°, and an airflow passageway comprising a structure extending to the apertures and having the same diameter as the apertures, to name a few. The claims, as properly construed, are infringed and practiced by the accused products and the domestic industry products.

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[redacted]

Respondent also contends that the claims of the Asserted Patents are invalid. Some of the alleged prior art are not, in fact, prior art. The Asserted Patents are entitled to a priority date of July 27, 2010, and were reduced to practice in the fall of 2009, well before the publication of one reference and the public availability of certain devices. Respondent's other alleged prior art fails to disclose many of the claimed features. In fact, no single reference or product teaches a transverse heating element in the airflow passageway of a liquid-holding cartridge, and doing so was not obvious. Respondent has to resort to multiple, significant modifications to the prior art devices to support its invalidity defenses. As the evidence will show, a POSITA would not have had a reason to make these changes, which often go against the teachings in the prior art and knowledge of a POSITA. The substantial record on objective indicia will further confirm that the claimed cartridge was non-obvious, and that imitators praised and quickly copied the inventions of the Asserted Patents soon after they were commercialized by the original patent owners. Respondent's arguments under 35 U.S.C. § 112 also fail; they are based on the same flawed interpretations and strawmen limitations noted above.

Respondent cannot establish that an exclusion order would have an adverse impact on the public interest in light of the "like or directly competitive" products that would still be on the market. Notably, Respondent JLI takes inconsistent positions in this matter and in the 1368 matter depending on whether it is invoking or opposing the public interest. In the 1368 matter, JLI contends that any non-combustible product – not just pod-based e-cigarettes – should be considered substitutes for purposes of public interest analysis. By contrast here, JLI argues that these other categories are sufficiently unappealing that they should not be considered as substitutes, and argues further that JUUL is supposedly so special that even other pod products are not substitutes. The determination of what types of products are "like or directly competitive" to

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pod products like JUUL and NJOY ACE should be the same across both proceedings. If the Commission limits the inquiry to pod-based e-cigarettes, JUUL is not unique; there are "like or directly competitive" pods available – particularly NJOY ACE, the only FDA-authorized pod. And if the Commission were to agree with JLI's broader definition of substitutes in the 1368 matter and consider all non-combustible products to be substitutes, the widespread availability of the other products further confirms that excluding JUUL would not harm the public interest.

In sum, the evidence at the hearing will demonstrate that Respondent has violated Section 337 because: (1) the JUUL System and JUUL2 System infringe (as well as the [redacted]) infringe the Asserted Patents; (2) the Asserted Patents are valid; and (3) Complainant has satisfied the domestic industry requirement. Moreover, the availability of an FDA-authorized pod-based product with sufficient capacity to meet any increase in demand were an exclusion order to issue demonstrates the remedy requested here would not harm the public interest.

A. Procedural History

Complainant filed a complaint with the Commission on August 22, 2023, asserting that Respondent has violated 19 U.S.C. § 1337 by importing into the United States, selling for importation, and selling within the United States after importation certain vaporizer devices, cartridges used therewith, and components thereof, which Complainant asserted infringe directly and indirectly claims 1-48 of the 864 Patent and claims 1, 3, 4, 6-9, 11, 12, 14-17, 19, 20, 22, 23, and 25-27 of the 881 Patent. The accused product identified in the complaint is the JUUL System, including the JUUL Pod and JUUL Device. Complainant asserted a domestic industry existed based on NJOY's ACE and [redacted] products, and based on licensee RJR's VUSE Alto, Vibe, Solo, and Ciro products.

The Commission instituted this Investigation on September 21, 2023, through publication of a Notice of Investigation in the Federal Register. The Commission delegated the issue of public

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interest to the ALJ. Respondent responded to the complaint on October 30, 2023. On November 13, 2023, Complainant identified the JUUL2 System as an accused product. A claim construction hearing was held on January 8, 2024. On January 26, 2024, Complainant reduced the asserted domestic industry products to the NJOY ACE and [redacted] products, and the RJR VUSE Alto and VUSE Solo products. The ALJ issued a claim construction order on April 5, 2024.

On April 5, 2024, Respondent filed a motion for summary determination that the JUUL System and the [redacted] does not infringe the Asserted Patents, which Complainant opposed and the Staff opposed-in-part. That motion is currently pending.

In April 2024, Complainants reduced the asserted claims to claims 2, 9, 10, 12, 13, 15, 16, 20, and 26 of the 864 Patent and to claims 1 (for domestic industry only), 19 (for infringement only) and 26 (for infringement only) of the 881 Patent. A motion for partial terminate was filed and granted accordingly. *See* Order 44.

Motions *in limine* are due by May 15, 2024, the pre-hearing conference is June 5, 2024, and the hearing is scheduled for June 5-11. *See* Order 22.

B. The Private Parties

1. Complainant NJOY, LLC

Complainant NJOY, LLC is a Delaware limited liability corporation with a principal place of business at 9977 N. 90th Street, Suite 160, Scottsdale, Arizona 85258. NJOY LLC is a wholly-owned subsidiary of NJOY Holdings Inc.

2. Respondent JUUL Labs, Inc.

Respondent JUUL Labs, Inc. is a corporation organized and existing under the laws of Delaware, with a principal place of 1000 F Street NW, Washington DC 20004.

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[redacted]

C. Overview of the Technology

Commercially-relevant e-cigarettes were first invented by Chinese pharmacist Hon Lik in 2003, and first marketed in China in 2004. CX-2949C.0003. These e-cigarettes did not spread immediately to consumers in the United States. Instead, as one study by CDC researchers explains, e-cigarettes were only introduced to the United States "around 2007." CX-2807.0001. Other CDC publications agree that e-cigarettes only entered the United States marketplace in 2007. *See, e.g.*, CX-2803. Given that e-cigarettes were only introduced to the United States in 2007, this field was still nascent and developing by the time the inventors of the Asserted Patents conceived of inventions of the Asserted Patents.[2]

1. E-Cigarettes and Separable Power Source and Cartridge

As the evidence as the hearing will show, e-cigarettes in the market in or around 2009 can be generally categorized into three configurations: one-piece, two-piece, and three-piece e-cigarettes. One-piece designs typically housed in one, unitary device: the power source, the atomizer for atomizing/vaporizing liquid, and a liquid storage. Two-piece designs included: (1) a power source and (2) a disposable cartridge containing the liquid storage, and the atomizer would either be integrated in the reusable power source part (as shown below in the NJOY NGAR) or in the disposable liquid-storing cartridge.



[2] To the extent that Respondent or its expert, Mr. Leinsing, references testimony from Mr. Conley, one of the named inventors of the Asserted Patents, regarding certain features which were known in the art, references disclosing e-cigarettes with such features were cited and considered by the Patent Office during prosecution of the Asserted Patents.

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CX-2766 (Photograph of NJOY NGAR) (showing one part (left) housing the power source and an integrated atomizer, and another part (right) that is the liquid-storing cartridge)

Cartridges that housed both the atomizer and the liquid storage, such as claimed by the Asserted Patents, were sometimes called "cartomizers," which is a combination of the words "cartridge" and "atomizer." Three-piece designs included three separate components: (1) a reusable power source, (2) a reusable atomizer, and (3) a disposable liquid storing cartridge.

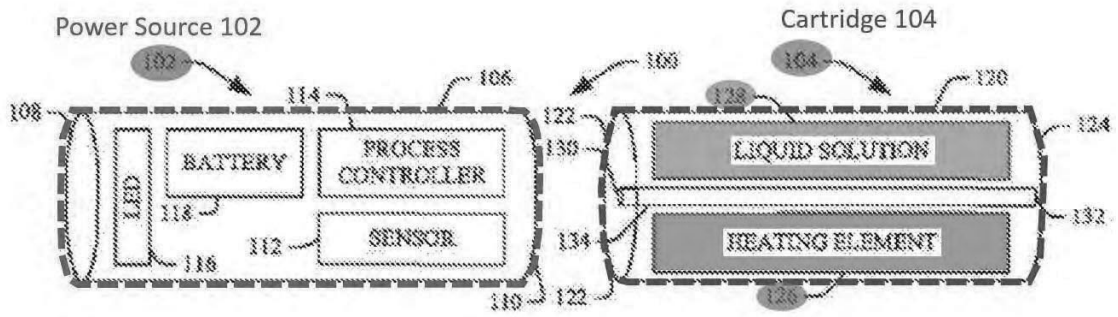
The predominant designs at the time of the invention of the Asserted Patents were "non-cartomizer" designs, where the atomizer was either integrated into the power unit (one-piece and two-piece designs) or a separate reusable part (three-piece designs), and not disposed of along with the liquid storage cartridge. The ability to reuse the atomizer prevented waste and kept costs low as the atomizer did not need to be discarded every time e-liquid became depleted. *See, e.g.*, *generally* JX-0595 (Fang 044) (disclosing a reusable battery and atomizer in a unitary body); JX-0544 (Han 311) at [0017].

Complainant anticipates that Respondent will put on evidence regarding the state of the technology, including from its expert, Mr. Leinsing. In his report, Mr. Leinsing opines that "[k]nown 'cartridge' portions contained an absorbent material and/or other solution holding means that held the e-liquid and a means for heating and vaporizing the e-liquid by fluid/heat transfer, called an 'atomizer.'" JX-0632C (Leinsing Opening Report) ¶ 47. Respondent's expert is incorrect to the extent he contends that cartridges always contained atomizers. If, as Respondent's expert suggests, "cartridges" included atomizers already, the term "cartomizer" would have no meaning. For example, Han 364, published April 29, 2010, uses the terms "cartridge method" and "cartridge-type atomizer" to refer to three-piece designs having a separate liquid-storing cartridge and a separate atomizer component. *See generally* JX-0631 (Han 364).

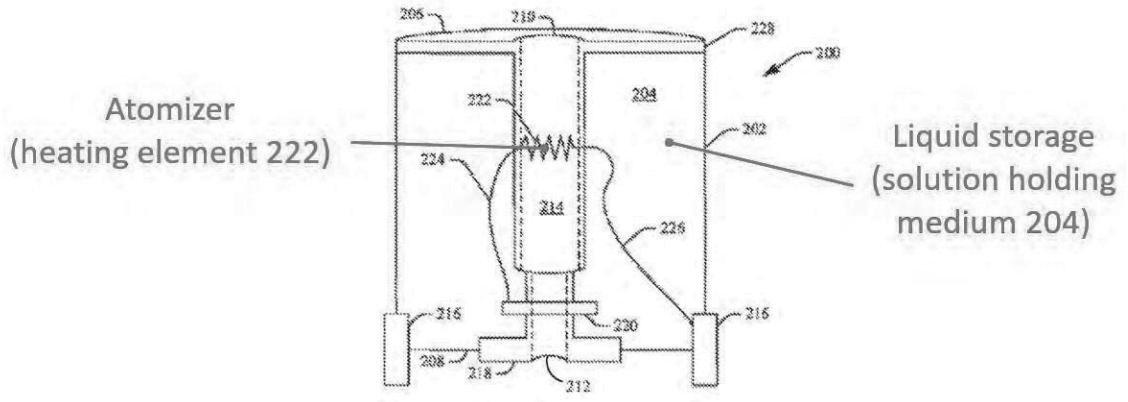
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The evidence at the hearing will show that the Asserted Claims of the Asserted Patents are directed to a cartomizer design. The Asserted Patents, however, acknowledge the distinction between three-piece and two-piece cartomizer designs. For example, Figures 1 and 2 of the Asserted Patents are directed to two-piece cartomizer designs, as shown below. *See also* JX-0005 (881 Patent) at 2:60-61 ("The electronic vaporizer 100 comprises a power source 102 and a cartridge 104").



JX-0005 (881 Patent) at Fig. 1 (annotated to identify two pieces—power source 102 and cartridge 104)



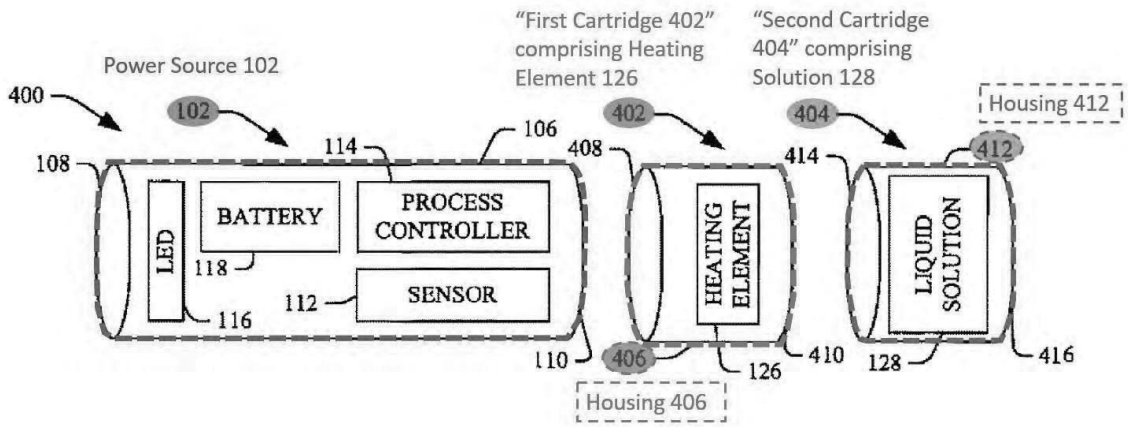
JX-0005 (881 Patent) at Fig. 2 (annotated to identify atomizer and liquid storage integrated into cartridge 200)

Figure 4 of the Asserted Patents, however, is directed to a three-piece design, which is not the subject of the Asserted Claims of the Asserted Patents. It includes "three separate portions: 1)

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the power source 102; 2) a first cartridge 402 that comprises the heating element 126; and 3) a second cartridge 404 (a mouthpiece cartridge) that comprises the solution 128." JX-0005 (881 Patent) at 8:24-29. As shown below, item 402 corresponds to the atomizer/heating element, and item 404 corresponds to the disposable cartridge comprising liquid storage/solution holding medium:

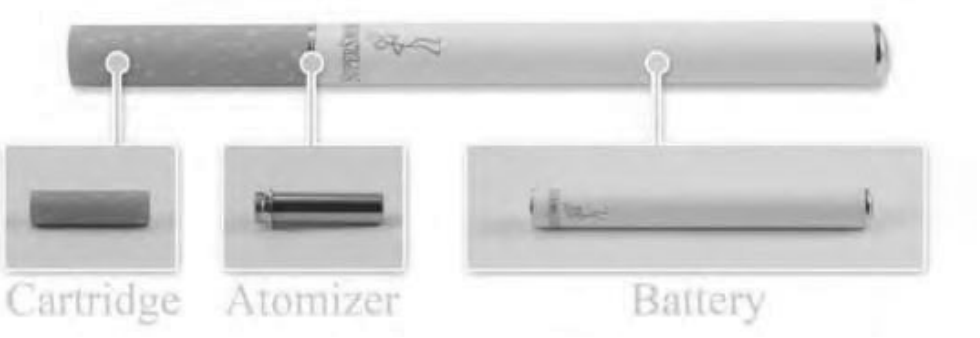


JX-0005 (881 Patent) at Fig. 4 (annotated to identify three pieces—power source 102, atomizer/cartridge 402, and cartridge 404)

Notably, item 402 and item 404 each have their own distinct housings: the "first cartridge 402 can comprise a housing 406" and the "second cartridge 404 comprises a housing 412." JX-0005 (881 Patent) at 8:32-35, 8:47-49.

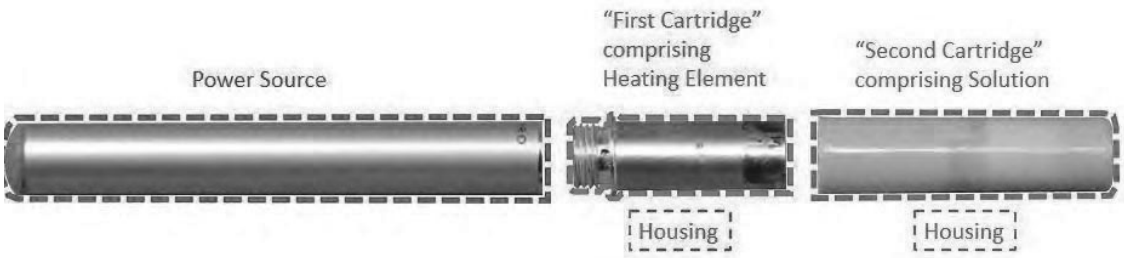
Indeed, Respondent's expert, Mr. Leinsing, acknowledged that "a typical 3-piece e-cigarette" comprises a cartridge (liquid storage), atomizer (heating element), and battery (power unit):

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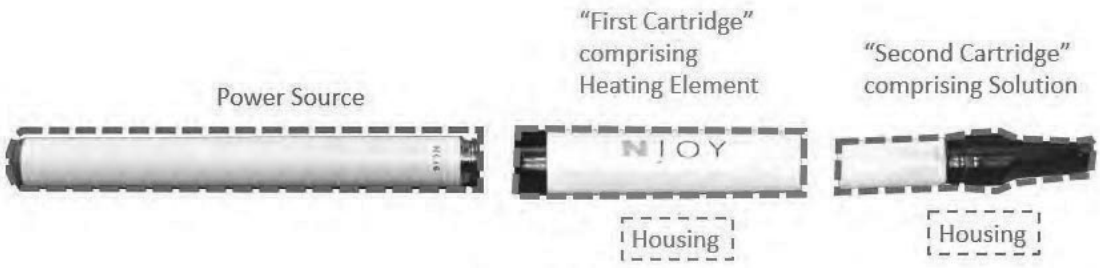


JX-0609.0001

As the evidence will show, a POSITA would have understood that the NPRO, NCIG, Cigarette Electronique, and Xia 610 (which are all alleged prior art devices addressed in Sections IV.E.4 and IV.F.4, below) are also "three-piece designs" comprising: (1) a power source, (2) a reusable atomizer unit, and (3) a disposable cartridge. *See* CX-2726 (Vallee Rebuttal Report) ¶ 101.



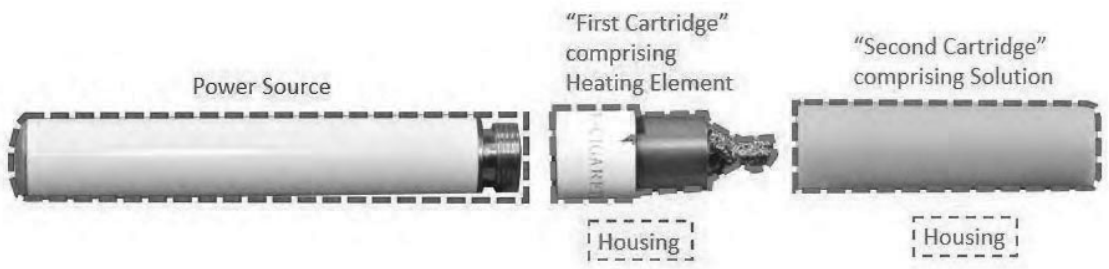
CX-2768.0001, .0003 (NPRO) (annotated)



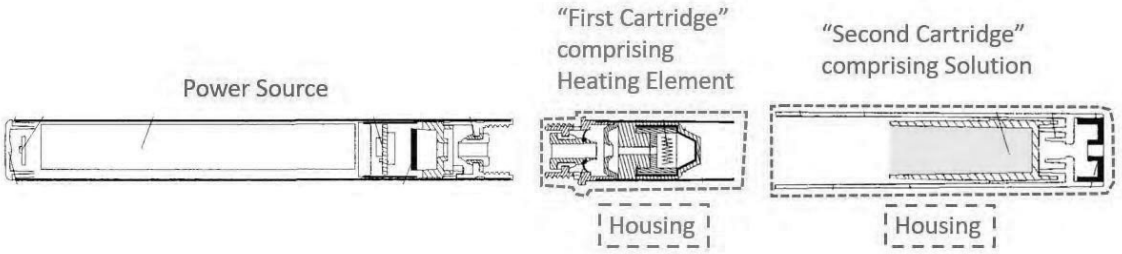
CX-2764.0001; CX-2765.0001 (NCIG) (annotated)

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CX-2763.0003, .0005 (Cigarette Electronique) (annotated)



JX-0596 (Xia 610) at Fig. 2 (modified and annotated)

Complainant anticipates that Respondent's expert, Mr. Leinsing, will argue that it was well known in the art and beneficial in 2009 to separate a one-piece e-cigarette design into a two-piece or three-piece design. JX-0632C (Leinsing Opening Report) ¶ 48. In his report, Mr. Leinsing provides a list of purported problems with one-piece designs which he contends support this argument. However, Mr. Leinsing fails to consider a number of alternative solutions to the alleged problems, which do not entail separating a one-piece design into a two-piece or three-piece design. For instance, Mr. Leinsing alleges for one-piece designs, "a user would need to buy an entire new device every time they needed to replace the atomizer, ran out of e-liquid, or wanted [*sic*] change to a different flavor, forcing the user to pay for the cost of the battery portion … as well every time the user needs to replace just one component of the e-cigarette." *Id.* However, the evidence will show a number of designs for one-piece devices existed prior to 2009, which provided alternative solutions to the problem Respondent's expert identifies. For example, Wang 927, which discloses

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a one-piece device, contemplates both refilling the device and replacing used components, as further explained in Sections IV.E.4.a)(4), IV.E.4.b)(4), and IV.F.4.b)(4). *See, e.g.*, JX-0594.0003 (Wang 927) ("A cigarette holder part is connected to the casing through threads, which facilitates disassembly and replacement of the cigarette filter and addition of liquid tobacco juice."), .0004 ("The cigarette butt 1 and a casing 18 are connected together by threads, and a spiral spring holds down a battery 3. The casing 18 is an aluminum alloy round pipe.").

Respondent's expert, Mr. Leinsing, further opines that "[w]ith a separable battery, for example, a user no longer needed to discard and purchase the whole e-cigarette just to replace one component or refill the e-liquid; the user could also replace just the batteries or recharge them for use with multiple cartridges, greatly simplifying the smoking experience." JX-0632C (Leinsing Opening Report) ¶ 48. However, Wang 927 with its threaded cigarette butt and cigarette holder allow the user to unscrew either or both for access to the inside of the casing to refill, recharge, or otherwise replace components.

Respondent's expert, Mr. Leinsing, argues that "[i]t became beneficial to separate the battery portion from the atomizer and e-liquid storage portions to reduce cost for users and provide users with greater flexibility in terms of how they used their e-cigarettes." JX-0632C (Leinsing Opening Report) ¶ 48. Wang 927, however, describes an e-cigarette "simple in structure, easy to manufacture and low in cost." JX-0594.0003 (Wang 927). Additionally, as Wang 927 is explicitly designed with "facilitat[ing] disassembly" and "addition of liquid tobacco juice" in mind, it is also able to provide the user flexibility which Respondent's expert contends one-piece designs were incapable of. *Id*. As Wang 927 shows, despite Respondent's expert's opinion to the contrary, it was well known by 2009 that it was not necessary that a consumer of one-piece devices would

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need to buy an entirely new device "every time they … ran out of e-liquid, or wanted [*sic*] change to a different flavor." JX-0632C (Leinsing Opening Report) ¶ 48.

Mr. Leinsing also argues that "[i]t was also well-known in the art to combine the e-liquid storage and the atomizer of a three-piece device to form a two-piece device. As early as 2008, industry leaders understood there to be several advantages to a two-piece design, including simplifying the process of refreshing the atomizer in an e-cigarette by allowing users to dispose of an atomizer and attach a new one to their e-cigarettes simply by switching to a new cartridge." JX-0632C (Leinsing Opening Report) ¶ 49. The only thing Respondent's expert cites for support that "industry leaders" understood advantages of cartomizer-type two-piece designs, is a single website advertisement for Smoke Fifty One. *See* JX-0624. In reality, before the invention of the asserted patents, it was understood that cartomizer-type two-piece designs (such as the Smoke Fifty One) had well-known disadvantages.

For example, cartomizer-type two-piece designs were expensive, because the more-expensive atomizer component (which is reusable in three-piece and one-piece designs) would have to be disposed when the liquid in the cartridge depleted. Indeed, Han 364, which Respondent contends is prior art to the Asserted Patents, explains that despite "many disadvantages" of three-piece designs (which Han 364 refers to as a "cartridge-type atomizer" or "cartridge method"), two-piece designs (which Han 364 refers to as a "disposable integrated-type atomizer") were still "not as popular" due to being "much more expensive." JX-0631 (Han 364) at [0014], [0015], [0020]; *Id.* at [0034]. Han 364 also acknowledges "the disadvantages of existing products in that they require high daily electronic cigarette costs and atomizer replacement costs." *Id.* at [0001]. Han 364 is further explained in Sections IV.E.4.a)(5), IV.E.4.b)(5), and IV.F.4.b)(5).

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Evidence shows that three-piece designs were preferable to cartomizer-type two-piece designs, even though three-piece designs had their own disadvantages. Han 364 explains that in three-piece designs, "the total length of the cartridge inserted into the atomizer has to be long, making it difficult to meet the needs of consumers who want a size as small as a tobacco cigarette. In addition, trying to shorten the length of the cartridge as much as possible has the disadvantage of reducing its size, which ultimately results in a very small amount of nicotine liquid contained within it." *Id.* at [0014]. It further explains that "the amount of nicotine liquid is very small, so the average user consumes 3 to 4 cartridges a day, making the cost of smoking very high." *Id.* Despite all of these acknowledged disadvantages of three-piece designs, however, as Han 364 explains, existing two-piece designs were still "not as popular as [three-piece designs]" due to cost. *Id.* at [0015]. Han 364 repeatedly acknowledges the popularity at the time of three-piece designs over two-piece designs. *See, e.g.*, *id.* at [0003], [0020].

Named inventor, Greg Conley, further explained that known cartomizer-type two-piece designs (like the Smoke Fifty One) had other flaws besides cost and waste, including that the atomizer within the cartridge would often burn the absorbent material holding e-liquid, leaving an unwelcome taste. *See, e.g.*, CX-1377C (2/29/2024 Conley) at 75:12-21 (describing disadvantages of the Smoke Fifty-One Duo, a three-piece design), 86:5-15; *see also* JX-0631 (Wang 364) at [0017] ("[I[n the current filament heating atomizer method, the organic substances contained in the liquid are inevitably burned, and the carbon residue is adsorbed into the filament and accumulates on the filling fiber (5), resulting in a burnt smell and the function of the atomizer deteriorates as it is used"), CX-1377C (2/29/2024 Conley) at 99:8-100:3 (describing difficulty inhaling from the device and excess liquid droplets during inhale).As explained below, the Asserted Patents changed the industry's view of cartomizer-type two-piece e-cigarettes with its

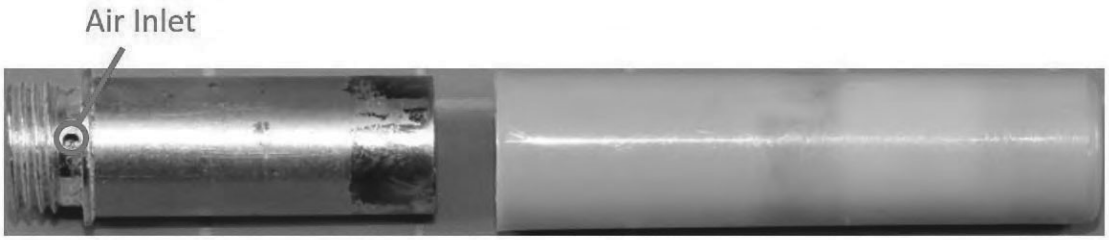
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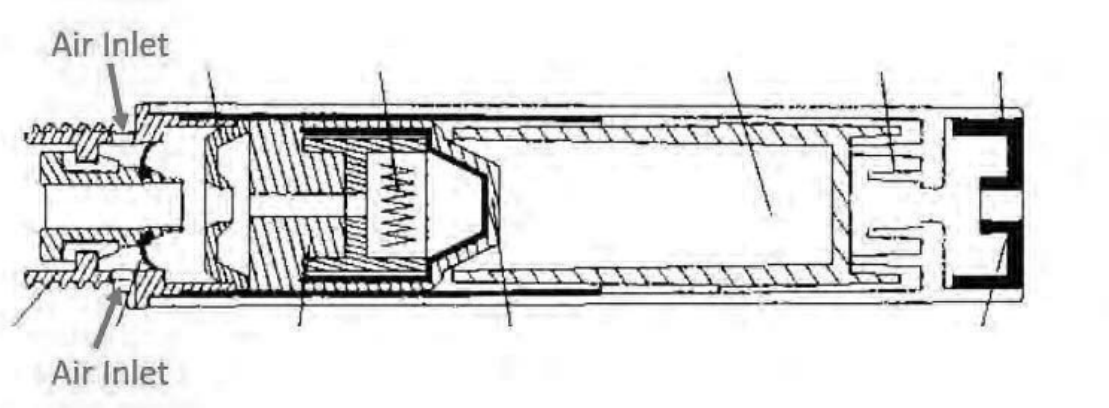
revolutionary design. *See* Sections I.D (The Asserted Patents) and IV.G (Objective Indicia of Non-Obviousness).

2. Apertures and Ends

Complainant anticipates that respondent's expert, Mr. Leinsing, will opine that "[i]t was well-known in the art that a cartridge needs apertures on two opposite ends for the air to go through it." JX-0632C (Leinsing Opening Report) ¶ 57. However, several of the prior art references and products that Respondent and its expert relies on do not have the air inlet located opposite to the outlet. For example, putting aside that they do not include a cartomizer-type cartridge, the NPRO device, Xia 610's device, and Wang 927's device do not have an air inlet located opposite to the outlet.



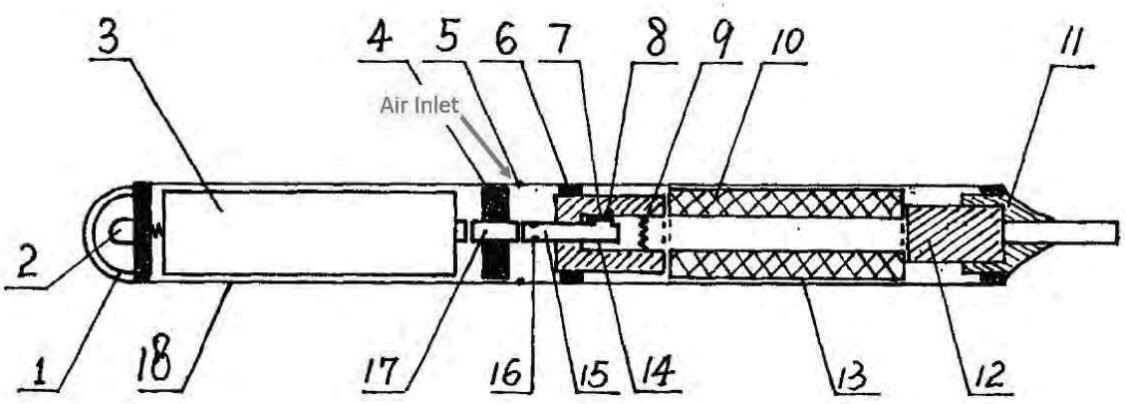
CX-2768.0003 (annotated)



JX-0596 (Xia 610) at Fig. 2 (annotated)

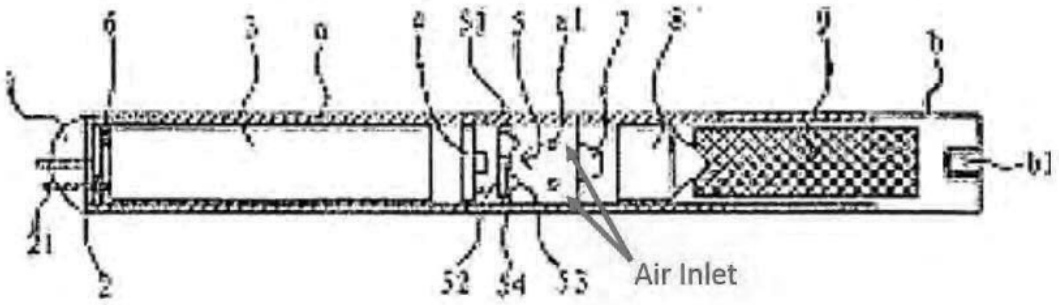
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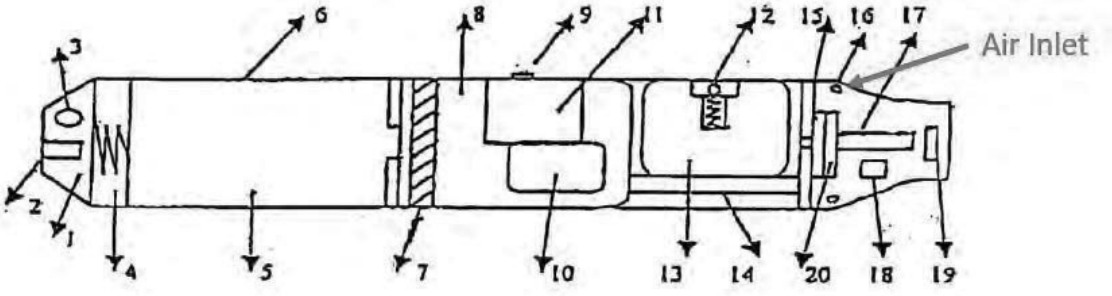


JX-0594 (Wang 927) at Fig. 1 (annotated)

Moreover, numerous references on Respondent's notice of prior art also do not have the air inlet located opposite to air outlet, including the exemplary references included below.

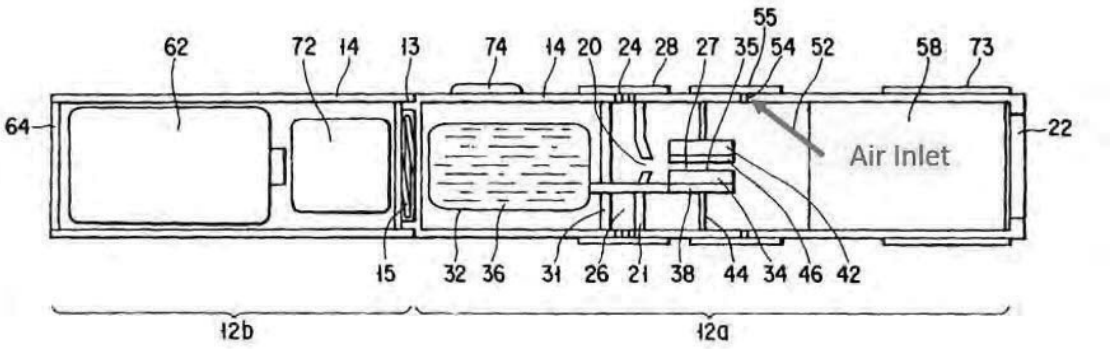


JX-0544 (Han 311) at Fig. 1 (annotated)



CX-2252 (Lik 518) at Fig. 1 (annotated)

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CX-2947 (Zhu 220) at Fig. 1 (annotated)

3. Heating Element

While transverse and axial heating elements may have been well known in the art, cartomizer-type two-piece e-cigarettes only employed axial heating elements. It was not until after the invention of the Asserted Patents, and Fuma's commercialization of that invention, that copiers adopted Fuma's design that employed a cartomizer with a transverse heating element located within a central, axial airflow passageway. There are numerous examples of these copiers identified in Section IV.G.1 (Objective Indicia of Non-Obviousness). Notably, Respondent's expert, Mr. Leinsing, has not pointed to or identified any examples of a prior art cartomizer-type, two-piece e-cigarette, which used a transverse heating element. The KR808D-1 for example, which Respondent's expert cites as support, is not prior art, as explained in more detail below. While there were certain examples of three-piece and one-piece devices having transverse or horizontal heating elements prior to the invention of the asserted patents, those heating elements were not confined within a small space such as an airflow passageway (as would be the case in a cartomizer) and were not disposable.

For example, Han 364 attempts to describe the types of e-cigarette devise that were known in the art. It depicts a three-piece device as using a transverse heating element and a two-piece device as using an axial heating element. The inventor of Han 364 was not attempting to depict

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any specific devices, but instead, exemplars of that class of device. As such, its depiction of the three-piece exemplar as using a transverse heating element and the two-piece exemplar as using an axial heating element is telling evidence of what was generally known in the art. *See also* Section IV.G (Objective Indicia of Non-Obviousness) (describing the start of the art before and after the invention of the Asserted Patents).

1. KR808D and Related Devices Alleged to Be Background Art by Respondent's Expert

Complainant expects that Respondent's expert, Mr. Leinsing, will allege that the device referred to as "KR808D" "has a substantially similar design as the Fuma Prototype" and was available prior to the inventions of the Asserted Patents. JX-0632C (Leinsing Opening Report) ¶¶ 68-70. But in his report Mr. Leinsing has not cited any evidence to establish that the device he depicts in his report is a KR808D device "sold and/or in public use in the United States by no later than no later than Jul. 17, 2009." JX-0632C (Leinsing Opening Report) ¶¶ 67-70.

As a preliminary matter, it does not appear Mr. Leinsing ever inspected a KR808D cartomizer. JX-0632C (Leinsing Opening Report) ¶ 67 ("However, because KR808D uses disposable cartomizer [*sic*], it has been very difficult to source one."). Mr. Leinsing further admits his opinion is solely based on third-party depictions. *Id.* ¶ 68 ("Photos and description of KR808D show that it has a substantially similar design as the Fuma Prototype[.]").

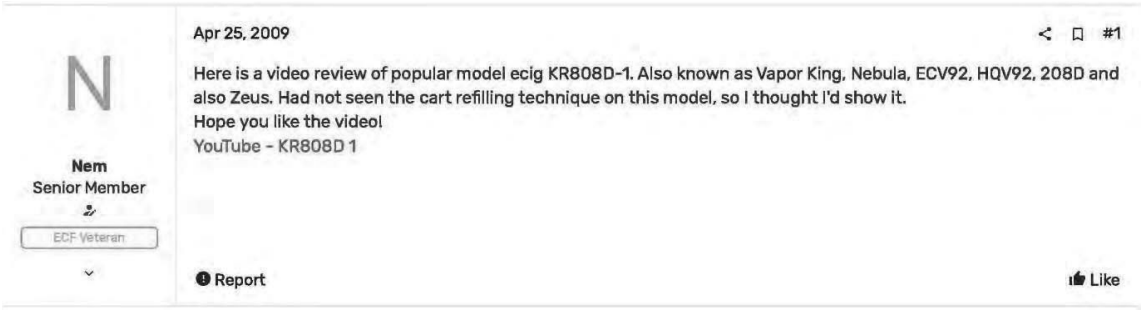
In lieu of any personal experience with a KR808D, Mr. Leinsing will likely rely on third-party documents in order to characterize this purported device. *See* JX-0632C (Leinsing Opening Report) ¶¶ 67-70. However, these documents are fraught with ambiguities and outright missing information, and do not bear the weight of the opinions Mr. Leinsing rests upon them.

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First, Mr. Leinsing cites three website printouts as alleged evidence that a KR808D was on sale or in public use by July 17, 2009, but as explained below, none of these printouts—alone or in combination—support Mr. Leinsing's allegations. *See id.* ¶ 67.

The first website printout (JX-0602), which he refers to as "E-Cigarette Form [*sic*] Post," appears to discuss a "KR808D-1" device. JX-0602.0001; JX-0632C (Leinsing Opening Report) ¶ 67. Mr. Leinsing appears to rely on a post by "Nem," reproduced below, to support his statements that a "YouTube Video was posted on KR808D and that the KR808D was also known as Vapor King." JX-0632C (Leinsing Opening Report) ¶ 67; JX-0602.0001.



JX-0602.0001 (showing "Nem" post).

The "Nem" post, the name of the YouTube video link shown in the post, and the entire website printout all reference a "KR808D-1," not a KR808D, and none of this shows any pictures of the device or provides any specifications for the device. JX-0602.0001-.0009 (discussing a "KR808D-1" device and providing no specifications thereof). Moreover, when Complainant's expert accessed the website corresponding to the printout, Complainant's expert was unable to access the YouTube link associated with the "Nem" post. *Id.*; CX-2959 (showing a "Nem" post under the heading "Apr 26, 2009" and containing a "YouTube - KR808D 1" link that does not resolve to any video on https://www.youtube.com/). Additionally, the website printout does not provide evidence to support Respondent's expert's statement that "the KR808D was also known

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as Vapor King," because the printout discusses "KR808D-1," not KR808D. JX-0632C (Leinsing Opening Report) ¶ 67; JX-0602.0001-.0009.

The second website printout (JX-0601), which Respondent's expert refers to as "Electronic Cigarettes Inc. Web Archive" appears to discuss both a "KR808D Disposable Atomizer - Electronic Cigarette Kit" and a "Vapor King 510 - Electronic Cigarette Kit." JX-0601.0001; JX-0632C (Leinsing Opening Report) ¶ 67. First, this website printout contains no images depicting either the KR808D or the Vapor King 510. Further this printout shows that "Vapor King" is not synonymous with KR808D because it lists "KR808D" and "Vapor King 510" as separate devices. JX-0601.0001. Indeed, this printout explicitly includes a section titled "KR808D vs Vapor King 510?" highlighting a number of differences between the two products. *Id.* For example, this printout describes the "Vapor King 510" as a three-piece device. *Id.* Moreover, the Vapor King 510 was also known as simply the "Vapor King" since its launch, despite the acknowledged existence of older versions. CX-2802.0001 (announcing the Vapor King 510, referring to it as "Vapor King," and highlighting "older version[s] of the vapor king model.")

The third website printout (JX-0610), which Respondent's expert refers to as "Vapor4Life Web Archive" appears to discuss a "Vapor King Pre-sale!" JX-0610.0001; JX-0632C (Leinsing Opening Report) ¶ 67. This website printout appears to show only that a "Vapor King" device was available for presale, not that a "Vapor King" device was on sale. *See* JX-0610.0001. Additionally, this website printout does not show any corresponding part numbers for the listed "Vapor King" device, any internal components or structure of the "Vapor King" device, or any mention of a "KR808D" device. *See id.*

Next, Mr. Leinsing contends that "[p]hotos and description of KR808D show that it has a substantially similar design as the Fuma Prototype[.]" JX-0632C (Leinsing Opening Report) ¶ 68.

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[redacted]

Mr. Leinsing's sole support cited for his opinion is the same "Electronic Cigarettes Inc. Web Archive" website printout is described above. JX-0601. This printout also fails to support Mr. Leinsing's arguments. First, to the extent this website printout accurately describes the KR808D device, the ***only*** features Mr. Leinsing alleges the devices shares with the Fuma Prototype are disposable cartomizers with screw-on coupling. JX-0632C (Leinsing Opening Report) ¶ 68. As explained above, this printout provides no further information about the internal structure of the KR808D and no images of the KR808D whatsoever. JX-0601. Respondent's expert merely speculates that the KR808D cartomizer "***would*** have two ends with one aperture on each end," and cites no support for this opinion. JX-0632C (Leinsing Opening Report) ¶ 68 (emphasis added). Second, as explained above, this website printout makes clear that the KR808D and Vapor King 510 are different devices, contrary to Mr. Leinsing's assertions.

Next, Mr. Leinsing opines that the KR808D is "similar to the Fuma Prototype, includes a woven spacer along the central axis of the cartomizer housing, with a slit at the bottom that allows the heating coil to extend in the horizontal direction. The heating coil of the KR808D also includes a wick in the center, similar to the Fuma Prototype." JX-0632C (Leinsing Opening Report) ¶ 69. Mr. Leinsing cites two sources as support. First, he cites a photograph titled [redacted] JX-0617C. He compares this image to an image of the Fuma Prototype. Second, he cites the "Vapor4Life Web Archive" website printout. JX-0610. These sources, too, fail to support Mr. Leinsing's argument.

With regards to the [redacted] photograph, the file path included in the metadata refers to a specific document repository. A file directory for this document repository was

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produced. CX-2758.0023. This file directory lists the [redacted] he fails to substantiate his belief with any support. JX-0632C (Leinsing Opening Report) ¶ 69.

With regard to the "Vapor4Life Web Archive" website printout, this website printout appears to show only that a "Vapor King" device was available for presale, not that a "Vapor King" device was on sale. *See* JX-0610. Additionally, this website printout does not show any corresponding part numbers for the listed "Vapor King" device, any internal components or structure of the "Vapor King" device, or any mention of a "KR808D" device. *See id.*

Next, Mr. Leinsing opines that "[t]he KR808D includes a batting material that surrounds the woven spacer and heating coil, similar to the Fuma Prototype." JX-0632C (Leinsing Opening Report) ¶ 70. He cites a RoHS Test Report for "KR 808D-1, KR 308-1, KR808-1" devices received on April 5, 2012 as support. *Id.*; JX-0597C. This alleged test result is deficient and does not support Mr. Leinsing's allegations at least because it: (1) analyzes devices with the part numbers "KR 808D-1, KR 308-1, KR808-1"—not KR808D—that (2) were received April 5, 2012—long after Mr. Leinsing's alleged July 17, 2009 on-sale or in-use date. *See* JX-0597C.0001-.0002.

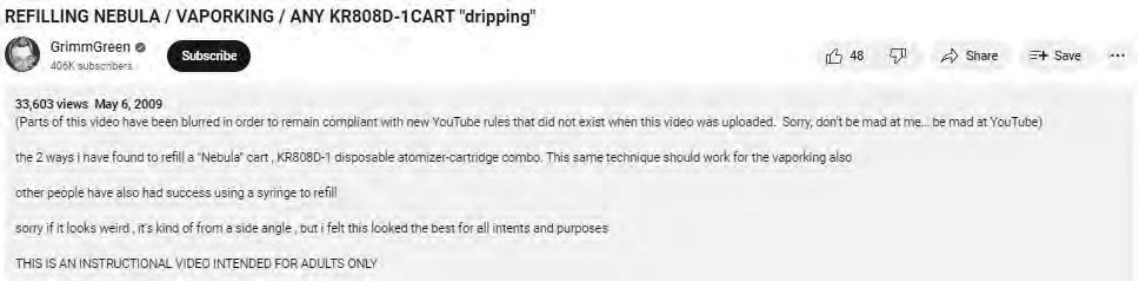
For at least these reasons, at the hearing Mr. Leinsing will not be able to present evidence showing that: (1) the devices shown in the [redacted] or RoHS Test Report Respondent's expert cites correspond to the KR808D; (2) the "Vapor King," "KR808D-1," or other device variants are equivalent to the KR808D; or (3) any of the devices he relies on as embodying the KR808D were on sale or in public use by July 17, 2009.

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[redacted]

Additionally, based on reviews by Complainant's expert, Dr. Vallee, of YouTube videos which are described below dating variously to May, September, and December of 2009, depicting the disassembly of cartomizers from devices described variously as "KR808D-1," "Nebula," "VaporKing," or "Vapor King," these devices throughout 2009 did not have similar structures to the Fuma Prototype.

The first video is titled "REFILLING NEBULA / VAPORKING / ANY KR808D-1CART 'dripping'" by GrimmGreen, dated May 6, 2009, available at https://www.youtube.com/watch?v=2W6JAI-twgg, which is referred to as the "GrimmGreen video" (produced as CX-2804). Illustrative captures of the video and video description are included below:



CX-2804 (Video Description of GrimmGreen video)

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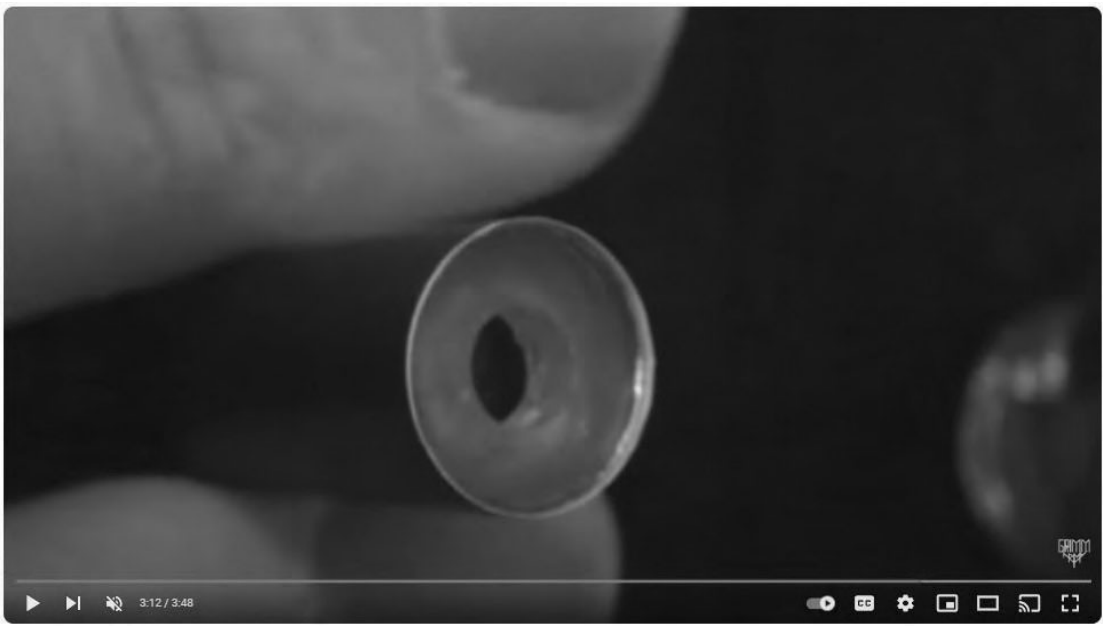
CX-2804 (Screen Capture of GrimmGreen video at 2:08)



CX-2804 (Screen Capture of GrimmGreen video at 2:41)

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[redacted]



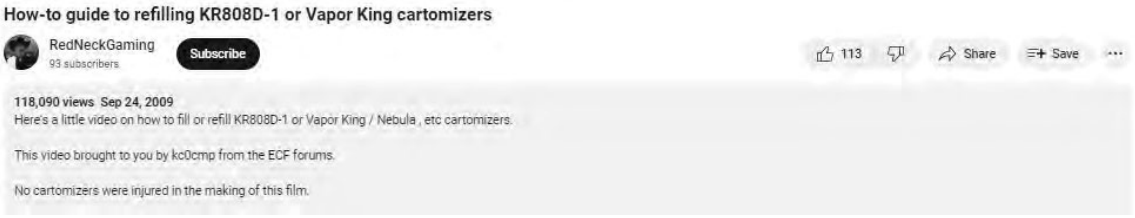
CX-2804 (Screen Capture of GrimmGreen video at 3:12)

As can be seen from the above screen captures, the cartomizer depicted in the GrimmGreen video does not have a similar structure to the Fuma Prototype. For example, it lacks, at least, a woven spacer. As another example, as can be seen in, at least, the 2:41 screen capture, it has a wire looping through what appears to be an airflow passageway and batting, which is indicative of an axial heating coil.

The second video referenced is titled "How-to guide to refilling KR808D-1 or Vapor King cartomizers" by RedNeckGaming, dated September 24, 2009, available at https://www.youtube.com/watch?v=8pyzOGQ0tMo, which is referred to as the "RedNeckGaming video" (produced as CX-2805). Illustrative captures of the video and video description are included below:

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[redacted]

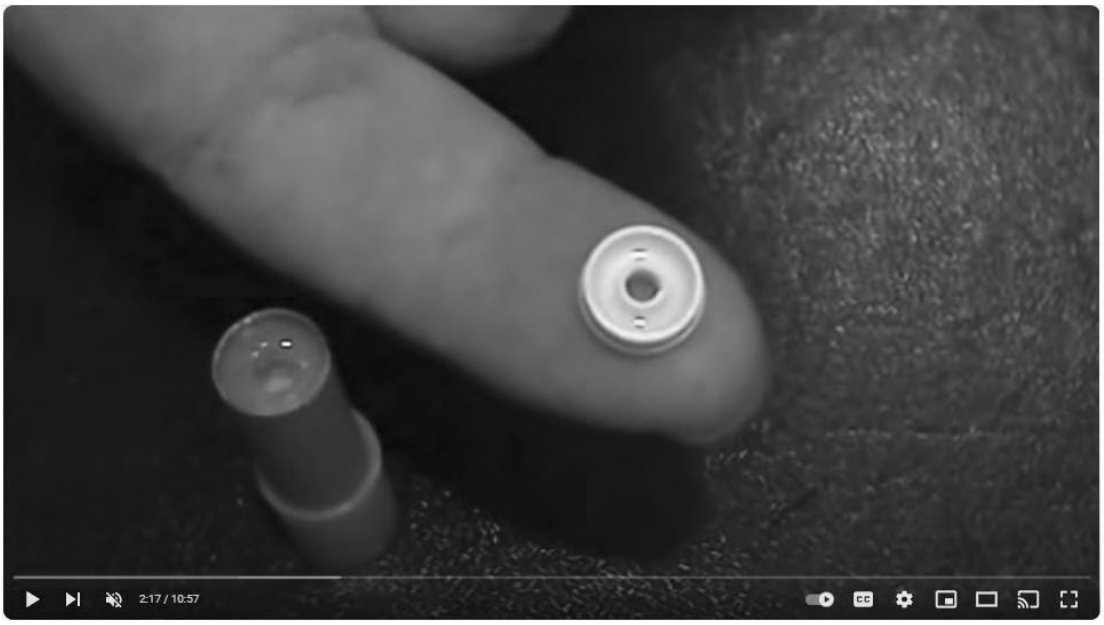


CX-2805 (Video Description of RedNeckGaming video)



CX-2805 (Screen Capture of RedNeckGaming video at 2:11)

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CX-2805 (Screen Capture of RedNeckGaming video at 2:17)



CX-2805 (Screen Capture of RedNeckGaming video at 2:28)

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CX-2805 (Screen Capture of RedNeckGaming video at 2:48)



CX-2805 (Screen Capture of RedNeckGaming video at 7:55)

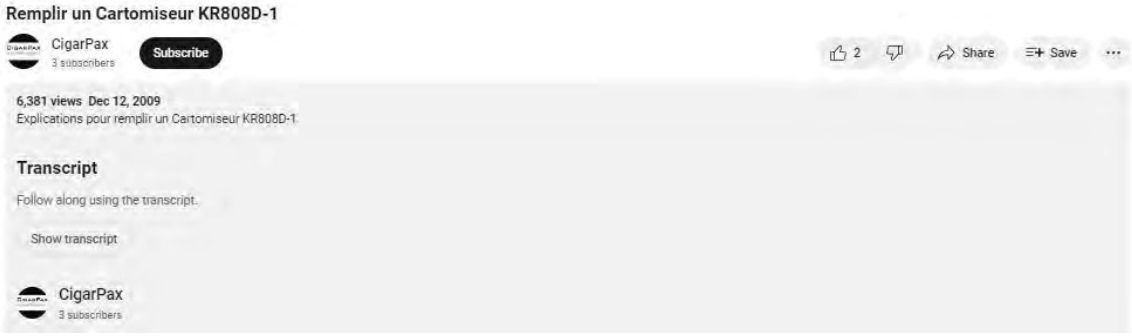
As can be seen from the above screen captures, the cartomizer depicted in the RedNeckGaming video does not have a similar structure to the Fuma Prototype. For example, it

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[redacted]

lacks, at least, a woven spacer. As another example, as can be seen in, at least, the 2:48 and 7:55 timestamped screen captures, it has a wire looping through what appears to be an airflow passageway and batting, which is indicative of an axial heating coil.

The third video is titled "Replir un Cartomiseur KR808D-1" by CigarPax, dated December 12, 2009, available at https://www.youtube.com/watch?v=mL6U48Db9Zw, which is referred to as the "CigarPax video" (produced as CX-2806). Illustrative captures of the video and video description are included below:



CX-2806 (Video Description of CigarPax video)

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[redacted]



CX-2806 (Screen Capture of CigarPax video at 0:53)

As can be seen from the above screen capture, the cartomizer depicted in the CigarPax video does not have a similar structure to the Fuma Prototype. For example, it lacks, at least, a woven spacer. As another example, as can be seen in, at least, the 0:53 screen capture, it has a wire looping through what appears to be an airflow passageway and batting, which is indicative of an axial heating coil.

In his report, Respondent's expert, Mr. Leinsing, also provides a list of devices and cites to various documents which allegedly support his assertion that "devices available in 2008-2010 also had similar structures as the KR808D with a woven spacer in the center and a heating coil

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[redacted]

extending in the horizontal direction." JX-0632C (Leinsing Opening Report) ¶ 71. However, none of the cited evidence supports this contention, as explained below:

- KR308D (JX-0597C.0001-.0016): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a RoHS Test Report from Shenzhen Setek Technology Co., Ltd., Report No.: ROS1204036R, addressing Model No.: KR 808D-1, KR 308-1, and KR 808-1. On its face, this report indicates the samples tested were received April 5, 2012. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- Duo Pro (JX-0598.0001-.0002): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated October 22, 2009. This document does not provide any information on the internal structure of the Duo Pro device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- Electronic Cigarettes Inc. Premium (Disposable Atomizer) Electronic E Cigarette (JX-0600.0001-.0003): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated to an uncertain date in June 2009. This document does not provide any information on the internal structure of the Electronic Cigarettes Inc. Premium (Disposable Atomizer) Electronic E Cigarette device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- JSB Vgo (JX-0068.0001-.0002): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated June 27, 2010. This document does not provide any information on the internal structure of the JSB Vgo device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- Kanger E9 (JX-0599.0001-.0007): The sole document Mr. Leinsing points to as support for his assertion above

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[redacted]

regarding this device is a forum discussion thread from www.e-cigarette-forum.com titled, "E9 parts, reasonably priced, in the US," dated June 9, 2010. This document does not provide any information on the internal structure of the Kanger E9 or the KR808 devices. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- [redacted] (JX-0603, JX-0615C.0001; [CX-2963C.0001-.0004, JX-0622C.0001; CX-2964.0001-.0003): For all of the reasons stated below, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- JX-0603: This document is a Wayback Machine page capture dated September 28, 2008. This document does not provide any information on the internal structure of the Nicocig ECig device.

- JX-0615C.0001; CX-2963C.0001-.0004: These documents are unlabeled and undated photographs depicting what Mr. Leinsing seems to allege are various components of the [redacted]. Per the folder path included in the metadata of these documents, they were stored in a sub-folder named [redacted] A file directory for the parent folder was provided at JX-0621C. The [redacted] folder is listed in this file directory at line 4258. The [redacted]

- JX-0622C.0001; CX-2964.0001-.0003: These documents are unlabeled and undated photographs depicting what Mr. Leinsing seems to allege are various components of the [redacted]. Per the folder path included in the metadata of these documents, they were stored in sub-folders named [redacted] A file directory for the parent folder was provided at JX-0621C. The [redacted] folder is listed in this file directory at line 4259. The [redacted] folder is listed in this file directory at line 4258. The [redacted].

- DSE-103 (CX-2748.0001-.0008): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture

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[redacted]

dated January 23, 2009. This document does not provide any information on the internal structure of the DSE-103 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-601 (CX-2748.0009-.0015): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated January 23, 2009. This document does not provide any information on the internal structure of the DSE-103 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-801 (CX-2748.0016-.0022): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated January 23, 2009. This document does not provide any information on the internal structure of the DSE-801 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-084 (CX-2749.0001-.0002): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated September 7, 2009. This document does not provide any information on the internal structure of the DSE-084 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-097 (JX-0479.0001-.0002): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated September 7, 2009. This document does not provide any information on the internal structure of the DSE-097 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-107 (CX-2749.0009-.0010): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated September 7, 2009. This document does not provide any information on the internal structure of the DSE-107

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[redacted]

device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-101 (JX-0606.0001-.0002): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated October 10, 2009. This document does not provide any information on the internal structure of the DSE-101 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- DSE-102 (JX-0607.0001-.0002): The sole document Mr. Leinsing points to as support for his assertion above regarding this device is a Wayback Machine page capture dated October 10, 2009. This document does not provide any information on the internal structure of the DSE-102 device. Accordingly, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- [redacted] (JX-0608.0001-.0002, JX-0616C.0001; CX-2966C.0001-.0005, JX-0623C.0001; CX-2965.0001-.0005): For all of the reasons stated below, Mr. Leinsing does not provide any basis for his opinion that this device was available in 2008-2010 in the specific configuration he alleges.

- JX-0608.0001-.0002: This document is a Wayback Machine page capture dated April 5, 2010. This document does not provide any information on the internal structure of the SmokePass device.

- JX-0616C.0001; CX-2966.0001-.0005: These documents are unlabeled and undated photographs depicting what Mr. Leinsing seems to allege are various components of the [redacted]. Per the folder path included in the metadata of these documents, they were stored in a sub-folder named [redacted] A file directory for the parent folder was provided at JX-0621C. The [redacted] folder is listed in this file directory at line 4270. The [redacted]

- JX-0623C.0001; CX-2965.0001-.0005: These documents are unlabeled and undated photographs depicting what Mr. Leinsing seems to allege are various components of the

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[redacted]

[redacted]. These documents do not provide any information on the internal structure of the [redacted] device relevant to the Asserted Claims.

D. The Asserted Patents

1. Overview

The 881 and 864 Patents contain substantially identical disclosures, both are titled "Electronic Vaporizer," and both name Gregory D. Conley and Daniel C. Hillenbrandt, Jr. as inventors. JX-0005 (881 Patent) at (72), JX-0001 (864 Patent) at (72). Complainant owns by assignment the entire right, title, and interest to the Asserted Patents. *See* JX-0007 (Patent Assignment August 11, 2023).

Both patents relate to electronic cigarettes, which are sometimes referred to as e-cigarettes or personal vaporizers. The 881 and 864 Patents disclose an e-cigarette having a cartridge having a housing that includes an interior where a heating element is located within or around an airflow and is configured to vaporize a solution in the airflow for oral provision to the individual.

The 881 and 864 Patents deal more particularly with cartridges that comprise heating elements configured to vaporize a solution for oral provision to an adult consumer. The below Figure 2 is an exemplary configuration of a cartridge for utilization in an electronic vaporizer as set forth in the patents.

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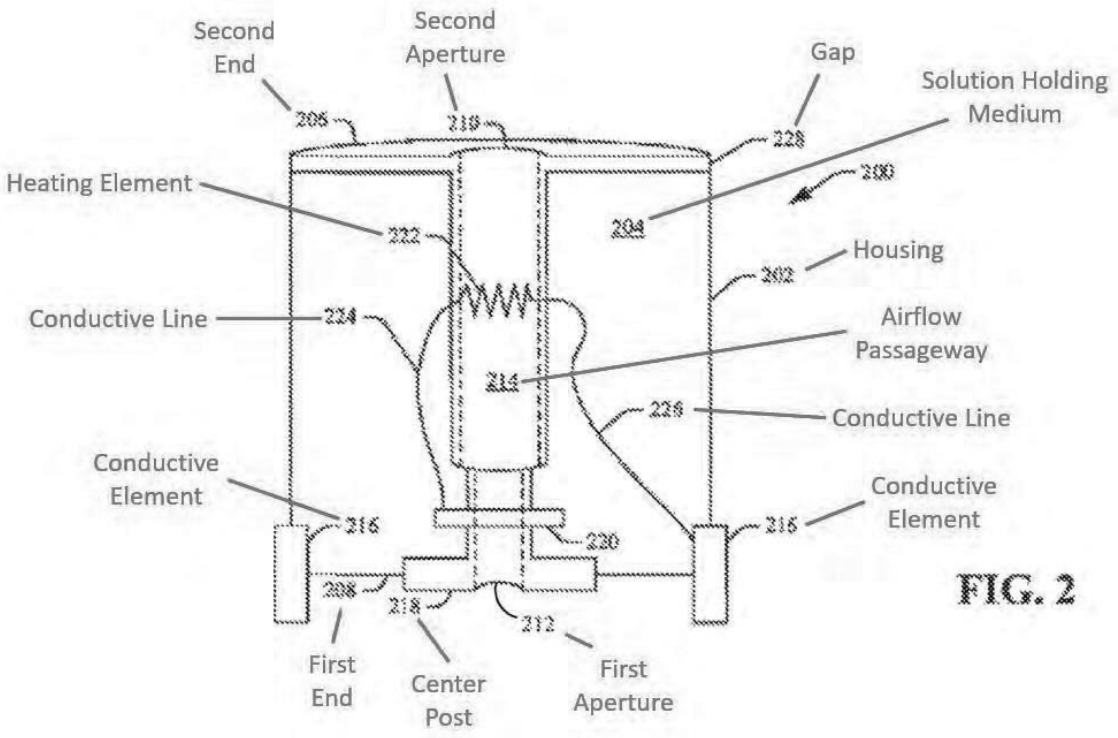


FIG. 2

JX-0005 (881 Patent) at Fig. 2 (annotated)[3]

As shown above, the cartridge embodiment in Figure 2 includes a housing 202 with a first end 208 and a second end 206 an aperture 212 proximate to first end 208, and an aperture 210 proximate to second end 206. According to this embodiment, air is able to flow between the first and second apertures through an airflow passageway 214. *See id.* at 6:19-24.[4] Within this airflow passageway is a heating element 222, which extends transversely across the passageway. *See id.* at 6:41-44, 6:62-67. The heating element 222 may include a wicking material to draw solution to the heating element from the surrounding solution holding medium (*e.g.*, an absorbent material

[3] Note, the specification calls item 208 the "second end," item 206 the "first end," item 212 the "second aperture," and item 210 the "first aperture." The identification of first/second ends and apertures in this section of the brief corresponds to the claimed first/second ends and to the claimed first/second apertures.

[4] The cited-to disclosures in the 881 Patent also exist in the 864 Patent.

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[redacted]

204 holding the solution). *See id.* at 6:1-3, 6:44-47; *see also id.* at 4:5-9. The heating element 222 is connected by conductive lines 224 and 226 to conductive element 216 and center post 218 that couple to corresponding conductive elements on the battery portion (not shown) of the device. *See id.* at 6:25-37, 6:41-44, 6:47-51. When the adult consumer inhales on the second end of the device, the battery portion powers the heating element, causing the solution in the wicking material to vaporize as airflow travels from the first aperture 212, over both sides of the heating element 222, and out of the second aperture 210 for inhalation. *See id.* at 6:51-67, 7:16-19. As shown, a gap 228 may be present to facilitate mixing air and the vaporized solution. *See id.* at 6:56-61; *see also id.* at 7:59-65. The Asserted Patents describe other embodiments, including where the heating element does not extend transversely across the airflow passageway, but rather wraps around its exterior. *Id.* at Fig. 3, 7:66-8:23. The heating element is configured to vaporize the solution responsive to receiving power from a power source (*e.g.*, a battery).

The asserted claims share some common features, including a cartridge which comprises a housing having first and second ends, a transverse heating element, and a solution holding medium. But there are differences among the claims. For example, independent claim 16 of the 881 Patent recites first and second apertures "on" the first and second ends of the housing, whereas independent claims 1, 9, and 25 of the 864 Patent recite first and second apertures "proximate" the first and second ends of the housing. JX-0005 (881 Patent) at Claim 16, JX-0001 (864 Patent) at Claims 1, 9, 25. As another example, independent claim 16 of the 881 Patent, as well as independent claims 1 and 25 of the 864 Patent, require an airflow passageway that extends centrally and axially, whereas independent claim 9 of the 864 Patent does not. JX-0005 (881 Patent) at Claim 16, JX-0001 (864 Patent) at Claims 1, 9, 25.

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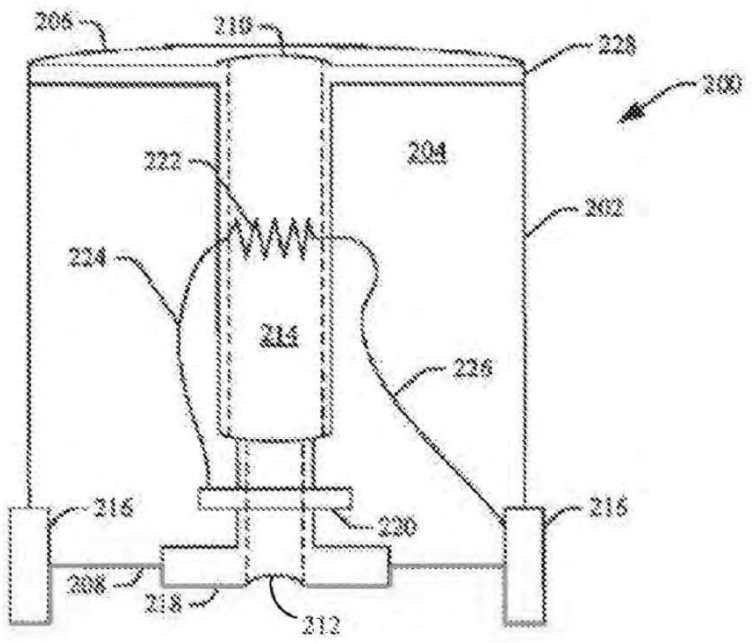
[redacted]

2. Rebuttal to Respondent's Analysis of the Asserted Patents

Complainant anticipates that Respondent, through its expert, Mr. Leinsing, will contend that the "[n]either aperture is distal from the end of the cartridge; both are located at the local exterior limit of the cartridge." JX-0632C (Leinsing Opening Report) ¶ 74. The evidence will show this is incorrect. Figure 2 of the Asserted Patents illustrates an aperture 210 that is positioned at a top end (as oriented in the figure), and an aperture 212 that is both at and near a bottom end (as oriented in the figure) opposite the top end. In particular, top end is formed by a planar surface labeled 206 and the aperture 210 is shown as flush with that surface.

Figure 2 illustrates that the housing has a bottom end that is opposite end 206. The label 208 points to a surface of the bottom end, but the evidence will show that a POSITA would understand that the bottom end of the housing encompasses additional surfaces that are annotated below. The aperture 212 is positioned slightly lower than the plane of a surface labeled 208 that makes part of the bottom end, but is also positioned in the same plane as another surface that also makes up part of the bottom end.

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JX-0005 (881 Patent) at Fig. 2 (annotated)

With respect to the heating element described and claimed by the Asserted Patents, Respondent's expert, Mr. Leinsing, concludes that "[t]o vaporize solution, the heating element is described as being a center post that heats the solution holding medium, or a helical coil wrapped around a passageway." JX-0632C (Leinsing Opening Report) ¶ 75; *see also id.* ¶¶ 76-77, 80. To the extent Mr. Leinsing is attempting to characterize the claimed heating element, this characterization is incorrect. *First*, the center post 218 is not the structure for the claimed heating element, and the evidence will show that a POSITA would not have interpreted Figure 2 in that way. The claims all require that the heating element "extend[] transversely across the airflow passageway" or extend transversely to the "central longitudinal axis of the housing," and the center post 218 does neither. With respect to Figure 2, the only transverse heating element described and depicted is heating element 222. There is no discussion of using center post 218 to vaporize liquid in the description of Figure 2 in the Asserted Patents. Only the "heating element 222" is described

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[redacted]

as vaporizing liquid solution. *See* JX-0005 (881 Patent) at 6:41-7:19; JX-0001 (864 Patent) at 6:43-7:21. And even if the "center post 218" could operate as a heating element, there is no discussion of using two different kinds of heating elements in the same cartridge. Moreover, the evidence will show that it would be uncommon to use two different kinds of heating elements, back-to-back, in a single cartridge to vaporize liquid. *Second*, "a helical coil wrapped around a passageway" is also not the structure for the claimed heating element. In fact, the claims require that the heating element "extend[] transversely across the airflow passageway" or extend transversely to the "central longitudinal axis of the housing." In contrast to the configuration of the heating element illustrated in Figure 2, the Asserted Patents disclose a different embodiment in which the heating element does not extend transversely across the airflow path or central axis. In Figure 3, in particular, the Asserted Patents illustrate a heating element 302 that may "wrap around the exterior of the airflow chamber 214." JX-0005 (881 Patent) at 7:66-8:1. Mr. Leinsing relies on descriptions in the Asserted Patents where the heating element wraps around the airflow passageway or exterior of the airflow chamber. JX-0632C (Leinsing Opening Report) ¶ 75 (citing JX-0001 (864 Patent) at 7:7-14, 8:1-22). In those passages, as well as Figure 3, the heating element does not extend transversely across the airflow path or central axis.

Respondent and its experts, *e.g.,* Mr. Leinsing, may also attempt to draw a distinction between two purported airflows—a first airflow that exists only between aperture 212 and aperture 210, and second airflow that exists only after the air flows out of aperture 210. JX-0632C (Leinsing Opening Report) ¶ 75. That conclusion would be mistaken, however. There is only one airflow—*i.e.*, the Asserted Patents disclose an airflow passageway that carries air during inhalation from the aperture 212 (the claimed first aperture), through the airflow passageway 214 where the heating

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[redacted]

element vaporizes solution that mixes with the air, and out the aperture 210 (the claimed second aperture) for oral consumption by an adult consumer.

Respondent may also try to oversimplify the claims "to three basic components"—an airflow passageway, a heating element, and a solution holding medium. JX-0632C (Leinsing Opening Report) ¶ 78. The claims, however, are more detailed and describe far more limitations. Each claim limitation should be considered and read entirely as a whole in the context of each claim.

Complainant anticipates that Respondent may also try to argue that the claimed heating element may not comprise a wick. In his report, and applying Respondent's proposed construction of "heating element . . . " Mr. Leinsing concludes that "[w]hen the heating element relies on a separate, non-heating wick to bring solution to it, the heating element is not configured to vaporize solution held in the solution holding medium as required by the claims." JX-0632C (Leinsing Opening Report) ¶ 80. However, as the evidence will show, a heating element that comprises a non-heating wick is still a heating element configured to vaporize solution as required by the claims.

Moreover, to the extent Respondent or its expert, Mr. Leinsing, assert that "the disclosure of both Asserted Patents fails to explain many of the features recited in the Asserted Claims" (JX-0632C (Leinsing Opening Report) ¶ 83), that is incorrect as further explained here. *See, e.g.*, Sections IV.E.c) and IV.F.c).

3. Prior Litigation between Fuma International LLC and R.J. Reynolds Vapor Company

The 881 Patent and another patent in the same family, U.S. Patent No. 9,532,604, were asserted against the Vuse Solo System and Vuse Ciro System marketed by R.J. Reynolds Vapor Company ("Reynolds" or "RJR") in *Fuma Int'l v. R.J. Reynolds Vapor Co*., Case No. 1:19-cv-260

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(M.D.N.C.) ("Fuma RJRV Litigation"). Complainant's expert, Dr. Vallee, provided expert opinions in the Fuma RJRV Litigation on the issues of infringement and validity of the 604 and 881 Patents.

The court in the Fuma RJRV Litigation issued a claim construction order. RX-0132C. The constructions relevant to the 881 Patent are reproduced in the table below.

Claim Term	**Court's Construction**
"solution holding medium"	A location, container, or mechanism to hold the solution, including but not limited to at least one of an absorbent material, a chamber, a reservoir, a capsule, or any combination thereof.
"the power source includes an electrically conductive portion / the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source" (Claim 1) "the housing having an electrically conductive portion adapted to mechanically and electrically couple to the electrically conductive portion of the power source " (Claim 8) "the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source " (Claim 16)	Ordinary meaning: "A portion that is electrically conductive."
"wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium" (Claim 1) "the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium reservoir" (Claim 8)	Ordinary meaning. The solution can be, but need not be, in the solution holding medium when vaporized by the heating element.

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[redacted]

Claim Term	Court's Construction
"the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium" (Claim 16)	
"an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing; wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing." (Claim 1) "an airflow passageway in the interior of the housing extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing." (Claim 8) "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" (Claim 16)	The airflow passageway extends in a straight path through the center of the cartridge from a first opening on the first end to a second opening on the opposite end of the cartridge.

Complainant considers the court's claim constructions instructive to the extent they do not conflict with the parties' or the Staff's proposed constructions or any claim constructions orders issued by the ALJ in this investigation. One example of a construction from the Fuma RJRV Litigation that conflicts with the construction adopted here is for the "airflow passageway" terms.

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[redacted]

Whereas the construction for this term in the Fuma RJRV Litigation holds that the "airflow passageway extends in a straight path through the center of the ***cartridge*** from a first opening on the first end to a second opening on the opposite end of the ***cartridge***," the parties in this Investigation chose, expressly adopted, a different (but correct) construction: "The airflow passageway extends in a straight path through the center of the ***housing*** from a first opening on the first end to a second opening on the opposite end of the ***housing***." CC Order at 5.

In the Fuma RJRV Litigation, the court issued a summary judgment order, finding, among other things, that the Vuse Solo System directly infringes claims 1 and 8 of the 881 Patent. CX-2277.

First, the court found that the word "portion," as used in the claim term "electrically conductive portion," is not limited a single feature, but an area where such features are located. CX-2277.0008-.0009.

Second, the court found that the recited "airflow passageway that extends centrally and axially," which the court had construed to require an "airflow passageway [that] extends in a straight path through the center of the cartridge from a first opening on the first end to a second opening on the opposite end of the cartridge," does not preclude existence of obstructions in the airflow passageway. CX-2277.0014-.0016. Specifically, the Vuse Ciro System comprises an airflow passageway having several obstacles contained within, including a positive pin, a silicone base, and a heating element. *Id.* at .0015. Air must travel around and through these obstacles and does not travel in a straight line. *Id.* Nevertheless, the court warned against conflating the airflow's path with the airflow passageway and found that the existence of these obstacles do not change the fact that Vuse Ciro comprises a recited airflow passageway. *Id.*

The court also provided helpful guidance in distinguishing structures that are merely obstacles versus part of the airflow passageway. The court found that the patents specifically teach

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[redacted]

that the heating element is an obstacle in the airflow passageway. *Id.* at .0016. The court also found that other objects that "do not alter the direction of the [] airflow passageway any more than the heating element" constitute obstacles and do not affect the shape of the airflow passageway. *Id.* The court's guidance is applied in the infringement, domestic industry, and validity analysis below.

E. The Products at Issue

Complaint accuses the JUUL Pod and JUUL Device (collectively, the JUUL System), and the JUUL2 Pod and JUUL2 Device (collectively, the JUUL2 System), of infringing the Asserted Patents. Respondent has also identified certain 3D-printed cartridges as [redacted]." As explained below, the [redacted] should not be adjudicated. Nonetheless, the [redacted] also infringe the Asserted Patents.

1. The JUUL System

The JUUL System is an electronic vaporizer. CX-2220C.0001. As shown below, the JUUL System comprises a cartridge (*i.e.*, JUUL Pod) configured to couple to a battery portion (*i.e.*, JUUL Device) containing a rechargeable battery. CX-2221C.0011; CX-2220C.0001.

[redacted]

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The JUUL Device is comprised of the components below:



The JUUL Pod is comprised of the components below:

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The JUUL Pod comprises a

The JUUL Pod's tank (shown above) has CX-2221C.0023; CX-2225C.0006. *Id*.

Proximate to the CX-2221C.0023-.0025. CX-2225C.0007, .0009.

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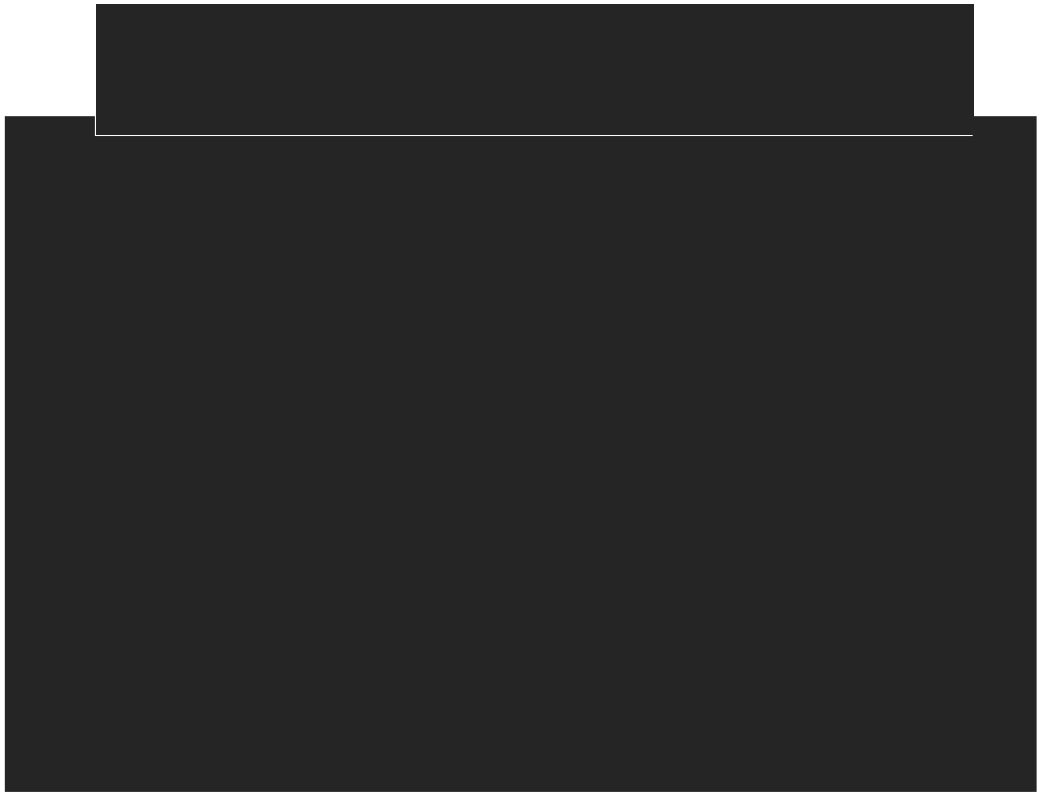
[redacted]

See id. [redacted] CX-2221C.0023; CX-0281C.0051-.0052 (03/01/2024 White) at 201:18-202:23.

[redacted] CX-2221C.0023, .0024; CX-2225C.0003. [redacted] CX-0281C.0053 (03/01/2024 White) at 206:22-207:1; *see also* CX-2221C.0026.

As shown below, there is an airflow passageway that extends centrally and axially from the first aperture to the second aperture.

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The JUUL Pod further comprises a [redacted] CX-2221C.0023.



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[redacted]

When a consumer inhales from the mouthpiece, air enters the JUUL Pod from the [redacted]. *See* CX-2225C.0006-.0007; *see also* CX-0281C.0035, .0038, .0053 (03/01/2024 White) at 135:22-136:1, 146:4-15, 206:22-207:1. [redacted]

[redacted]

2. The JUUL2 System

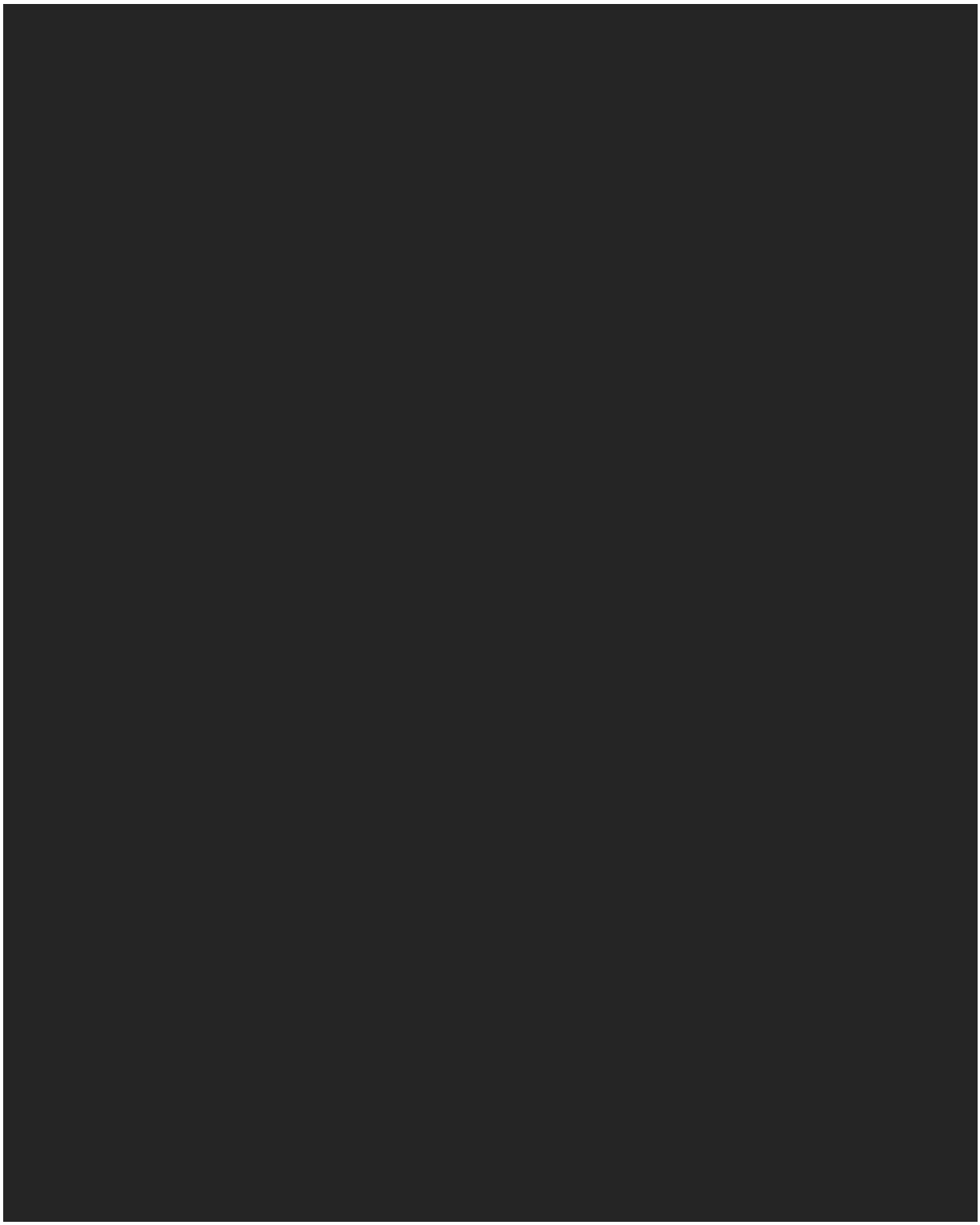
The JUUL2 System is an electronic vaporizer. JX-0516C.0006. As shown below, the JUUL2 System is comprising a cartridge (*i.e.*, the JUUL2 Pod) configured to couple to a battery portion (*i.e.*, the JUUL2 Device) which contains a rechargeable battery.

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The JUUL2 Device is comprised of the following components:

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[redacted]

The JUUL2 Pod comprises a [redacted] The JUUL2 Pod further comprises a [redacted] CX-2232C.0026-.0029.

The heater is [redacted] CX-2232C.0026, .0028. [redacted] CX-2232C.0028. [redacted]. CX-2232C.0025. [redacted]

[redacted]

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[redacted]

As shown below, [redacted] CX-2232C.0025.

[redacted]

[redacted] CX-2232C.0029.

[redacted] CX-2232C.0025, .0029. [redacted]

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[redacted]



As shown below, there is an airflow passageway that extends centrally and axially from the first aperture to the second aperture.



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[redacted]

3. NJOY ACE and NJOY [redacted]

a) ACE System

The NJOY ACE System is an electronic nicotine delivery system (ENDS) consisting of a power unit (*i.e.*, ACE Device) that works in combination with closed e-liquid cartridges (*i.e.*, ACE Pods). The Ace System and its two main components are shown below.

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[redacted]

[redacted]

The ACE Device is [redacted] JX-0560C.0021.

ACE Pods are replaceable e-liquid pods made for use with the ACE Device. The components of the ACE Pod are shown in the diagram below:

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[redacted]

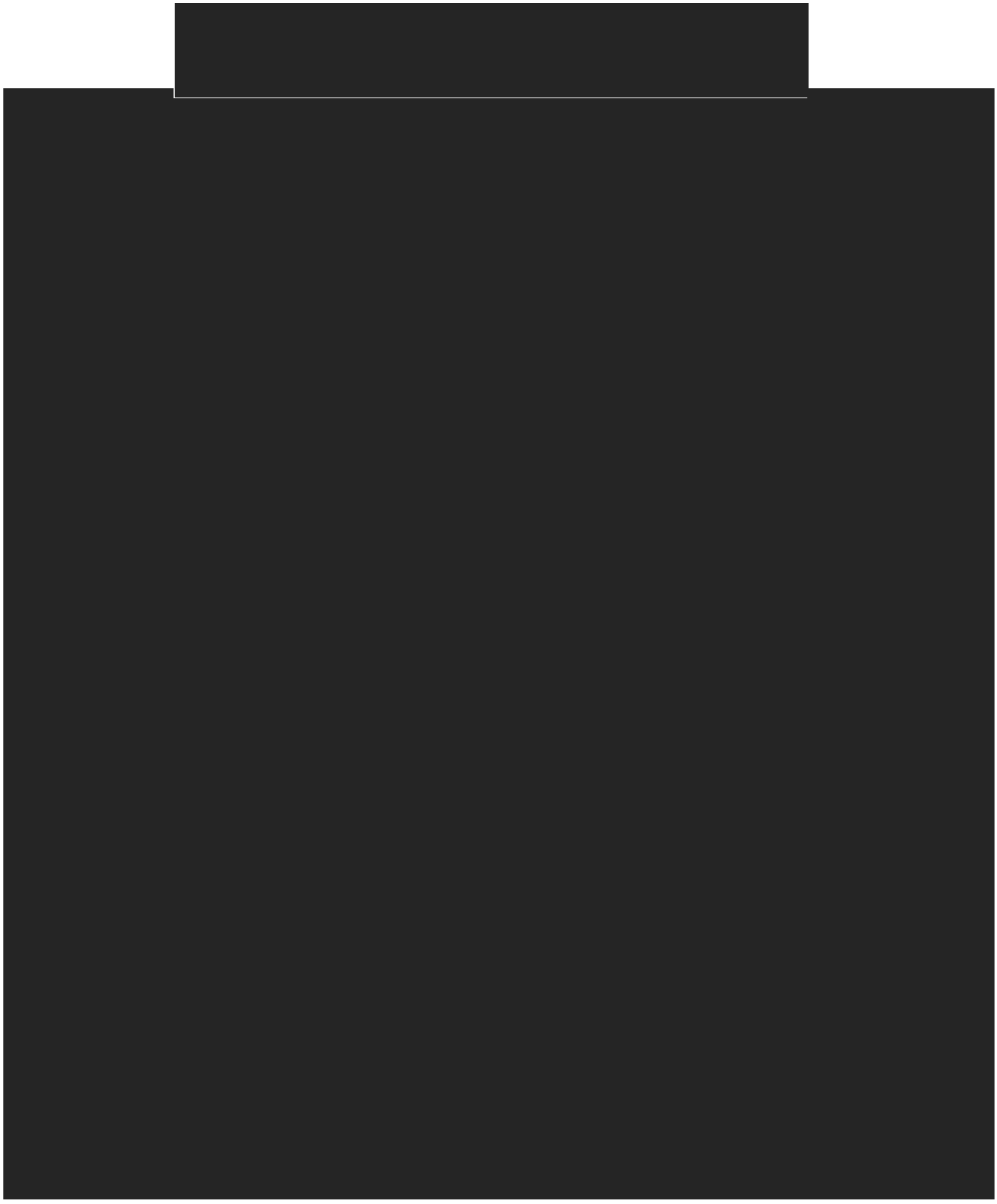
[redacted]

b) [redacted] System

NJOY is in the process of developing a next generation [redacted] System that includes Bluetooth functionality, along with modifications to the placement of the electrical contacts on the pod and their corresponding electrical contacts in the device.

The only difference relevant to the asserted claims between the ACE System and the [redacted] System is the placement of the electrical contacts on the pod. While the ACE Pod includes two electric contacts that are flush with the distal surface of the cartridge, the [redacted] Pod has two electric contacts that are recessed from the distal surface of the cartridge.

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[redacted]

4. VUSE Products

a) Vuse Alto

[redacted] The power unit contains a rechargeable battery that powers the device. JX-0580.0017.

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[redacted]



Photo of VUSE Alto (annotated)

[redacted]

JX-0580C.0015

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The cartridge contains a "cartomizer tube" component that

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[redacted]

b) Vuse Solo

[redacted]

[redacted] JX-0577C.0015. [redacted]

[redacted] JX-0577C.0013.

[redacted]

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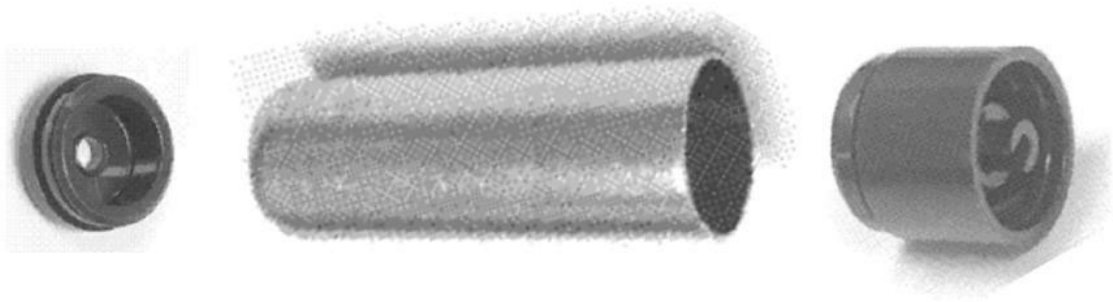
[redacted]

[redacted]

Two designs of Vuse Solo Cartridges are marketed: Vuse Solo G1 Cartridge and Vuse Solo G2 Cartridge. JX-0577C.0025. [redacted]

(1) Vuse Solo G1 Cartridge

[redacted]



[redacted]

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[redacted]

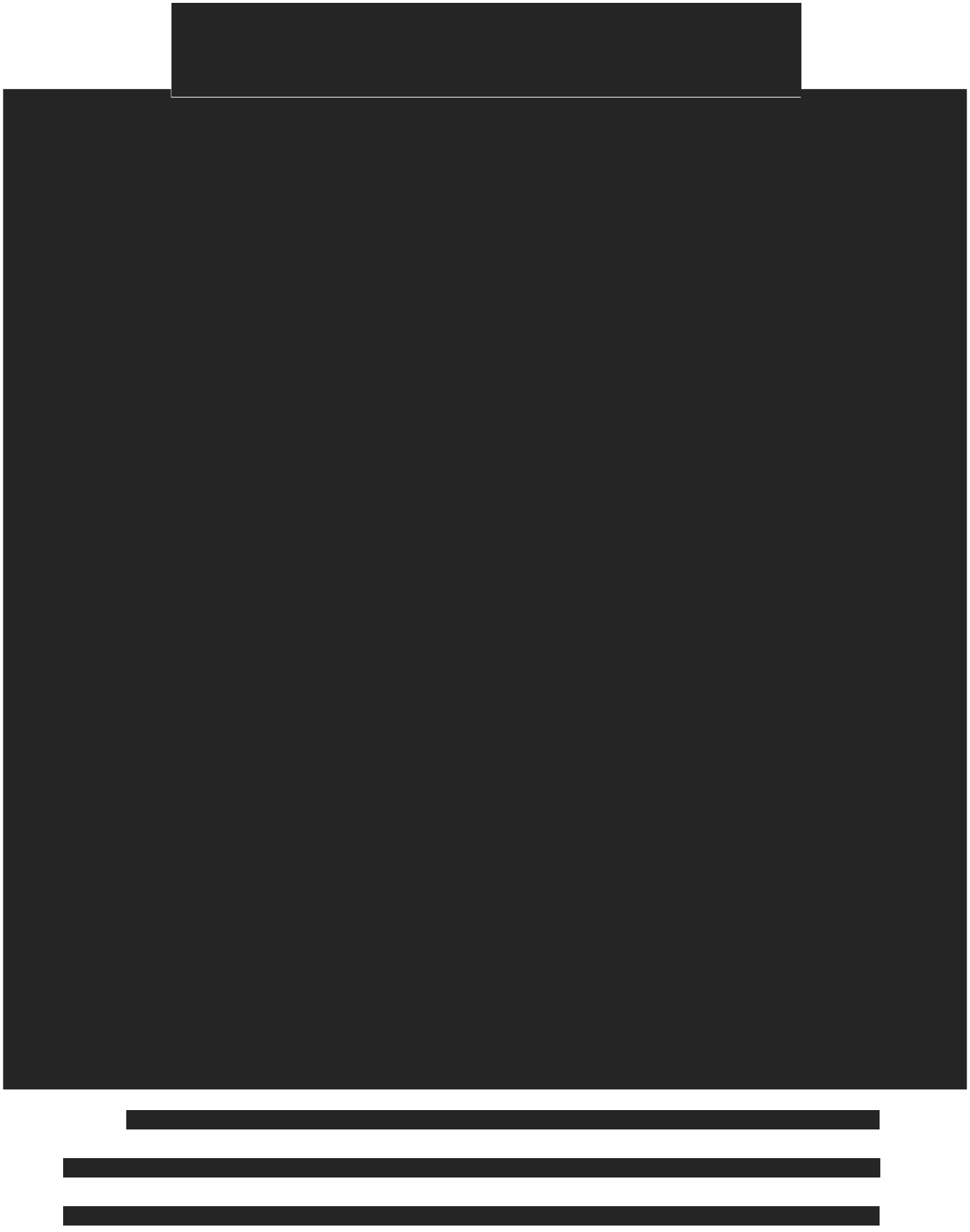
[redacted]

[redacted]. The heater wick assembly vaporizes the e-liquid stored within a "Common Reservoir Substrate" [redacted].

[redacted]

[redacted]

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[redacted]

[redacted]

[redacted]

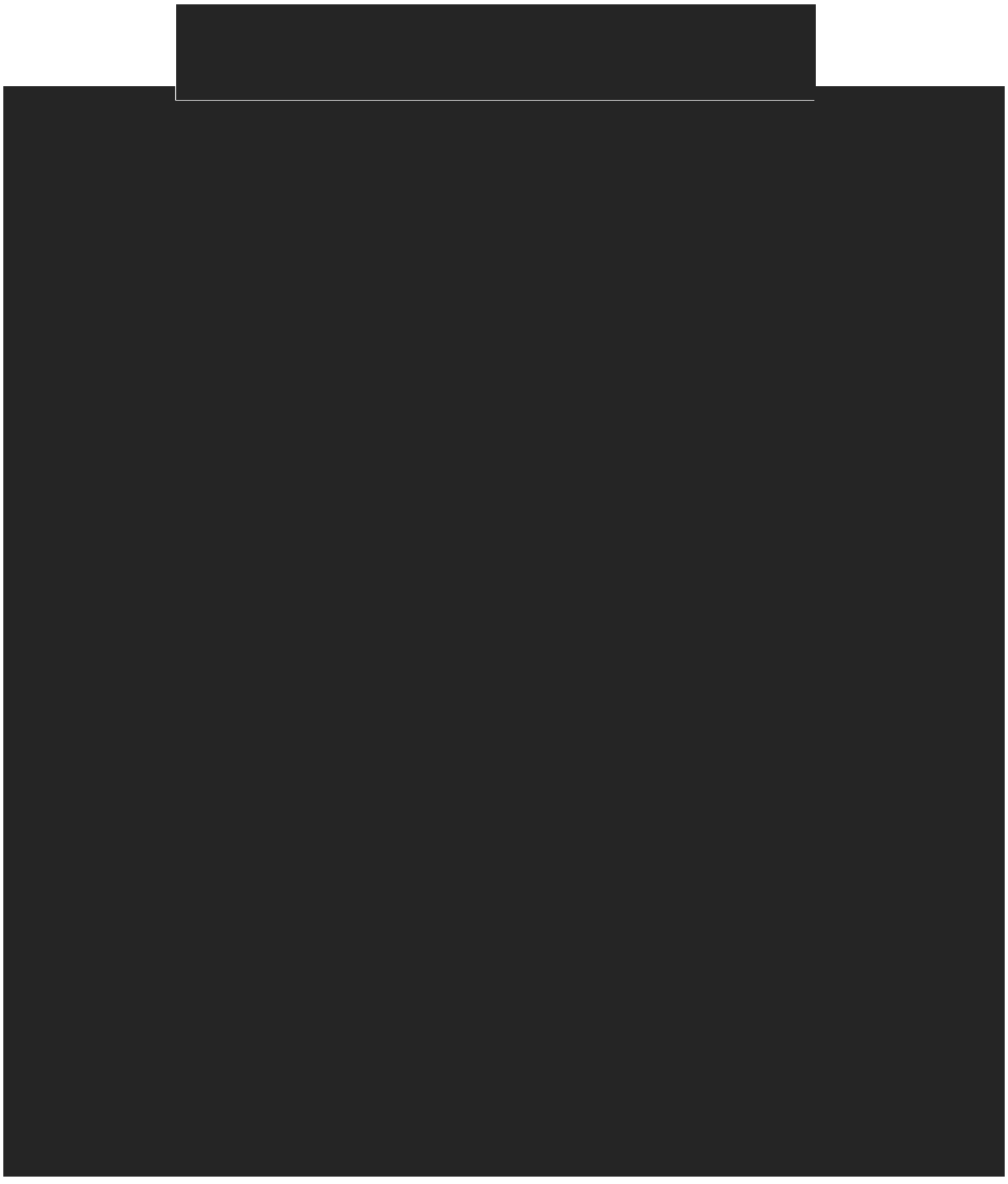


[redacted]

[redacted] Vuse Solo G2 Cartridge

The Vuse Solo G2 Cartridge similarly includes an outer housing formed by a hollow external tube, a mouth end cap inserted into one end of the external tube, and a base cartomizer cap inserted into the other end of the external tube.

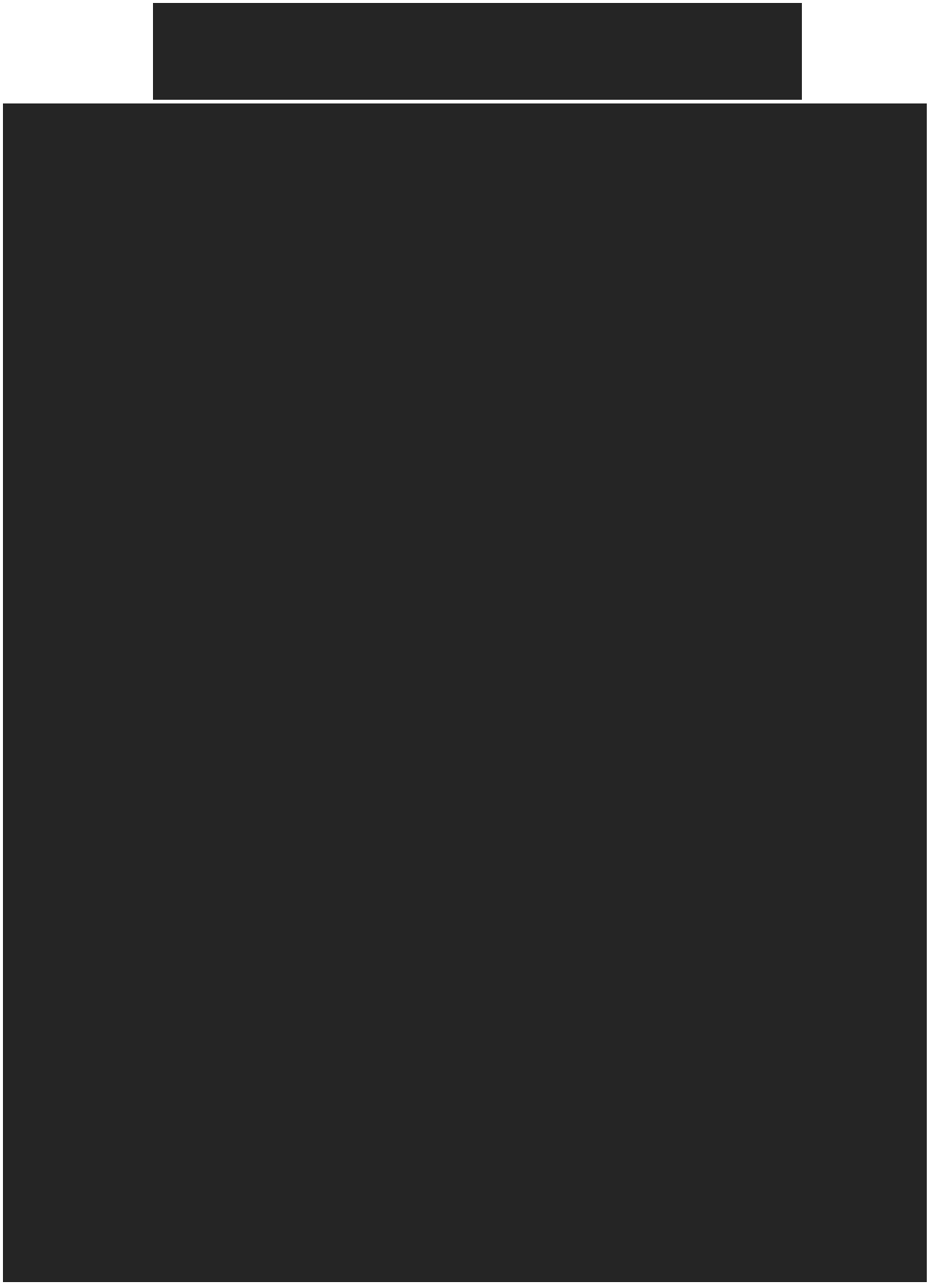
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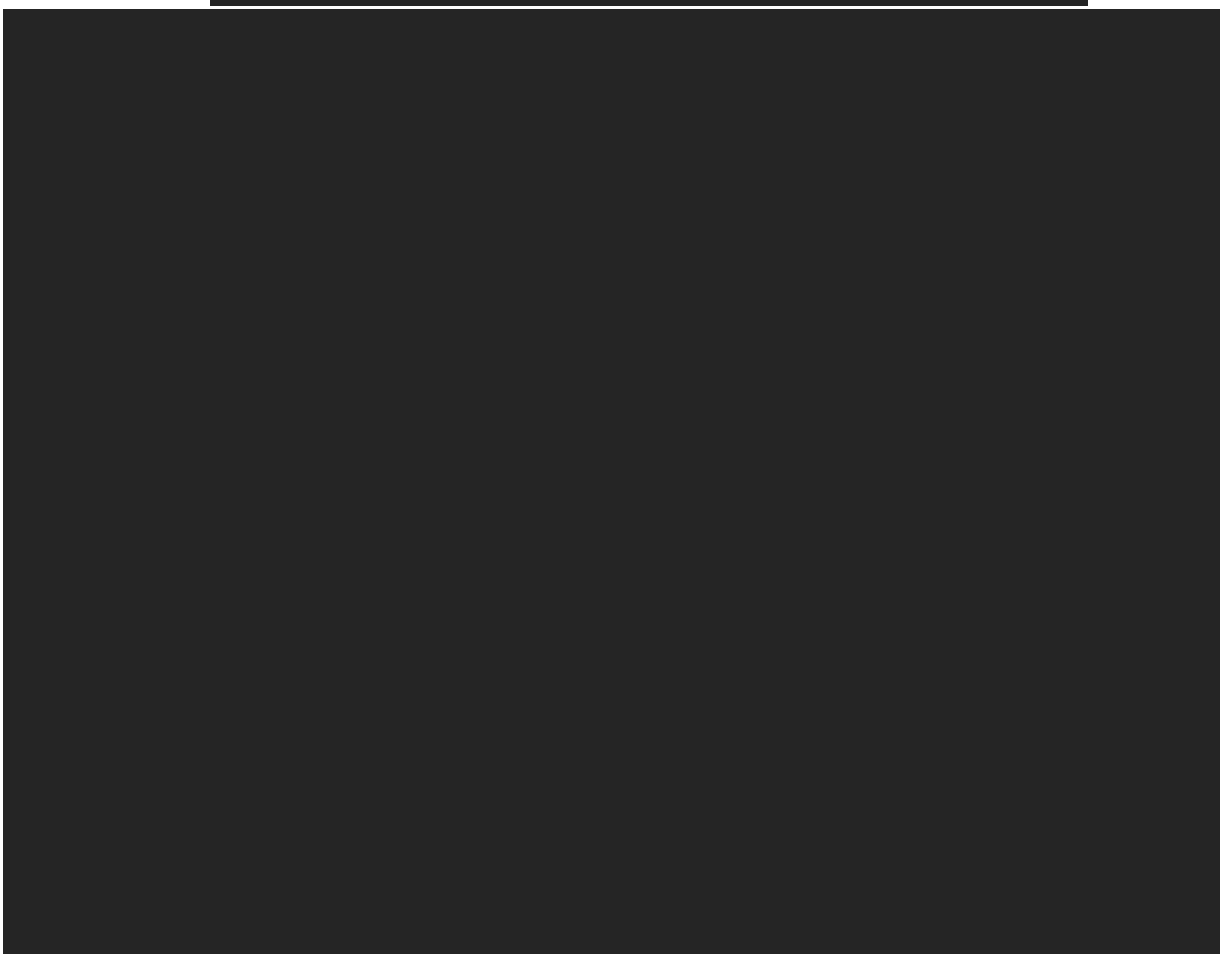
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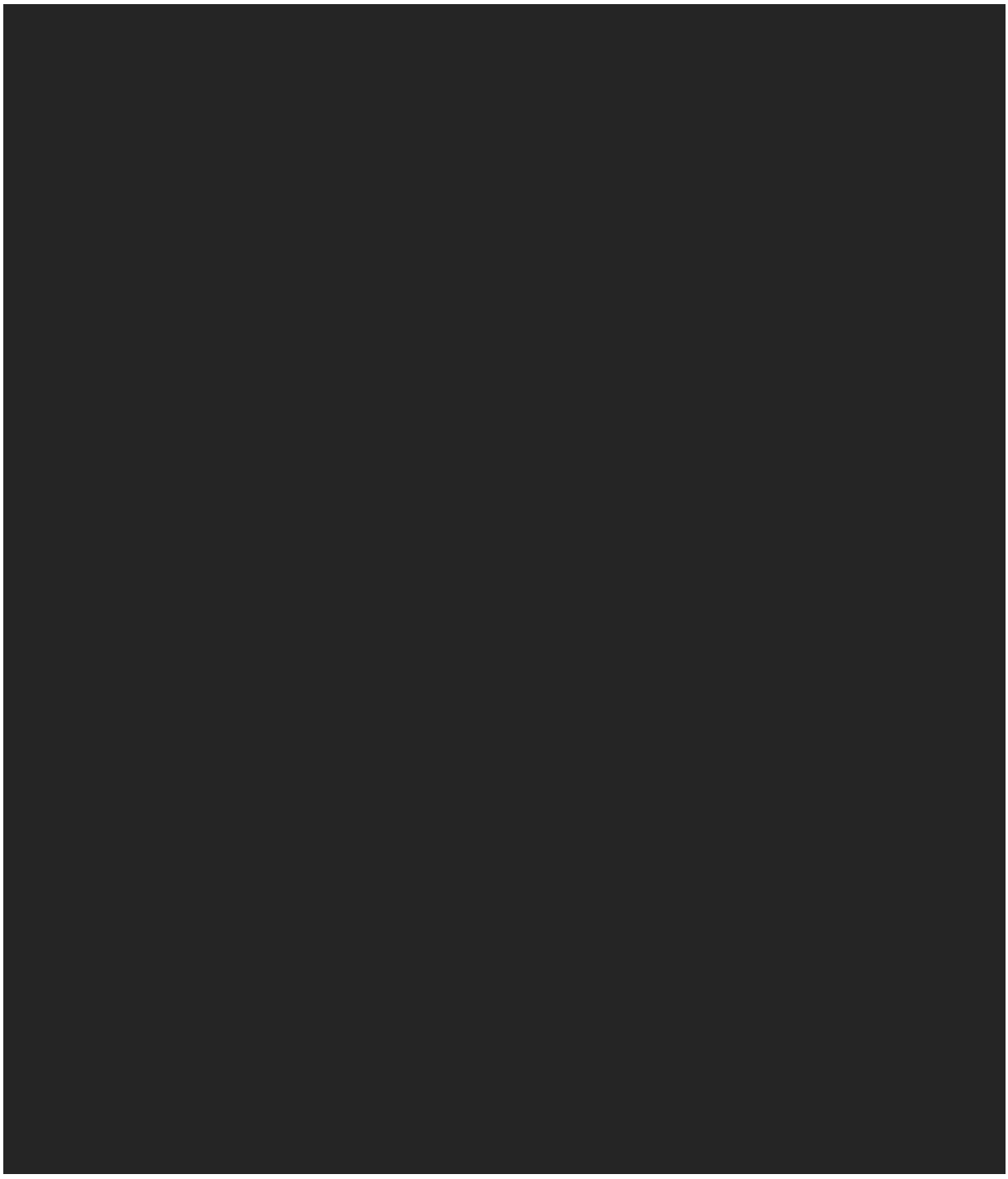


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[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

II. LEGAL STANDARDS

A. Violations of Section 337

Section 337 of the Tariff Act of 1930, as amended, declares the importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that infringe a valid and enforceable United States patent to be unlawful if an industry in the United States relating to the articles protected by the patent exists or is in the process of being established. *See* 19 U.S.C. §§ 1337(a)(1)(B)(i), (a)(2). Section 337

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provides that the Commission shall investigate alleged violations of the Section and is empowered to hear and decide actions involving alleged unfair acts under the Section. *See* 19 U.S.C. § 1337(b).

B. Infringement

1. Direct Infringement

Infringement is a two-step analysis: (1) determining the proper meaning of the asserted claims, and (2) comparing the claims as properly construed to the accused products to determine whether each of the limitations of the claim are present literally or under the doctrine of equivalents. *See W.E. Hall Co. v. Atlanta Corrugating, LLC*, 370 F.3d 1343, 1350 (Fed. Cir. 2004). The first step is a question of law; the second step is a question of fact. *Id.* A complainant need only demonstrate infringement by a preponderance of the evidence. *Ultra-Tex Surfaces, Inc. v. Hill Bros. Chem. Co.*, 204 F.3d 1360, 1364 (Fed. Cir. 2000); *see also Certain Flooring Products*, Inv. No. 337-TA-443, FID at 89 (Nov. 2, 2001), *aff'd*, Comm'n Op., USITC Pub. 3508 (Mar. 22, 2002), *aff'd sub nom. Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361 (Fed. Cir. 2003). To prove direct infringement, a complainant "must show that the accused device meets each claim limitation, either literally or under the doctrine of equivalents." *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed. Cir. 2004); *see also Riles v. Shell Exploration & Prod. Co.*, 298 F.3d 1302, 1308 (Fed. Cir. 2002) (internal citations and quotations omitted).

Direct infringement is not required at the time of importation. *Certain Beverage Dispensing Sys. & Components Thereof*, Inv. No. 337-TA-1130, Comm'n Op. at 15 (Mar. 26, 2020). Instead, components may be imported separately into the United States and later combined into an infringing apparatus. *Id.* (citing *Suprema, Inc. v. Int'l Trade Comm'n*, 796 F.3d 1338 (Fed. Cir. 2015) (en banc)).

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[redacted]

2. Indirect Infringement

An accused infringer may also be found liable for indirect infringement under 35 U.S.C. § 271(c) (contributory infringement) and 35 U.S.C. § 271(b) (induced infringement). *See Certain Home Vacuum Packaging Machines*, Inv. No. 337-TA-496, Order No. 44, 2004 ITC LEXIS 202, at *2 n.2 (Mar. 3, 2004) (unfair act under § 337 including "all forms of infringement, including direct, contributory, and induced infringement"). Both theories of indirect infringement require an underlying act of direct infringement. *See Carborundum Co. v. Molten Metal Equip. Innovations, Inc.*, 72 F.3d 872,876 n.4 (Fed. Cir. 1995). "Although direct infringement must be shown as a predicate for indirect infringement, specific direct examples of direct infringement are not always required. For example, the sale of disassembled products can suffice to demonstrate direct infringement by customers where there is no indication that the products can be combined into a non-infringing configuration." *Beverage Dispensing Sys.*, Comm'n Op. at 12.

Contributory infringement requires direct infringement by another, and the accused infringer sells a component of the infringing instrumentalities "knowing the same to be especially made or especially adapted for use in an infringement of such patent." 35 U.S.C. §271(c). The requisite level of intent for the "knowing" of contributory infringement is that a violator must know "that the combination for which [the] component was especially designed was both patented and infringing." *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S.Ct. 2060, 2067 (2011). It is a defense to an accusation of contributory infringement that the component is not a material part of the invention or has a "substantial noninfringing use." *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1061 (Fed. Cir. 2004). In Section 337 investigations, "'the complainant must show inter alia: (1) there is an act of direct infringement in violation of Section 337; (2) the accused device has no substantial non-infringing uses; and (3) the accused infringer imported, sold for importation, or sold after importation within the United States, the accused components that

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[redacted]

contributed to another's direct infringement.'" *Certain Microfluidic Devices*, Inv. No. 337-TA-1068, Final ID at 115 (Oct. 16, 2018) (aff'd in relevant part) (quoting *Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1353 (Fed. Cir. 2010)).

To prove liability for induced infringement, the patentee must show that the accused infringer had "knowledge that the induced acts constitute patent infringement." *Global-Tech Appliances, Inc.*, 131 S. Ct. at 2068. The patentee can satisfy the intent requirement by showing either actual knowledge or willful blindness by the accused infringer that the induced acts constitute infringement. *Id.* "[C]ircumstantial evidence may suffice" in proving intent. *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006). Moreover, as indicated above, liability for infringement may extend to "goods that were used by an importer to directly infringe post-importation as a result of the seller's inducement." *Microfluidic Devices*, Final ID at 114 (aff'd in relevant part) (citing *Suprema*, 796 F.3d at 1352-53).

C. Domestic Industry

In patent proceedings under Section 337, a complainant must establish that an industry "relating to the articles protected by the patent . . . exists or is in the process of being established" in the United States. 19 U.S.C. § 1337(a)(2). Commission precedent establishes that the domestic industry requirement consists of a "technical prong" and an "economic prong." *See, e.g.*, *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003); *see also InterDigital Commc'ns, LLC v. Int'l Trade Comm'n*, 707 F.3d 1295, 1298 (Fed. Cir. 2013); *Certain Video Game Sys. & Controllers*, Inv. No. 337-TA-743, Comm'n Op. at 6-7 (Apr. 14, 2011).

The burden is on the complainant to show by a preponderance of the evidence that the domestic industry requirement is satisfied. *Certain Multimedia Display & Navigation Devices & Sys., Components Thereof, & Prods. Containing Same*, Inv. No. 337-TA-694, Comm'n Op. at 5 (July 22, 2011).

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[redacted]

1. Technical Prong

To satisfy the technical prong of the domestic industry requirement, a complainant must show that its own article or an article of its licensee practices a valid claim of each asserted patent. *Certain Vision-Based Driver Assistance Sys. Cameras & Components Thereof*, Inv. No. 337-TA-907, Comm'n Op. at 36 (Dec. 1, 2015) ("Section 337 requires that the domestic industry is related to an 'article protected by the patent,' and an invalid patent cannot protect any articles."). The test for satisfying the technical prong of the domestic industry requirement is essentially the same as that for infringement and entails a comparison of the asserted domestic industry products to the patent claims. *Alloc*, 342 F.3d at 1375.

2. Economic Prong

a) Overview

For each patent asserted in a Section 337 proceeding, Section 337(a)(2) requires that a complainant "establish that an industry 'relating to articles protected by the patent . . . exists or is in the process of being established' in the United States." *Certain Digital Imaging Devices & Related Software*, Inv. No. 337-TA-717, ID at 305 (July 12, 2011) (quoting 19 U.S.C. § 1337(a)(2)), *aff'd*, Notice of Comm'n Decision Not to Review Final ID at 2 (July 18, 2011) ("Digital Imaging Devices").

Section 337(a)(3) guides the analysis of the economic prong for an existing domestic industry:

> (3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent . . . concerned–
>
> (A) significant investment in plant and equipment;
>
> (B) significant employment of labor or capital; or

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[redacted]

> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3). Because the criteria set forth in Section 337(a)(3)(A)-(C) are disjunctive, satisfaction of any one of them is sufficient to satisfy the economic prong. *Digital Imaging Devices*, Inv. No. 337-TA-717, ID at 306.

Establishing the "economic prong" is not dependent on any "minimum monetary expenditure," and the complainant need not "define or quantify the industry itself in absolute mathematical terms." *Certain Stringed Musical Instruments & Components Thereof*, Inv. No. 337-TA-586 ("*Stringed Instruments*"), Comm'n Op. at 25-26, 2008 WL 2139143, at *14 (May 16, 2008). A complainant can show that its activities are significant by showing how the activities are important to the articles protected by the patent in the context of the company's operations, the marketplace, or the industry in question. *See Certain Printing & Imaging Devices & Components Thereof* ("*Imaging Devices*"), Inv. No. 337-TA-690, Comm'n Op. at 27-28 (Feb. 17, 2011). "[B]ased on Commission precedent, the threshold by which a complainant may satisfy the economic prong is relatively low." *Certain Probe Card Assemblies, Components Thereof & Certain Tested DRAM & NAND Flash Memory Devices & Prods. Containing Same*, Inv. No. 337-TA-621, ID at 194-95 (July 20, 2009), *unreviewed in relevant part*, Comm'n Op. at 4-5 (Dec. 10, 2009).

An industry is "in the process of being established" if the complainant can "demonstrate that [it] is taking the necessary tangible steps to establish such an industry in the United States" and that there is a "significant likelihood that the industry requirement will be satisfied in the future." *Certain Stringed Musical Instruments & Components Thereof*, Inv. No. 337-TA-586, 2008 WL 2139143, at *8.

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[redacted]

b) Relevant Timeframe

Whether a domestic industry exists is generally determined as of the filing date of the complaint. *Hyosung TNS Inc. v.Int'l Trade Comm'n*, 926 F.3d 1353, 1361 (Fed. Cir. 2019). This guideline, however, "does not categorically forbid the consideration of domestic industry activities that occur after the filing of the original complaint." *Certain Elect. Imaging Devices, Inc.*, Inv. No. 337-TA-726, ID at 15 (Mar. 8, 2011) (unreviewed). Indeed, the Commission has considered ongoing activities, such as those occurring as of the filing of an amended complaint, as of the close of fact discovery, and as of the deadline for prehearing statements. *Id*. at 8-11; *see also Certain Bulk Welding Wire Containers & Components Thereof & Welding Wire*, Inv. No. 337-TA-686, ID at 435 (Aug. 31, 2010) (explaining that "[t]he Commission has assessed the existence and sufficiency of an alleged domestic industry at various points during the investigative process," and finding the economic prong satisfied "[r]egardless of the date used for the analysis") (unreviewed in relevant part).

Similarly, "[p]ast expenditures may be considered to support a domestic industry claim so long as those investments pertain to the complainant's industry with respect to the articles protected by the asserted IP rights and the complainant is continuing to make qualifying investments at the time the complaint is filed." *Certain Television Sets, Television Receivers, Television Tuners, & Components Thereof*, Inv. No. 337-TA-910, Comm'n Op. at 68 (Oct. 30, 2015). "[W]hen a complainant continues its operations and improves its products, past expenditures linked to these products are considered for purposes of a domestic industry." *Id.* at 69 (citing *Certain Battery-Powered Ride-On Toy Vehicles & Components Thereof*, Inv. No. 337-TA-314, Order No. 6 at 18-21 (Dec. 5, 1990)) (unreviewed in relevant part); *see also Hyosung*, 926 F.3d at 1361 (affirming domestic industry based on ongoing investments that began more than five years prior to complaint).

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c) Investment in Components

A complainant may rely on investments in components that do not practice the asserted patents when the products that do practice the asserted patents can only be used with those components. *Certain Magnetic Tape Cartridges*, Inv. No. 337-TA-1058, Comm'n Op. at 50-53 (April 9, 2019); *see also Certain Video Game Sys. & Wireless Controllers & Components Thereof*, Inv. No. 337-TA-770, Comm'n Op. at 66-67 (Oct. 28, 2013) (explaining that the "realities of the marketplace require" consideration of the relationship between the patented article and other components, whether they are sold together, and whether the components are essential).

d) Subcontractor & Prototype Investments

A complainant may rely upon the investments of third-party subcontractors providing specialized services for the domestic industry products. *Solid State Storage Drives, Stacked Elecs. Components, & Prods. Containing Same*, Inv. No. 337-TA-1097, Comm'n Op., 2018 WL 4300500, at *13–16 (June 29, 2018). A complainant may also rely upon investments in prototypes, so long as the prototypes actually exist and practice the asserted patents. *See Certain Non-Volatile Memory Devices & Prods. Containing the Same*, Inv. No. 337-TA-1046, Comm'n Op., 2018 WL 6012622, at *25–27 (Oct. 26, 2018) (allowing complainant to rely on investments in pre-commercial and non-commercial items to show domestic industry).

e) Reasonable Allocations & Summary Data

When computing investments, a complainant may rely upon reasonable allocations, such as allocations based on sales, employee time, and square footage. *Solid State Storage Drives*, 2018 WL 4300500, at *13–14. Such allocations need not be corroborated by supporting documentation. *Id.* A complainant may also gather and rely upon data collected and produced in summary form. *Certain Access Control Sys. & Components Thereof*, Inv. No. 337-TA-1016, Final ID at 291 (Oct. 23, 2017).

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f) Significant & Substantial

There is no minimum monetary amount required to be "significant" or "substantial." *See Certain Stringed Musical Instruments & Components Thereof*, Inv. No. 337-TA-586, Comm'n Op., 2008 WL 2139143, at *14–15. Instead, whether an investment can be considered significant or substantial depends on the "industry in question, and the complainant's relative size." *Certain Printing & Imaging Devices & Components Thereof*, Inv. No. 337-TA-690, Comm'n Op. at 27 (Feb. 17, 2011). In determining if the economic prong is satisfied, the Commission has considered how a complainant's asserted activities are "important to the articles protected by the asserted patents in the context of the company's operations, the marketplace, or the industry in question, or whether the complainant's undertakings had a direct bearing on the practice of the patent." *Id.* at 30. The Commission has explained that "the word 'significant' denote[s] an assessment of the relative importance of the domestic activities." *Lelo Inc. v. Int'l Trade Comm'n*, 786 F.3d 879, 883-84 (Fed. Cir. 2015) (citation omitted). In making this assessment, although not required, the Commission has compared the complainant's domestic and foreign investments, compared the complainant's investments to its sales, and considered how the complainant's domestic activities add value to the products. *See Printing & Imaging Devices,* Inv. No. 337-TA-690, Comm'n Op. at 27, 30; *Certain Table Saws Incorporating Active Injury Mitigation Tech. & Components Thereof*, Inv. No. 337-TA-965, Order No. 10, ID at 17 (Apr. 27, 2016) (finding quantitative significance of labor investments by comparing to gross sales), not reviewed, Notice (Apr. 21, 2016).

g) Nexus

Subsection (C) additionally requires that the complainant "establish . . . a nexus between the claimed investment and the asserted patent." *Certain Integrated Circuit Chips & Prods. Containing the Same*, Inv. No. 337-TA-859, Comm'n Op., 2014 WL 12796437, at *22 (Aug. 22,

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2014). "[T]he nexus requirement of subsection (C) can be presumed [where] the research investment is in the article protected by the patent." *Non-Volatile Memory Devices*, 2018 WL 6012622, at *25 n.11. Investments under subprongs (A) and (B) may include investments in engineering, research, and development also asserted under subprong (C). *Solid State Storage Drives,* 2018 WL 4300500, at *6–7. The nexus requirement of subprong (C) does not apply to such activities when considered under subprongs (A) and (B). *Id.* at *8–9.

D. Conception, Diligence, and Reduction to Practice

Pre-AIA section 102(g) allows a patent owner to claim an earlier invention date and antedate a prior art reference by proving an earlier conception date and reasonable diligence in reducing the invention to practice. 35 U.S.C. § 102(g) (pre-AIA); *see Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.*, 841 F.3d 1004, 1007 (Fed. Cir. 2016) (citing *Monsanto Co. v. Mycogen Plant Sci., Inc.*, 261 F.3d 1356, 1362 (Fed. Cir. 2001)). "[T]he test for conception is whether the inventor had an idea that was definite and permanent enough that one skilled in the art could understand the invention." *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994). A patentee may rely on declarations as evidence of conception and reduction to practice, but the declarations must be corroborated. *Perfect Surgical Techniques*, 841 F.3d at 1007. Reasonable diligence must be shown throughout the entire critical period, which begins just before the competing reference's effective date and ends on the date of the invention's reduction to practice. *Id.* Actual reduction to practice requires that the claimed invention work for its intended purpose, while constructive reduction to practice occurs when a patent application on the claimed invention is filed. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986); *see also Solvay S.A. v. Honeywell Int'l*, 622 F.3d 1367, 1376 (Fed. Cir. 2010).

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E. Validity

1. Presumption of Validity and Burdens of Proof and Production

The Patent Act provides that "[a] patent shall be presumed valid" and that "[t]he burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity." 35 U.S.C. § 282. *See also Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 113 (2011) (affirming the clear and convincing standard set by § 282 and the Federal Circuit's consistent interpretation of the statute over 30 years since its decision in *American Hoist*). While this burden of proof remains the same where a reference was previously considered by the Patent Office, "it may be harder to meet the clear and convincing burden when the invalidity contention is based upon the same argument on the same reference that the PTO already considered." *Sciele Pharma, Inc. v. Lupin Ltd.*, 684 F.3d 1253, 1260 (Fed. Cir. 2012); *see also Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1467 (Fed. Cir. 1990) ("This burden is especially difficult when the prior art was before the PTO examiner during prosecution of the application.").

2. Pre-AIA 35 U.S.C. § 102 – Anticipation

"For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference." *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677 (Fed. Cir. 1988) (affirming district court's finding of no anticipation). These elements must be "arranged as in the claim." *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1458-59 (Fed. Cir. 1984) (reversing district court's finding of anticipation as clearly erroneous where patent "discloses an entirely different device, composed of parts distinct from those of the claimed invention, and operating in a different way to process different material differently" and that "[t]he district court's analysis treated the claims as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning"). Indeed, "[c]laims cannot be 'anticipated' by

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devices that are not the same." *Tf3 Ltd. v. Tre Milano, LLC*, 894 F.3d 1366, 1374 (Fed. Cir. 2018) (reversing Patent Board's decision of anticipation).

Anticipation requires that "[t]he identical invention must be shown in as complete detail as contained in the patent claim." *Id.* (citation omitted). It is therefore improper to combine various embodiments from a single reference to anticipate a patent. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (finding "it was error for the district court to find anticipation by combining different parts of the separate protocols in the iKP reference simply because they were found within the four corners of the document"); *Certain Activity Tracking Devices, Sys., & Components Thereof*, Inv. No. 337-TA-963, Order No. 52, at 8 (Apr. 28, 2016) (combining two embodiments of a prior art reference "transforms" reference "from an anticipation reference to an obviousness reference").

"[A]n alleged infringer who raises invalidity as an affirmative defense has the ultimate burden of persuasion to prove invalidity by clear and convincing evidence, as well as the initial burden of going forward with evidence to support its invalidity allegation." *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376 (Fed. Cir. 2009) (footnote and citation omitted).

3. Pre-AIA 35 U.S.C. § 103 – Obviousness

Proof that a claim is obvious requires that "the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)). In addition, objective indicia of non-obviousness must be considered, such as "commercial success, long felt but unsolved needs, [and] failure of others." *Id*. "A party seeking to invalidate a patent based on obviousness must demonstrate by clear and convincing evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the

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claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so." *The Proctor & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 994 (Fed. Cir. 2009) (internal quotation marks omitted) (affirming the district court holding that the patent was not obvious).

When evaluating the prior art with the claimed subject matter, section 103 requires consideration of the claimed invention "as a whole." *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1275 (Fed. Cir. 2004). Inventions typically are new combinations of existing principles or features. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698 (Fed. Cir. 1983) (noting that "virtually all [inventions] are combinations of old elements"). The "as a whole" instruction prevents evaluation of the invention part by part and requires a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the various elements from the prior art and combined them in the claimed manner. *Ruiz*, 357 F.3d at 1275. In other words, section 103 requires some suggestion or motivation, before the invention itself, to make the new combination. *See In re Rouffet*, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998). Without this important requirement, hindsight would discount the value of combining various existing features or principles in a new way to achieve a new result, which is often the essence of invention. *Ruiz*, 357 F.3d at 1275.

Showing that the prior art discloses all of the elements is not enough to meet the requirement of motivation to combine. *See, e.g.*, *Hamilton Beach Brands, Inc. v. f'real Foods, LLC,* No. 2018-1274, 2018 U.S. App. LEXIS 32432, at *22 (Fed. Cir. 2018) ("Even if the prior art discloses the limitations Hamilton Beach identifies, such as cleaning components in place and a nozzle, the prior art does not identify a reason *why* a POSITA would have been motivated to combine those limitations.") (emphasis in original); *Kinetic Concepts, Inc. v. Smith & Nephew,*

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Inc., 688 F.3d 1342, 1369-70 (Fed. Cir. 2012) ("It is clear, moreover, that the district court concluded that the invention was obvious because it believed the claims contained elements that were not new. This reasoning is incorrect: a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.") (internal quotations and citations omitted). A party must provide specific reasons and evidence to show that one of ordinary skill in the art would have combined elements from specific references in the way the claimed invention does. *See, e.g.*, *ActiveVideo Networks, Inc. v. Verizon Commc'ns., Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (finding generic statements by defendant's expert insufficient to show motivation to combine); *Ecolochem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1372 (Fed. Cir. 2000) ("Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'").

Moreover, prior art that teaches away from combining certain known elements shows that the combination is not obvious. *KSR Int'l*, 550 U.S. at 416 (stating that "when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious"). For example, if a proposed modification would render the prior art invention inoperable for its intended purpose, the prior art teaches away from the proposed modification. *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (holding that the Patent Office failed to establish prima facie case of obviousness). In addition, if the suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the prior art reference as well as a change in the basic principles under which the prior art reference was designed to operate, the prior art reference does not teach how to solve the problems that existed in the art at the time of the invention and is not a proper ground for obviousness. *In re Ratti*, 270 F.2d 810, 813 (C.C.P.A. 1959) (reversing rejections of claims).

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When considering the motivation to combine, "[i]t is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) ("Here, the Examiner relied upon hindsight to arrive at the determination of obviousness."). Indeed, "one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *Id.* (citation omitted). For example, "at the time of invention, the inventor's insights, willingness to confront and overcome obstacles, and yes, even serendipity, cannot be discounted." *Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1364 (Fed. Cir. 2008) ("In other words, Mylan's expert, Dr. Anderson, simply retraced the path of the inventor with hindsight, discounted the number and complexity of the alternatives, and concluded that the invention of topiramate was obvious. Of course, this reasoning is always inappropriate for an obviousness test . . . ."); *Ecolochem*, 227 F.3d at 1372 ("Although the suggestion to combine references may flow from the nature of the problem, defining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness. Therefore, when determining the patentability of a claimed invention which combines two known elements, the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.") (internal quotations and citations omitted).

Courts are required to consider objective indicia of nonobviousness in every case where present. *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc). "Objective evidence of nonobviousness is an important component of the obviousness inquiry because evidence of secondary considerations may often be the most probative and cogent evidence in the record. It may often establish that an invention appearing to have been obvious in

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light of the prior art was not." *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012) (reversing district court's grant of JMOL of obviousness where "jury found that seven distinct objective factors support nonobviousness", *id.* at 1355) (internal quotation marks omitted). Indeed, a fact finder is required to "consider the objective evidence before reaching an obviousness determination" because it can "guard as a check against hindsight bias." *Eurand, Inc. v. Mylan Pharms., Inc. (In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.)*, 676 F.3d 1063, 1079 (Fed. Cir. 2012) ("[W]e find that evidence of a longfelt need for an extended-release formulation and the failure of others to formulate one strongly support a conclusion of nonobviousness.", *id*. at 1080); *see also Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966) ("Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented."). Failing to consider these objective indicia is reversible error. *See, e.g.*, *Leo Pharm. Prods. v. Rea*, 726 F.3d 1346, 1359 (Fed. Cir. 2013) (reversing Patent Trial and Appeal Board because when "[v]iewed through the lens of the objective indicia, as opposed to the hindsight lens used by the Board, the '013 patent would not have been not obvious over Turi in combination with Dikstein or Serup").

Objective indicia of nonobviousness include, inter alia, commercial success of the invention, a long-felt but unmet need for the invention, copying of the invention by competitors, and unsuccessful attempts by those skilled in the art to make the invention. Evidence that an invention has been commercially successful, especially in relation to similarly situated peers, is "weighty evidence to sustain the presumption" that a patent is valid. *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 56 (1923). To demonstrate non-obviousness based on commercial success, there must be a nexus between the commercial success and the merits of

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the invention itself. *See e.g.*, *Transocean Offshore Deepwater Drilling,* 699 F.3d at 1350. The same is true of all secondary considerations.

The Federal Circuit has noted that "if the marketed product embodies the claim features, and is coextensive with them, then a nexus is presumed and the burden shifts to the party asserting obviousness to present evidence to rebut the presumed nexus. The presumed evidence cannot be rebutted with mere argument; evidence must be put forth." *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000).

4. Pre-AIA 35 U.S.C. § 112, ¶ 1 – Written Description

Pre-AIA 35 U.S.C. § 112, ¶ 1 states that "[t]he specification shall 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, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention." The purpose of the written description requirement is to "ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor's contribution to the field of art as described in the patent specification." *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 920 (Fed. Cir. 2004).

To comply with the written description requirement, a patent applicant must "convey with reasonable clarity to those skilled in the art, as of the filing date sought, he or she was in possession of the [claimed] invention." *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (emphasis omitted). The test for written description "requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). "[T]he applicant may employ 'such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention.'" *In re Skvorecz*, 580 F.3d 1262, 1269 (Fed. Cir. 2009) (citing

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Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997)); *see also Enzo Biochem*, 323 F.3d at 964 (noting that the written description may also be met by other "sufficiently detailed, relevant identifying characteristics," such as "physical and/or chemical properties, functional characteristics when coupled with known or disclosed correlation between function and structure, or some combination of such characteristics") (emphasis omitted)). Compliance with the written description requirement is a question of fact, and in order to overcome the presumption of validity, a party must set forth clear and convincing evidence. *Centocor Ortho Biotech, Inc. v. Abbott Labs.*, 636 F.3d 1342, 1347 (Fed. Cir. 2011).

5. Pre-AIA 35 U.S.C. § 112, ¶ 1 – Enablement

A patent specification must contain a description "of the manner and process of making and using" the invention. Pre-AIA 35 U.S.C. § 112, ¶ 1. This is referred to as the enablement requirement. A patent claim is sufficiently enabled when the specification teaches "those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997). To determine whether the specification leaves a person of ordinary skill to perform undue experimentation, the Federal Circuit has identified the following factors, referred to as the *Wands* factors, to consider: (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented; (3) the presence of absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *In re Wands*, 858 F.2d 731, 737 (Fed. Cr. 1988).

"Whether the subject matter of a patent claim satisfies the enablement requirement of 35 U.S.C.A. § 112, ¶ 1, is a question of law based on underlying facts, and, because a patent is presumed to be valid, 35 U.S.C.A. § 282 (2000), the evidentiary burden to show facts supporting

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a conclusion of invalidity is one of clear and convincing evidence." *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1238–39 (Fed. Cir. 2003).

6. Pre-AIA 35 U.S.C. § 112, ¶ 2 – Indefiniteness

Pre-AIA 35 U.S.C. § 112, ¶ 2 states that "[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." The definiteness requirement is met when "a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). "The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable." *Id.* Indeed, "the definiteness requirement must take into account the inherent limitations of language," and "[s]ome modicum of uncertainty … is the 'price of ensuring the appropriate incentives for innovation.'" *Id.* at 909 (citations omitted). Demonstrating invalidity due to indefiniteness requires a showing of clear and convincing evidence. *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017) (citations omitted).

F. Remedy

1. Limited Exclusion Order

Section 337 requires the Commission to issue a limited exclusion order against named respondents that are found to have imported into the United States, sold for importation into the United States, or sold after importation into the United States infringing articles:

> If the Commission determines, as a result of an investigation under this Section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States . . . .

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19 U.S.C. § 1337(d)(1); *see Certain GPS Devices & Prods. Containing Same*, Inv. No. 337-TA-602, Comm'n Op. at 15 (Jan. 27, 2009). The Commission has "broad discretion in selecting the form, scope, and extent of the remedy." *Viscofan, S.A. v. Int'l Trade Comm'n*, 787 F.2d 544, 548 (Fed. Cir. 1986).

The Commission also has the authority to exclude from importation components of infringing products. *See Certain Hardware Logic Emulation Sys. & Components Thereof*, Inv. No. 337-TA-383, ID, 1997 ITC LEXIS 289, Part 1 of 2 at *240-241 (July 31, 1997); *Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, Comm'n Op., 1997 ITC LEXIS 248, at *15-16 (June 2, 1997).

2. Cease and Desist Order

The Commission may also issue a cease and desist order in addition to or in lieu of an exclusion order. *See* 19 U.S.C. § 1337(f)(1). A cease and desist order is typically warranted where the respondent has significant domestic operations or maintains commercially significant inventories of infringing products within the United States. *See Certain GPS Devices*, Inv. No. 337-TA-602, Comm'n Op. at 20. "[T]here is no lower limit on the number of articles a domestic respondent must have in inventory before that inventory can be found 'commercially significant.'" *Certain Agricultural Vehicles & Components Thereof*, Inv. No. 337-TA-487, Comm'n Op. at 14 (Sept. 24, 2004).

G. Public Interest

If the Commission determines that a violation of Section 337 has occurred, it shall issue an exclusion order and may issue a cease-and-desist order, "unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers [i.e., the public interest factors], it finds that such articles should not be excluded

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from entry." 19 U.S.C. § 1337(d)(1), (f)(1). Pursuant to Commission Rule 210.50(b)(1), the Commission directed that the ALJ "take evidence or other information and hear arguments from the parties or other interested persons with respect to the public interest in this investigation, as appropriate, and provide the Commission with findings of fact and a recommended determination on this issue." *See* Ntc. of Inst. at 2 (Sept. 21, 2023).

"[T]he Commission has found public interest considerations to outweigh the need for injunctive relief in protecting intellectual property rights found to have been violated under Section 337 in only three investigations, all of which were decided prior to the 1988 legislative amendment discussed above, which removed the requirement that a patentee show irreparable harm . . . Moreover, in those three cases, the exclusion order was denied because inadequate supply within the United States—by both the patentee and domestic licensees—meant that an exclusion order would deprive the public of products necessary for some important health or welfare need: energy efficient automobiles, basic scientific research, or hospital equipment." *Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1360 (Fed. Cir. 2010) (citations omitted).

H. Bond

Pursuant to 19 U.S.C. §§ 1337(e), (j)(3) and 19 C.F.R. § 210.50(a)(3), if the Commission issues an exclusion order, Respondent may nonetheless continue to import and sell their products during the sixty-day Presidential review period provided they post a bond. *See* 19 U.S.C. §§ 1337(e), (j)(3) and 19 C.F.R. § 210.50(a)(3). The purpose of the bonding requirement is to offset a respondent's competitive advantage from the continued unfair act, which means to protect the complainant from injury during the Presidential review period if the respondent chooses to continue importing. *Id.*; s*ee also Certain Dynamic Random Access Memories, Components Thereof & Prods. Containing Same*, Inv. No. 337-TA-242, Comm'n Op., 1987 ITC LEXIS 170, at *133 (Sept. 21, 1987) ("The bond is to be set at a level sufficient to 'offset any competitive

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advantage resulting from the unfair method of competition or unfair act enjoyed by persons benefitting from the importation.'") (quoting S. Rep. 1298, 93rd Cong., 2d Sess. 198 (1974); 19 C.F.R. 210.58(a)(3)). In some cases, protecting the complainant from continuing injury means "the bond [is] set at a level that exceeds the entered value of the infringing article . . . ." A. Soucie et al., Unfair Competition and the ITC, § 7:19 at 338 (2016); *see also Certain Power Supply Controllers & Prods. Containing Same*, Inv. No. 337-TA-541, Comm'n Op., 2006 ITC LEXIS 600, at *17 (Aug. 29, 2006).

Where complainant sells a patented domestic product and respondent imports an infringing product, the Commission has set the bond at a level that eliminates the price differential between the domestic and the imported infringing product. S*ee Certain Microsphere Adhesives, Process for Making Same, & Prod. Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, Comm'n Op., 1996 ITC LEXIS 5, at *35-36 (Jan. 16, 1996), *aff'd sub nom. Minnesota Mining & Mfg. Co. v. Int'l Trade Comm'n*, 91 F.3d 171 (Fed. Cir. 1996).

However, where such a comparison is "problematic because of the large variety of products involved, the wide variations in pricing, and the many distribution methods employed. Under these circumstances, setting an individual bond amount for each kind of [accused product] is not practical or justified." *Id.* "In cases where a price comparison is not possible, the Commission has set a 100 per cent bond during the Presidential review period." *Id.* at *35-36; *see also Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, Comm'n Op., 1997 ITC LEXIS 248, at *81-82 (June 2, 1997); *Certain Neodymium-Iron-Boron Magnets, Magnet Alloys, & Articles Containing Same*, Inv. No. 337-TA-372, Comm'n Op., 1996 ITC LEXIS 552, at *24-25 (May 1996); *Certain Unified Commc'ns Sys., Prods. Used with Such Sys., & Components*

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Thereof, Inv. No. 337-TA-598, Final Initial and Recommended Determinations, 2010 ITC LEXIS 517, at *383-85 (Jan. 28, 2008).

III. JURISDICTION & IMPORTATION

To have the authority to decide a case, a court or agency must have subject matter jurisdiction and jurisdiction over either the parties or the property involved. *See, e.g., Certain Steel Rod Treating Apparatus & Components Thereof*, Inv. No. 337-TA-97, USITC Pub. 1210 ("*Steel Rod*"), Comm'n Op. at 4-14 (Jan. 1982) (citing *Sealed Air Corp. v. Int'l Trade Comm'n*, 645 F.2d 976, 985-86 (C.C.P.A. 1981)).[5] "The question of standing to assert a patent claim [also] is jurisdictional." *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1325 (Fed. Cir. 2010). Here, the Commission has subject matter over Complainant's claim, *in personam* over Respondent, and *in rem* jurisdiction over the Accused Products, while Complainant has standing as to each of the Asserted Patents.

A. Subject Matter Jurisdiction

Section 337 of the Tariff Act of 1930, as amended, provides that the Commission "shall investigate any alleged violation of this section on complaint under oath" and is empowered to hear and decide actions involving patent infringement under Subsection (a)(B)(i). 19 U.S.C. § 1337(b)(1); *see also Steel Rod*, Comm'n Op. at 4. Complainant filed a complaint alleging a violation of this subsection. *See* Complaint ¶¶ 1, 65. The Commission therefore has subject matter jurisdiction. *See Amgen, Inc. v. Int'l Trade Comm'n*, 902 F.2d 1532, 1535-37 (Fed. Cir. 1990).

[5] Commission Publication available at https://www.usitc.gov/publications/337/pub1210.pdf. Commission Opinion available at 215 U.S.P.Q. 229 (Jun. 30, 1981).

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B. Personal Jurisdiction

Respondent does not contest the Commission's personal jurisdiction. Indeed, Respondent has appeared and participated in the investigation. The Commission therefore has personal jurisdiction over Respondent. *See, e.g.*, *Certain Pocket Lighters*, 337-TA-1142, ID at 12 (Feb. 12Feb12, 2020) (EDIS Doc ID 706458), *unreviewed in relevant part*, Comm'n Op. at 3 (Jul. 13, 2020) (EDIS Doc ID 714450).

C. *In Rem* Jurisdiction / Importation

The Commission has *in rem* jurisdiction when the articles at issue are imported into the United States, sold for importation, and/or sold within the United States after importation. *See, e.g.*, *Sealed Air*, 645 F.2d at 985-86; *Certain Radio Frequency Identification (RFID) Products & Components Thereof*, Inv. No. 337-TA-979, ID at 21 (Jun. 24, 2017) (EDIS Doc ID 617937), *unreviewed in relevant part*, Comm'n Op. at 4 (Oct. 30, 2017) (EDIS Doc ID 627126). Here, and as stipulated between the private parties, there is no dispute that at least one of each of the Accused Products has been imported into the United States, sold for importation, and/or sold within the United States after importation. *See* JX-0012.

D. Standing

Respondent has not come forward with any facts or information, or made any contention, to support a dispute that Complainant has standing to bring suit for infringement of the Asserted Patents. Indeed, Complainant owns the full right, title, and interest in the Asserted Patents. *See Microfluidic Devices*, ID at 14. *See* JX-0002, JX-0004, JX-0005 (certified assignments).

Specifically, the inventors of the Asserted Patents assigned their interests in the inventions to Fuma International, LLC on November 1, 2018 (reel/frame 049578/0654, reel/frame 047383/0753). JX-0002, JX-0004. Complainant acquired all rights and interests to the Asserted

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Patents from Fuma International, LLC on August 11, 2023 via an assignment recorded at the Patent Office (reel/frame 064620/0001, reel/frame 064620/0395). JX-0005.

IV. THE ASSERTED PATENTS

A. Level of Ordinary Skill in the Art

The parties proposed different levels of ordinary skill in the art with respect to the Asserted Patents. Complainant's proposal is set forth below:

> A person of ordinary skill in the art would have at least a B.S. degree in Mechanical Engineering, Electrical Engineering, Industrial Design, Product Design, or similar field, with at least two years of industry experience in one of these fields, and such POSA would have been familiar with electrically powered vaporizing articles, their components or the underlying technologies.

Respondent's proposal is set forth below:

> A person of ordinary skill in the art would have had a B.S. in mechanical engineering, electrical engineering, or an equivalent degree, and either at least two years of experience with relevant electro-mechanical technologies or an advanced degree in mechanical engineering, electrical engineering, or an equivalent field, and at least one year of similar experience.

Complainant does not expect a difference in the proposals to be material to the issues in this Investigation.

B. Claim Construction

1. Agreed-Upon Constructions

The parties have agreed on the following constructions relating to the claims that remain at issue in this Investigation. In the April 4, 2024 *Markman* order the ALJ adopted these agreed-to constructions.

Claim Term and Patent Claims	Agreed Construction
an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the	The airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing.

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Claim Term and Patent Claims	Agreed Construction
second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing 881 Patent, claim 1. an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing 881 Patent, claim 16.	
electrically conductive portion 881 Patent, claims 1, 16.	a portion that is electrically conductive

Notably, a district court in the Middle District of North Carolina previously construed the same "airflow passageway" term. *See* RX-0132C.0022 (*Fuma v. R.J. Reynolds Vapor Company*, 1:19-cv-260, 1:19-cv-660, Dkt. # 95 (M.D.N.C. Mar. 23, 2020)). Specifically, the district court construed the term to mean "[t]he airflow passageway extends in a straight path through the center of the cartridge from a first opening on the first end to a second opening on the opposite end of the cartridge." *Id.* The parties did not adopt this construction.

2. The Claim Construction Order

On January 8, 2024, the ALJ held a *Markman* hearing in view of the parties' submitted argument, evidence, and expert testimony in support of their positions for the below terms relating to the claims that remain at issue in this Investigation:

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Claim Term and Patent Claims	Complainant's Proposed Construction	Respondent's Proposed Construction	Staff's Proposed Construction
Proximate 864 Patent, claims 1, 9, 25.	Plain meaning, *e.g.*, at or close to, and in the context of the 864 patent, proximate is used to indicate a relative position of the apertures, portions of the airflow path, and the ends, not a precise distance.	Indefinite.	At this time, this term appears to the Staff to be indefinite under 35 U.S.C. § 112. Any forthcoming expert discovery may provide more guidance.
Transversely 881 Patent, claims 1, 16. 864 Patent, claims 1, 9, 25.	Plain meaning, *e.g.*, crosswise.	Indefinite.	If construction is required, then the Staff proposes that this term should be construed consistent with its plain and ordinary meaning, *e.g.*, crosswise. Thus, this term does not appear to the Staff to be indefinite under 35 U.S.C. § 112.
both transverse sides of the [heating] element 881 Patent, claims 1, 16. 864 Patent, claims 11, 25.	Plain meaning, *e.g.*, sides of the [heating] element that extend transversely and over which airflow passes.	Indefinite.	If construction is required, then the Staff proposes that these phrases should be construed consistent with its plain and ordinary meaning, which is the claim language itself. *See also* "transversely" above. Thus, these phrases do not appear to the Staff to be indefinite under 35 U.S.C. § 112.
the portion of the solution 864 Patent, claim 25.	Plain meaning.	Indefinite.	At this time, this phrase appears to the Staff to be indefinite under 35 U.S.C. § 112. Any forthcoming expert discovery may provide more guidance.

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Claim Term and Patent Claims	Complainant's Proposed Construction	Respondent's Proposed Construction	Staff's Proposed Construction
electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture 881 Patent, claims 1, 16. configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow 864 Patent, claims 1, 9, 25.	Plain meaning.	Indefinite.	881 Patent – Claim 16: If construction is required, then the Staff proposes that these phrases should be construed consistent with their plain and ordinary meaning, which is the claim language itself. *See also* "heating element" below. Thus, these phrases do not appear to the Staff to be indefinite under 35 U.S.C. § 112. 864 Patent – Claims 1, 9: If construction is required, then the Staff proposes that this phrase should be construed consistent with its plain and ordinary meaning, which is the claim language itself. *See also* "heating element" below. Thus, this phrase does not appear to the Staff to be indefinite under 35 U.S.C. § 112. 864 Patent – Claim 25: At this time, these phrases appear to the Staff to be indefinite under 35 U.S.C. § 112. See "the portion of the solution" above. Any forthcoming expert discovery may provide more guidance.

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Claim Term and Patent Claims	Complainant's Proposed Construction	Respondent's Proposed Construction	Staff's Proposed Construction
heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture 881 Patent, claims 1, 16. heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow 864 Patent, claims 1, 9, 25.	*Subject to § 112(6)* Function: output heat to vaporize at least a portion of the solution for oral provision to an individual in the airflow (and variations thereof) Structure: resistive heating element 222, *Alternative construction if not subject to § 112(6)* element that heats via resistive heating	*Subject to § 112(6)* Function: 881 Patent, claim 16: (i) output heat; and (ii) vaporize at least a portion of the solution to be contained in the solution holding medium/solution holding medium reservoir for oral provision to an individual in an airflow from the second aperture (which is indefinite). 864 Patent, claims 1, 9: (i) output heat; and (ii) vaporize at least a portion of the solution held in the solution holding medium for oral provision to an individual in the airflow through the housing from the first aperture to the second aperture (which is indefinite). Structures: To the extent the claimed functions may be understood, the structures described in the specification as performing the entire claimed functions are each of the following: + a hollow and conductive center post	Considering that the private parties agree that these phrases are subject to 35 U.S.C. § 112, ¶ 6, the Staff will also agree so as to reduce the number of disputes in this investigation. 881 Patent – claim 16: Function(s): output heat to vaporize at least a portion of the solution to be contained in the solution holding medium/solution holding medium reservoir for oral provision to an individual in an airflow from the second aperture. Structure(s): heating element 222 as disclosed in FIG. 2 and described at 5:63-6:61, and equivalents thereof. 864 Patent – claims 1, 9: Function(s): output heat to vaporize at least a portion of the solution for oral provision to an individual in the airflow. Structure(s): heating element 222 as disclosed in FIG. 2

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Claim Term and Patent Claims	Complainant's Proposed Construction	Respondent's Proposed Construction	Staff's Proposed Construction
		extending from the claimed first end of the cartridge to the airflow passageway, and made of a conductive material, such as a conductive ceramic or a metallic material; or + a helical coil wrapped around the exterior of the airflow passageway or an integrated material as part of the airflow passageway. + Wherein the foregoing center post or helical coil may be made from the following illustrative materials: metallic substance such as nichrome, nickel chromium, gaseous heating element, ceramic, ceramic composite, carbon, carbon hybrid, carbon fiber, polymer, hybrid polymer. *Alternative construction if not subject to § 112(6), and deemed not indefinite.* For the 881 Patent: Component configured to: (a) perform heating (i.e. output heat); and (b)	and described at 5:65-6:63, and equivalents thereof. 864 Patent – claim 25: At this time, these phrases appear to the Staff to be indefinite under 35 U.S.C. § 112. See "the portion of the solution" above. Any forthcoming expert discovery may provide more guidance. *Alternative construction if not subject to § 112(6) and not indefinite:* For the '881 patent: Plain and ordinary meaning, *e.g.*, conductive material that, in response to current, outputs heat to vaporize at least a portion of the solution to be contained in the solution holding medium/solution holding medium reservoir for oral provision to an individual in an airflow from the second aperture. For the '864 patent: Plain and ordinary meaning, *e.g.*, conductive material that, in response to current, outputs heat to vaporize at least a

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Claim Term and Patent Claims	Complainant's Proposed Construction	Respondent's Proposed Construction	Staff's Proposed Construction
		vaporize at least a portion of the solution to be contained in the solution holding medium/solution holding medium reservoir for oral provision to an individual in an airflow from the second aperture. For the 864 Patent: Component configured to: (a) perform heating (i.e. output heat); and (b) vaporize at least a portion of the solution/the portion of the solution held in the solution holding medium for oral provision to an individual in the airflow between the first aperture and the second aperture.	portion of the solution for oral provision to an individual in the airflow.
solution holding medium adapted to hold a solution 881 Patent, claims 1, 16. 864 Patent, claims 1, 9, 25.	*Subject to § 112(6):* Function: holding a solution Structure: an absorbent material, capsule, or reservoir, or a combination thereof *Alternative construction if not subject to § 112(6)*: a location, container, or mechanism to hold	*Subject to § 112(6):* Function: hold a (liquid, gelatin, frozen or solid) solution. Structures: The structures described in the specification as performing the entire claimed function are (i) absorbent material such as cotton, wool, polyester, a batting material; (ii) one or	Considering that the Staff has agreed with the private parties that the "heating element" phrases are subject to 35 U.S.C. § 112, ¶ 6, the Staff submits that this phrase is also subject to 35 U.S.C. § 112, ¶ 6. Function(s): hold a solution. Structure(s): absorbent material (such as cotton, wool,

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Claim Term and Patent Claims	Complainant's Proposed Construction	Respondent's Proposed Construction	Staff's Proposed Construction
	the solution, including but not limited to at least one of an absorbent material, a chamber, a reservoir, or a capsule.	more capsules as described and configured in 881 Patent 7:25–49 and 864 Patent 7:27–51; or (iii) one or more pellets as described and configured in 881 Patent 7:25–49 and 864 Patent 7:27–51. *Alternative construction if not subject to § 112(6)*: Means for holding a solution.	polyester, batting material), capsule, pellet, and reservoir as described at 881 Patent, 4:5–9, 5:49–52, and 7:25–49 and 864 Patent, 4:7–11, 5:51–54, and 7:27–51, and equivalents thereof. *Alternative construction if not subject to § 112(6)*: Plain and ordinary meaning, *e.g.*, a location, container, or mechanism to hold the solution.

On April 5, 2024 the ALJ issued a *Markman* order finding that none of the disputed terms were indefinite or subject to 35 U.S.C. §112(6), and construing the terms as shown below:

Claim Term and Patent Claims	Ordered Construction
Proximate 864 Patent, claims 1, 9, 25.	"[T]he term 'proximate' is construed as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning."
Transversely 881 Patent, claims 1, 16. 864 Patent, claims 1, 9, 25.	"The term 'transversely' is construed to have its plain and ordinary meaning, that is, crosswise."
both transverse sides of the [heating] element 881 Patent, claims 1, 16. 864 Patent, claims 11, 25.	"[T]his term is construed as having its plain and ordinary meaning, which is the claim language itself."
the portion of the solution 864 Patent, claim 25.	"The claim term 'the portion of the solution' is construed as having its plain and ordinary meaning, that is, the words of the claims."

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Claim Term and Patent Claims	Ordered Construction
electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture 881 Patent, claims 1, 16. configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow 864 Patent, claims 1, 9, 25.	"This term is construed as having its plain and ordinary meaning, that is, the language of the claims."
heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture 881 Patent, claims 1, 16. heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow 864 Patent, claims 1, 9, 25.	"Based on the language of the claims, the disclosure in the specification, and the other intrinsic evidence, I conclude that 'heating element' in the '881 and '864 patent claims is not subject to § 112, ¶ 6. Because the parties have not fully explained their disagreement (if any) with respect to how this term should be construed outside of § 112, ¶ 6 (although all agree that it can appropriately be so construed) I will address that issue later if necessary after it is addressed by the parties."
solution holding medium adapted to hold a solution 881 Patent, claims 1, 16. 864 Patent, claims 1, 9, 25.	"'[S]olution holding medium' should be construed to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution."

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3. Additional Alleged Disputes

Respondent's expert witnesses have raised other apparent claim construction disputes, which were not raised during the claim construction phase of this Investigation and have not been briefed. These disputes are identified below.

a) "airflow passageway"

In the Respondent's March 3, 2019 expert report of Karl Leinsing, Mr. Leinsing opines:

> I understand that JLI's interpretation of the "airflow passageway" does not allow: (1) the airflow passageway to have any obstacle that obstructs the airflow, such as a wick, batting material, etc.; (2) the airflow passageway to be the same or shared structure as other components such as the solution holding medium or housing; and (3) no physical structure of the airflow passageway to extend from the first aperture to the second aperture. I also understand that NJOY's interpretation of the "airflow passageway" does not limit the claims in these ways.

JX-0632C (Leinsing Opening Report) ¶ 166.

Neither the claims of the Asserted Patents, the specification, nor the parties' agreed-upon construction for the "airflow passageway" term of claims 1 and 16 of the 881 Patent, limit airflow passageway in this manner. An airflow passageway may include an obstacle. For example, the airflow passageway as recited by claim 16 comprises "a heating element … extending transversely across the airflow passageway." *See also* JX-0005 (881 Patent) at Fig. 2 (depicting a heating element 222 in the airflow passageway), 6:41-47, 6:62-63, 7:16-19. The specification also teaches that the "heating element 222 can comprise wicking material" (JX-0005 (881 Patent) at 6:44-47), in which case the heating element comprising a wick is yet another example of an obstacle in the airflow passageway. And the claims do not foreclose a wick (*e.g.*, a wick and coil) and therefore do not foreclose an airflow passageway from having an obstacle such as heating element comprising a wick.

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The Asserted Patents do not preclude an airflow passageway from sharing structure with other components. *See, e.g.*, JX-0005 (881 Patent) at Fig. 2 (depicting shared structure between the airflow passageway 214 and center post 218 and solution holding medium 204), 6:22-24.

It is not clear what Mr. Leinsing means by "no physical structure of the airflow passageway to extend from the first aperture to the second aperture." JX-0632C (Leinsing Opening Report) ¶ 166. Regardless, the airflow passageway of the Asserted Patents has structure. Figure 2 of the Asserted Patents, for example, depicts the airflow passageway as a smaller-diameter tubular section in center post 218 and a larger-diameter tubular section in the solution holding medium 204. *See* JX-0005 (881 Patent) at 6:19-22, 6:30-34. Moreover, certain embodiments include a gap 228 to facilitate mixing of air and vaporized solution. *See id.* at 6:58-61. In these embodiments, such as the one shown in Figure 2, the airflow passageway comprises the gap to facilitate mixing of air and vaporized solution. To the extent Mr. Leinsing's interpretation of an airflow passageway excludes the Figure 2 embodiment, the evidence will show that this is inconsistent with the Asserted Patents.

b) "the [first/second] aperture on the [first/second] end"

In the Respondent's March 3, 2019 expert report of Karl Leinsing, Mr. Leinsing opines:

> I understand that JLI's interpretation of "the [first/second] aperture on the [first/] [*sic*] end" cannot be on some portion of the device that is distal from the end, and is therefore not met. However, I understand NJOY's interpretation of "the [first/second] aperture on the [first/second] end" does not limit the claimed end in this way.

JX-0632C (Leinsing Opening Report) ¶ 213.

The term "the [first/second] aperture on the [first/second] end" has its plain and ordinary meaning—*i.e.*, a first/second aperture on the first/second end of the housing.

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c) "the solution holding medium surrounds the airflow passageway" and variations thereof

With respect to the 881 Patent, claims 1 and 16, Respondent's expert, Mr. Leinsing, states:

> I understand that ***under JLI's interpretation***, the claim limitation does not allow only part of the length of the airflow passageway or heating element to be surrounded by the solution holding medium. I understand that ***NJOY's interpretation*** of this claim limitation is not limited in this way.

JX-0632C (Leinsing Opening Report) ¶ 214.

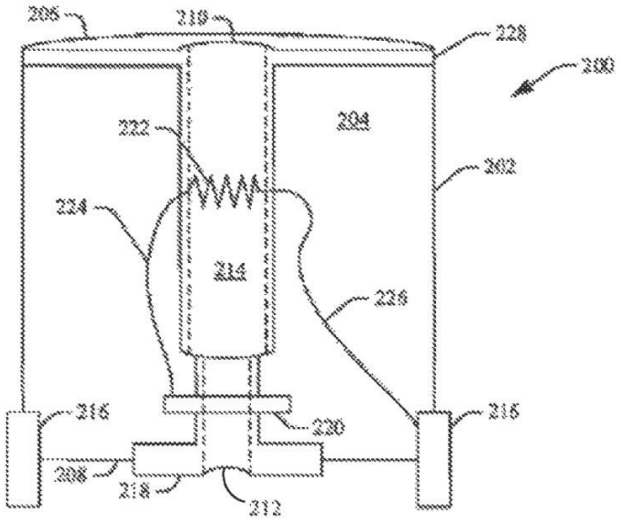
It is unclear what Respondent or its expert, Mr. Leinsing, means by "only part of the length of the airflow passageway or heating element."

Nonetheless, as the evidence will show, this term has its plain and ordinary meaning. The claim limitation does not specify whether the solution holding medium completely or partially surrounds the airflow passageway or heating element, and thus, as the evidence will show, a POSITA would have understood that the term may encompass both situations.

Indeed, the solution holding medium in Figure 2 of the Asserted Patents does not surround the entire length of the airflow passageway. Figure 2 teaches "a gap 228 [that] may exist between the first end 206 of the cartridge 200 and the absorbent material 204," such that solution holding medium does not surround this portion of the airflow passageway. JX-0005 (881 Patent) at 6:56-58, Fig. 2. Additionally, Figure 2 depicts a solution holding medium on either side of the airflow passageway and heating element. There is no depiction, other otherwise any description, of the solution holding medium surrounding the back or front of the airflow passageway and heating element, let alone 360 degrees. Therefore, there is no requirement that the solution holding medium surround the airflow passageway on all sides from one end of the cartridge to the other.

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JX-0005 (881 Patent) Fig. 2

d) "a heating element … extending transversely across the airflow passageway" and variations thereof

In the Respondent's March 3, 2019 expert report of Karl Leinsing, Mr. Leinsing opines:

> To the extent the term "transversely" can be understood, I understand that ***under JLI's interpretation*** of "the heating element [extends/extending] transversely across the airflow passageway," the heating element must extend from one point on the side surface of the airflow passageway to a second point on the side surface the airflow passageway and the second point is across the first point. In other words, if the heating element is not touching the side surface of the airflow passageway, the heating element does not extend transversely across the airflow passageway under JLI's interpretation. I understand that ***NJOY's interpretation*** of this claim limitation is not limited in this way.

JX-0632C (Leinsing Opening Report) ¶ 215.

Relevant to the claims at issue, this term only appears in independent claims 1 and 16 of the 881 Patent. Neither claims 1 and 16 of the 881 Patent, the specification, nor ALJ's ordered constructions limit "a heating element … extending transversely across the airflow passageway" per "JLI's interpretation." As recognized in the April 5, 2024 *Markman* order, the "configuration is recited in claim[] … 16 of the '881 patent in which 'transversely' modifies how the heating

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element extends across the airflow passageway, that is, crosswise to it ….” CC Order at 16. A heating element that extends transversely across the airflow passageway is one that extends crosswise to the airflow passageway. And even if there was a disclosure in the specification to support Respondent’s limiting construction (there is not and Respondent has not identified any), it is improper to read limitations from the specification into the claims. *See Polaris Innovations Ltd. v. Brent*, 48 F.4th 1365, 1377 (Fed. Cir. 2022).

e) “airflow chamber”

In the Respondent’s March 3, 2019 expert report of Karl Leinsing, Mr. Leinsing opines:

> I understand that ***under JLI’s interpretation***, the “airflow chamber” is a separate and distinct structure from the “airflow passageway.” I understand that ***under NJOY’s interpretation***, the term “airflow chamber” is used interchangeably with the term “airflow passageway.”

JX-0632C (Leinsing Opening Report) ¶ 216.

Relevant to the claims at issue, this term only appears in dependent claims 18 and 19 of the 864 Patent. Neither claims 18 and 19 of the 864 Patent, the specification, nor ALJ’s ordered constructions limit “airflow chamber” per “JLI’s interpretation” or per what Mr. Leinsing erroneously identifies as “NJOY’s interpretation.” For example, claims 18 and 19 of the 864 Patent do not claim an airflow passageway; they recite an airflow chamber between the heating element and the second aperture. Moreover, in the section of the specification of the 864 Patent describing the Figure 2 embodiment, the specification states that “it is readily recognized that airflow may pass directly over the heating element, ***through a chamber that is proximate the heating element***, or other suitable configuration.” JX-0001 (864 Patent) at 7:18-21 (emphasis added). This disclosure does not equate the chamber with the airflow passageway, but rather states that the chamber may be a portion proximate the heating element.

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C. Conception and Reduction to Practice

1. The Claims at Issue Were Conceived by July 28, 2009 and Reduced to Practice by August 12, 2009

As set forth herein, and as will be demonstrated at the hearing, Complainant will show that the inventors, Greg Conley and Dan Hillenbrandt, conceived of the asserted claims of the Asserted Patents by July 28, 2009 and reduced to practice the asserted claims of the Asserted Patents by August 12, 2009 when Greg Conley demonstrated prototypes of the claimed invention at the Tri-State Tobacco and Candy Convention and by no later than when the first commercial production run of the Fuma E-cigarette was available or sold in the United States.

An invention date prior to the filing date of a patent application may be established when an invention is built and determined to work for its intended purpose (*i.e.*, actual reduction to practice). *See Teva Pharm. Indus. Ltd. v. AstraZeneca Pharms. LP & IPR Pharms., Inc.*, 661 F.3d 1378, 1383 (Fed. Cir. 2011). The invention date is a legal conclusion based on underlying factual evidence. *See Henkel Corp. v. Procter & Gamble Co.*, 560 F.3d 1286, 1288 (Fed. Cir. 2009). The invention date cannot be based solely on the testimony of an inventor, but instead must be corroborated by other evidence. *See Cooper v. Goldfarb*, 154 F.3d 1321, 1330 (Fed. Cir. 1998). While the invention date must be corroborated by other evidence, "there is no final single formula that must be followed in proving corroboration." *Berry v. Webb*, 412 F.2d 261, 266 (C.C.P.A. 1969). Instead, a "'rule of reason' analysis is applied to determine whether the inventor's prior conception testimony has been corroborated . . . An evaluation of all pertinent evidence must be made so that a sound determination of the credibility of the inventor's story may be reached." *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993) (internal citations omitted). The "rule of reason" analysis requires an overall evaluation of all supporting evidence to reach a conclusion

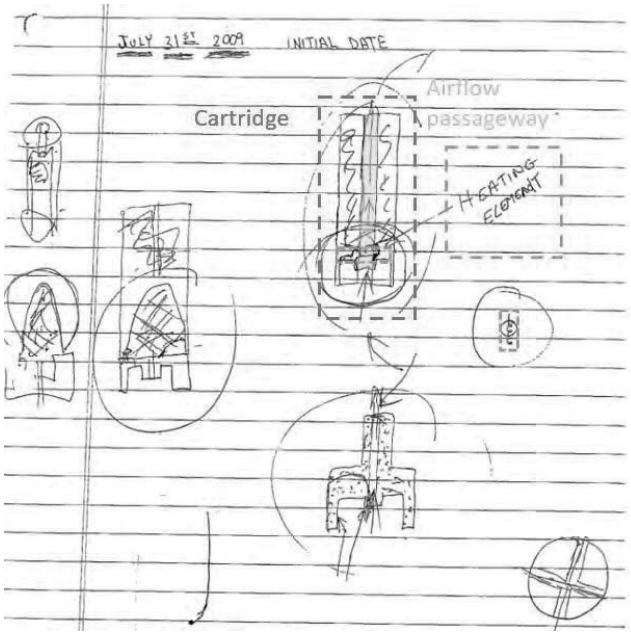
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regarding the inventors' testimony about when they made the invention and reduced their invention to practice.

As will be demonstrated at the hearing, Greg Conley and Dan Hillenbrandt conceived of the invention defined by the asserted claims of the Asserted Patents no later than July 28, 2009 and reduced the claimed invention to practice by having a prototype e-cigarette made, delivered to their offices in Ohio, and tested to show that it worked for its intended purpose no later than August 12, 2009. JX-0507.0003; CX-2160; CX-2179; CX-2164; JX-0504.

An inventor drawing dated July 31, 2009 ("the Conception Sketch") shows the design of the Fuma E-cigarette, which includes a transverse heating element located within the central airflow passageway of the cartridge:



JX-0507.0003 (annotated)

The cartridge (boxed in red, above) comprises a transverse heating element (boxed in orange, above) in the central airflow passageway (shaded in green, above). The transverse heating element is depicted to the left of the words "HEATING ELEMENT" and in the top-down view of

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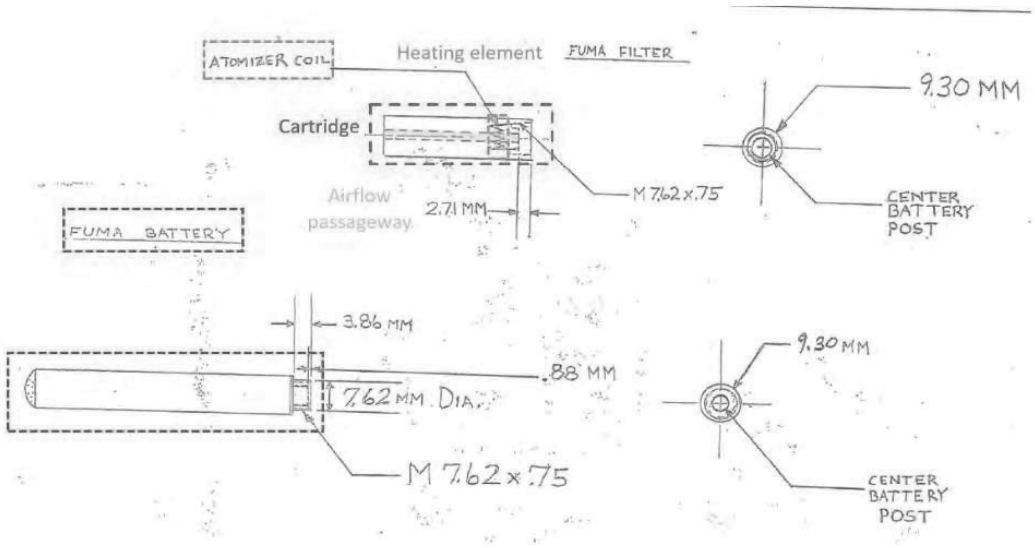
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the cartridge below the words "HEATING ELEMENT." CX-1377C (02/29/2024 Conley) at 158:12-159:8, 163:7-18, 169:17-170:1. The cartridge depicted in the Conception Sketch would have been configured to couple to a power source of an electronic vaporizer given that the bottom or first end of the cartridge has an opening to receive a male end of a power source and given that the heating element depicted is a resistive heating coil.

In August 2009, within days of receiving the prototype devices, Fuma took the prototype device to the Tri-State Tobacco and Candy Convention trade show held at the Belterra Casino Resort and Spa in Belterra, Indiana and demonstrated the patented device at that trade show. CX-1377C (02/29/2024 Conley) at 39:17-42:21, 67:3-68:21, 69:10-14; CX-2117C (02/13/2024 Hillenbrandt) at 280:2-9; JX-0548 (12/04/2019 Conley) at 23:23-24:1, 285:23-286:2; JX-0549 (12/05/2019 Hillenbrandt) at 103:22-23, 143:16-20; JX-0502; CX-2163; CX-2160; CX-2179; CX-2164; JX-0504. A copy of a document reflecting Greg Conley's hotel reservation at the Belterra Casino is reflected at CX-2163. Exhibition details and a registration form for the convention is reflected at JX-0502.

On or around August 18, 2009, Dan Hillenbrandt drafted tolerance drawings, which were sent to Fuma's Chinese supplier for the first commercial run of Fuma E-Cigarettes ("Tolerance Drawings"). JX-0508C.0004-0010. The Tolerance Drawings depict the design of the Fuma E-cigarette, which includes a cartridge (boxed in red, below) comprising a transverse heating element (boxed in orange, below) located within the central airflow passageway (shaded in green, below) that couples to a battery (boxed in blue, below):

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JX-0508C.0010 (annotated)

Fuma placed its first commercial order for its patented e-cigarette though its Chinese supplier (Trans-Power International Co., Ltd.) in September 2009, and Fuma kept one of the devices it received in the first commercial order. CX-2161C; CX-2168; CX-2178. That Fuma e-Cigarette device is depicted in the Greg Conley's declaration dated November 2, 2018, which was filed in the USPTO under 37 Code of Federal Regulations Section 1.131 as part of Fuma's Patent Application No. 15/377,522, which was issued as the 881 Patent. JX-0543. That same Fuma device is also depicted in the Greg Conley's declaration dated February 16, 2021, which was filed in the USPTO under 37 Code of Federal Regulations Section 1.131 as part of Fuma's Patent Application No. 16/451,483, which was issued as the 864 Patent. JX-0545.

Respondent, through its expert, Dr. Dahm, contends that "Mr. Conley testified at his deposition that he could not independently corroborate the information provided in the 1.131 Declaration." JX-0653C (Dahm Rebuttal Report) ¶ 220. This is incorrect. In fact, Greg Conley expressly testified that he reviewed the 1.131 Declarations, believed they were true and accurate when he signed them, and still believes that to be so. *See, e.g.*, CX-1377C (02/29/2024 Conley) at

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231:18-233:5 ("Q. Did you believe it was true and accurate when you signed it and submitted it to the Patent Office that declaration in the '881 application? A. I do. Q. So you still think it's accurate that declaration you submitted? A. I do"); CX-1378C (03/01/2024 Conley) at 421:7-422:4 ("Q. All right. And do you recall testifying that for this declaration [for the '881 Patent], you reviewed and believed the statements were accurate before it was submitted to the Patent Office? A. Yes, I do. Q. And do you recall testifying that your understanding of its accuracy was based in part on conversations with your attorney? …A. Yes, I do. Q. And is that also true for the other affidavit that was submitted to the Patent Office [for the '864 Patent] which has been marked as Exhibit 12? … A. Yes, I do.").

The Fuma device depicted in Greg Conley's 1.131 Declarations includes every element of each of the asserted claims of the Asserted Patents, as detailed below and as will be demonstrated at the hearing. Moreover, as explained in the 1.131 Declarations, the same product depicted in the 1.31 Declarations was sold to customers on at least November 5, 2009 and November 20, 2009. JX-0533, JX-0545. Therefore, that device constitutes an actual reduction to practice of the invention defined by the asserted claims dated no later than the receipt of that device at Fuma' s facilities in Ohio in September 2009. As will be demonstrated at the hearing, there are no differences between the patented design of the Fuma prototype devices demonstrated at the Tri-State Tobacco and Candy Convention in August 2009 and the Fuma E-Cigarettes from the first commercial production run in September 2009, including the Fuma E-Cigarette depicted in the 1.131 Declarations. *See* CX-1377C (02/29/2024 Conley) at 47:4-8; 47:16-48:2; CX-2117C (2/13/2024 Hillenbrandt) at 283:4-7; JX-0549 (12/05/2019 Hillenbrandt) at 145:8-22. The Fuma prototype device constitutes an actual reduction to practice of the invention defined by the asserted claims of the Asserted Patents no later than August 2009.

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[redacted]

Complainant is not relying on the provisional patent applications filed by Greg Conley and Dan Hillenbrandt on July 27 and 31, 2009 to establish a date of invention. The provisional applications were written by Greg Conley without consulting a patent attorney. CX-1377C (02/29/2024 Conley) at 211:18-24; JX-0548 (12/04/2019 Conley) at 35:14-18. Accordingly, the provisional applications do not include all the details that one typically sees in a regular patent application, such as the 917 Application, which was written by a patent attorney who Fuma hired in 2010 to turn the provisional applications into a regular application. *See* CX-1377C.0053 (02/29/2024 Conley) at 211:11-17; JX-0548.0035 (12/04/2019 Conley) at 35:14-25. However, the existence of the provisional applications adds credence to the inventors' testimony that they obtained prototypes of the patented invention in August 2009, as well as Dan Hillenbrandt's testimony that the Fuma device was on sale by September 2009. CX-1377C.0010-.0011, .0017-.0018 (02/29/2024 Conley) at 39:17-42:21, 67:3-68:21, 69:10-14; CX-2117C.0070 (2/13/2024 Hillenbrandt) at 279:9-280:9; JX-0548.0023-.0024, .0285-.0286 (12/04/2019 Conley) at 23:23-24:1, 285:23-286:2; JX-0549.0103, .0143, .0145 (12/05/2019 Hillenbrandt) at 103:22-23, 143:16-20, 145:8-22; JX-0502; CX-2163; CX-2160; CX-2179; CX-2164; JX-0504.

Provisional Application No. 61/273,097 ("the 097 Provisional Application") filed on July 31, 2009 in the USPTO states "Prototypes forthcoming," which is consistent with the inventors' testimony about receipt of prototypes in August 2009. CX-1377C.0010-.0011, .0017-.0018 (02/29/2024 Conley) at 39:17-42:21, 67:3-68:21, 69:10-14; CX-2117C.0070 (2/13/2024 Hillenbrandt) at 280:2-9; JX-0548.0023-.0024, .0285-.0286 (12/04/2019 Conley) at 23:23-24:1, 285:23-286:2); JX-0549.0103, .0143 (12/05/2019 Hillenbrandt) at 103:22-23, 143:16-20; JX-0502; CX-2163; CX-2160; CX-2179; CX-2164; JX-0504; JX-0556.0007. While the 097 Provisional Application does not describe all the details of the patented e-cigarette, there is nothing

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inconsistent in the description and much that is consistent. For example, the 097 Provisional Application states that the device will have " . . . a full integrated 'Atomizer' and 'reservoir' [for the e-liquid] internally in the Cartridge ... [t]hus providing the user with a new atomizer with every cartridge." JX-0556.0005. The 097 Provisional Application also states that the cartridge shall have an air inlet at one end and an outlet at the opposite end and have "a path way to allow the air to follow [sic, flow] through and/or around the suspension medium." JX-0556.0006. While these descriptions do not fully explain the layout of the central airflow passageway, the heating element, and the wick as set forth in the asserted claims of the Asserted Patents, they are consistent with the claimed configuration and corroborate the inventors' possession of the prototypes no later than August 2009.

The evidence will establish that Greg Conley and Dan Hillenbrandt built and tested their patented invention no later than receipt of the first commercial order of the patented e-cigarettes from their Chinese supplier in September 2009, as pictured in Mr. Conley's Section 1.131 Declarations. JX-0543; JX-0545; CX-2168; CX-2178; CX-2161C. In addition to the actual device and packaging, the evidence includes notebook sketches of the patented device, an invoice from Fuma's Chinese supplier, emails related to that order and its payment by Fuma, the 097 Provisional Application, and testimony from Complainant's expert witness, Dr. Glenn Vallee, as well as Rebecca Conley and Dan Hillenbrandt. JX-0507; JX-0508C.0004-.0010; CX-2168.0002; CX-2178; CX-2161C; JX-0556. Additional evidence that supports that the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 the claimed inventions of the Asserted Patents includes: JX-0505; CX-2170; CX-2172C; JX-0506C; CX-2176; JX-0507.0004-0005; CX-1897.0008-0017; CX-2175; CX-2165; CX-2171; CX-2173C; CX-2758.0001-.0127.

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[redacted]

Moreover, Respondent concedes that the asserted claims of the Asserted Patents are disclosed by the "Fuma Prototype." CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

Complainant anticipates that Respondent will cite to testimony of William Steiger, a Fuma employee who did not begin working at the company until 2010 (RX-1135C.0014 (03/05/2024 Steiger) at 14:1-2), and who believes that the Conception Sketch was altered to include a date of July 31, 2009. For example, Respondent's expert, Dr. Dahm, contends that Mr. Steiger "testified that Mr. Conley formed the Fuma company to resell pre-existing e-cigarettes, rather than to conceive of or make a new design for e-cigarettes" and "the date on [the conception] sketch was not added contemporaneously." JX-0653C (Dahm Rebuttal Report) ¶ 222. However, Mr. Steiger did not begin working at Fuma until after Greg Conley and Dan Hillenbrandt conceived of and reduced to practice the claimed invention of the Asserted Patents in 2009, and Mr. Steiger's uncorroborated recollection should be given no weight. Mr. Steiger claims to recall with certainty that a single piece of paper he reviewed from over ten years ago, and which was one of many sketches he had seen, was changed, despite his inability to accurately recollect events, including more recent ones. Indeed, Mr. Steiger could not recall what he and Respondent's counsel discussed about the Conception Sketch two months prior to his deposition. RX-1136.0033-0034, .0038 (03/29/2024) at 33:19-34:8, 36:7-22, 38:11-22. Regardless of when a date was added to the Conception Sketch, Mr. Steiger testified to his belief that the Conception Sketch was created in 2009. RX-1135C.0115 (03/05/2024 Steiger) at 115:7-13, RX-1136.0012 (03/29/2024 Steiger) at 12:18-25.

Complainant also anticipates that Respondent will cite to Mr. Steiger's testimony to contend that the devices depicted in the 1.131 Declarations are not from the first commercial production run of the Fuma E-Cigarette. For example, Mr. Steiger testified that the packaging on

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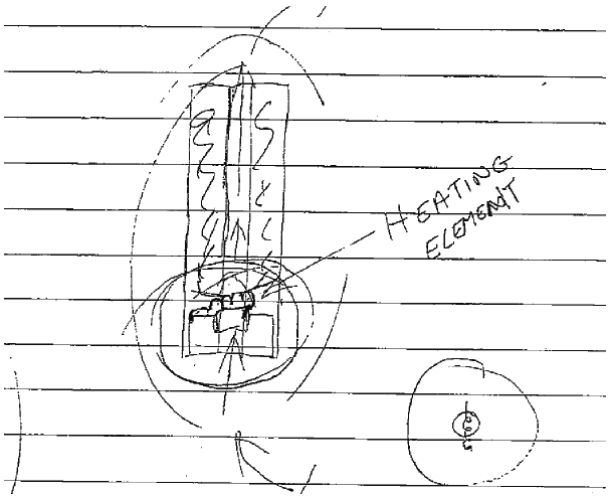
the devices depicted in the 1.131 Declarations appears to be from 2011 or later based on the stylized "f" in the "Fuma" logo. Mr. Steiger's testimony on this issue was anything but certain. *See* RX-1135C.0018 (03/05/2024 Steiger) at 68:7-13 ("Q. Okay. Approximately how long did Fuma use this packaging for? A. It was – I don't know…. I'm not sure if this was after we had redone it or if this is before."). Indeed, Mr. Steiger did not join Fuma until 2010 and therefore was not around when the devices depicted in the 1.131 Declarations were made and packaged (i.e., in 2009). As it turns out, the stylized "F" was part of the original packaging for the devices depicted in the 1.131 Declaration. Compare CX-2161C (09/17/2009 Invoice depicting UPC labels with styled "F" in "Fuma" logo) with JX-0533 (image from 1.131 Declaration showing packaging with the same stylized "F" in "Fuma" logo).

2. 881 Patent, Claim 1

a) [1.1] An apparatus comprising

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 an apparatus.

The Conception Sketch shows an apparatus.

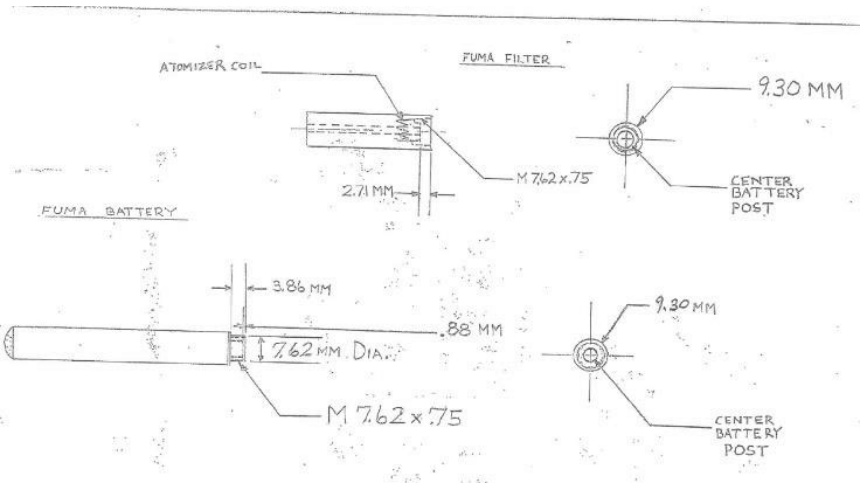


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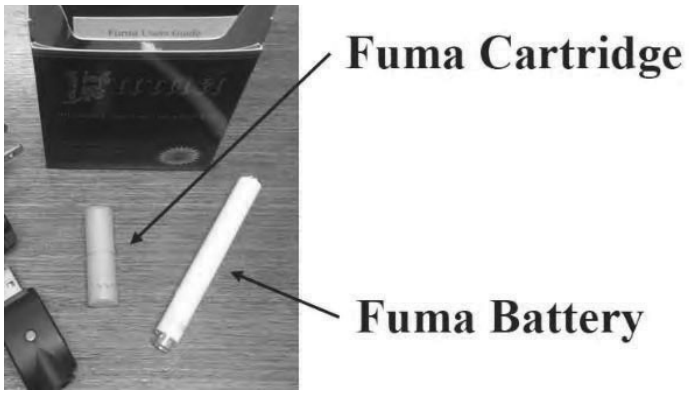
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The Tolerance Drawings show an apparatus.



JX-0508C.0010

The first commercial run Fuma E-Cigarette is an apparatus.



JX-0543 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.1] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

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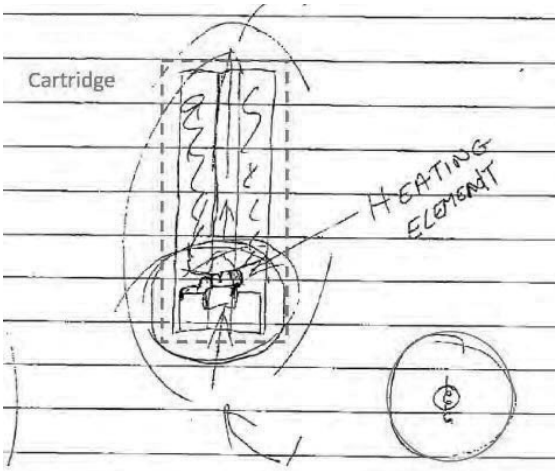
[redacted]

b) [1.2] a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion; and

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The cartridge as shown in the Conception Sketch would be configured to couple to a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion given that the first end of the cartridge has an opening to receive a male end of a power source and a resistive heating coil. CX-2157C (Vallee Opening Report) ¶ 247.

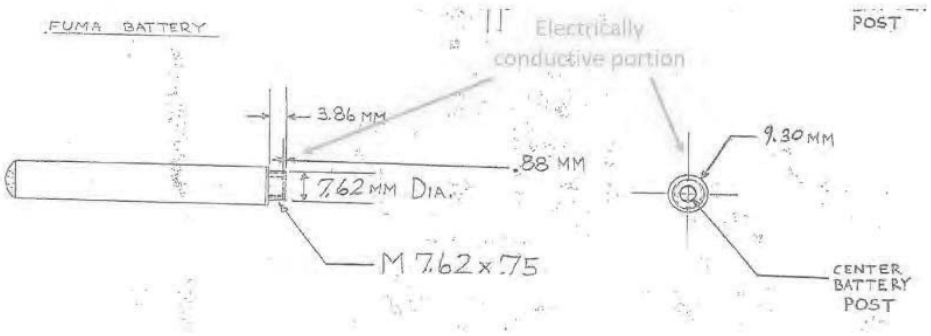


JX-0507.0003 (annotated)

The Tolerance Drawings show a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion.

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[redacted]



JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.2].



JX-0543 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.2] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

c) [1.3] a cartridge having a housing that comprises an interior, wherein the housing includes a first end and a second end that is

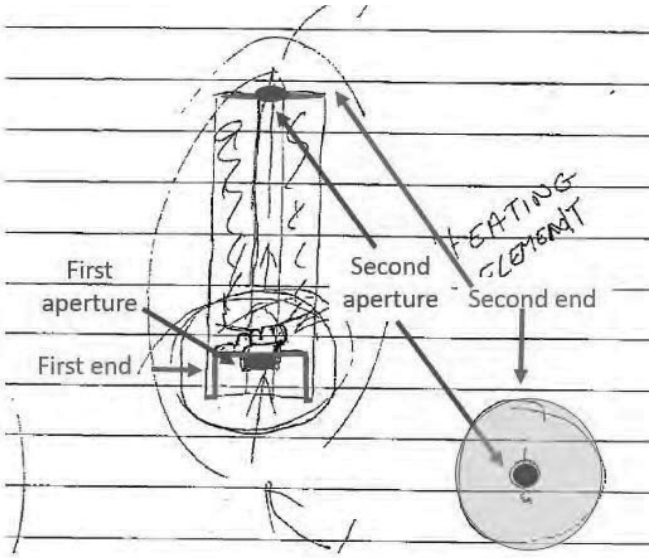
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opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a housing that comprises an interior, wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end.

The Conception Sketch shows a cartridge that practices claim limitation [1.3] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.

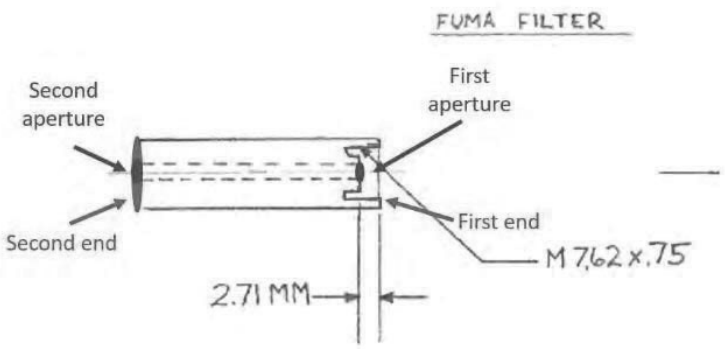


JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.3] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.

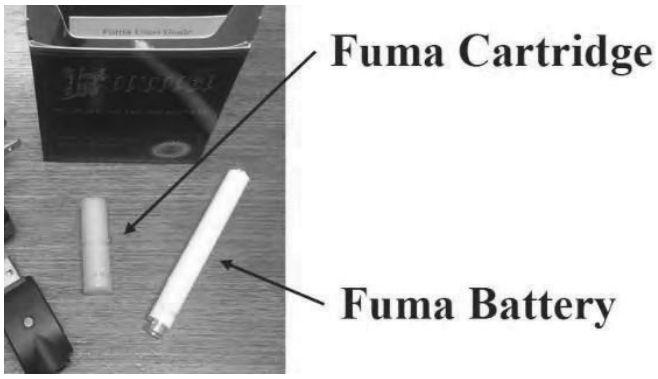
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[redacted]



JX-0508C.0007 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.3] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.

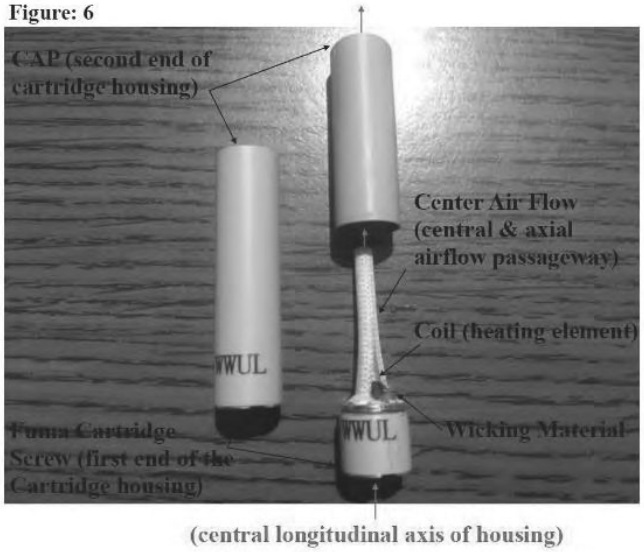


JX-0543 at Fig. 2

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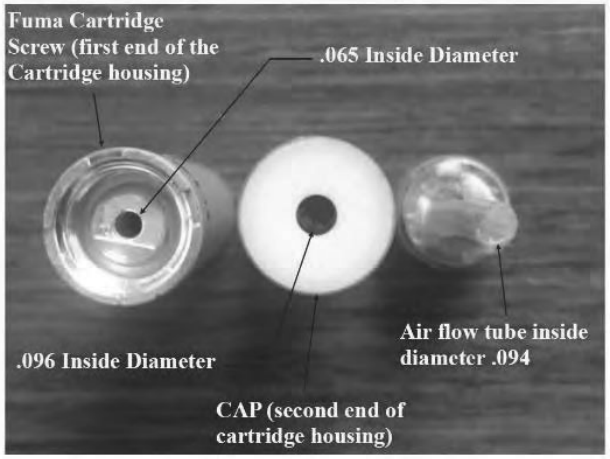
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Figure: 6



JX-0543 at Fig. 6

Figure: 15



JX-0543 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.3] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

d) [1.4] wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the

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cartridge from the first aperture to the second aperture of the housing,

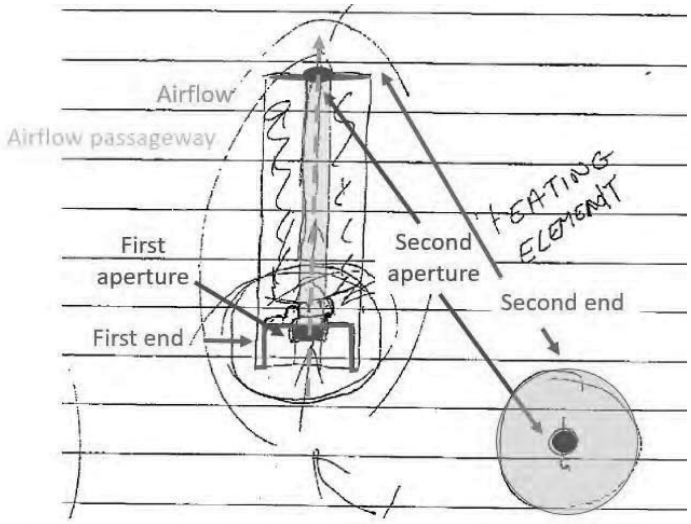
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having housing, which includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing.

The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The Conception Sketch shows a cartridge that practices claim limitation [1.4].

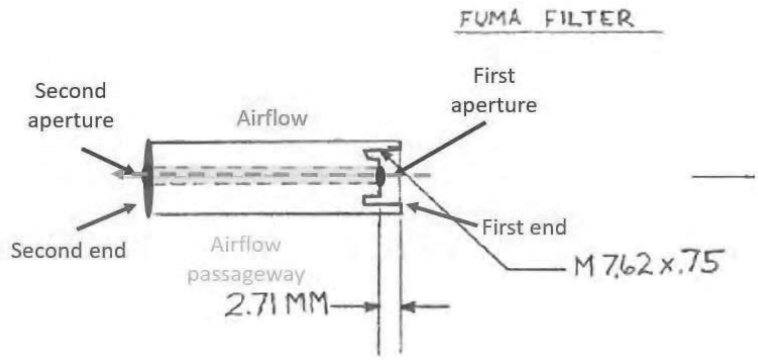
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.4].



JX-0508C.0007 (annotated)

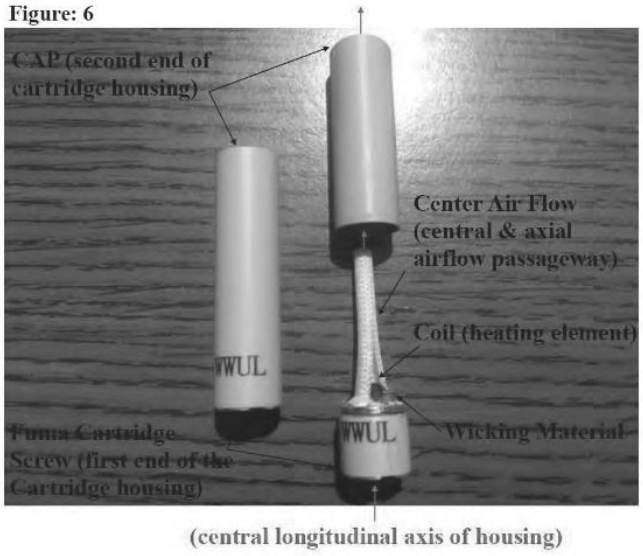
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.4].

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[redacted]



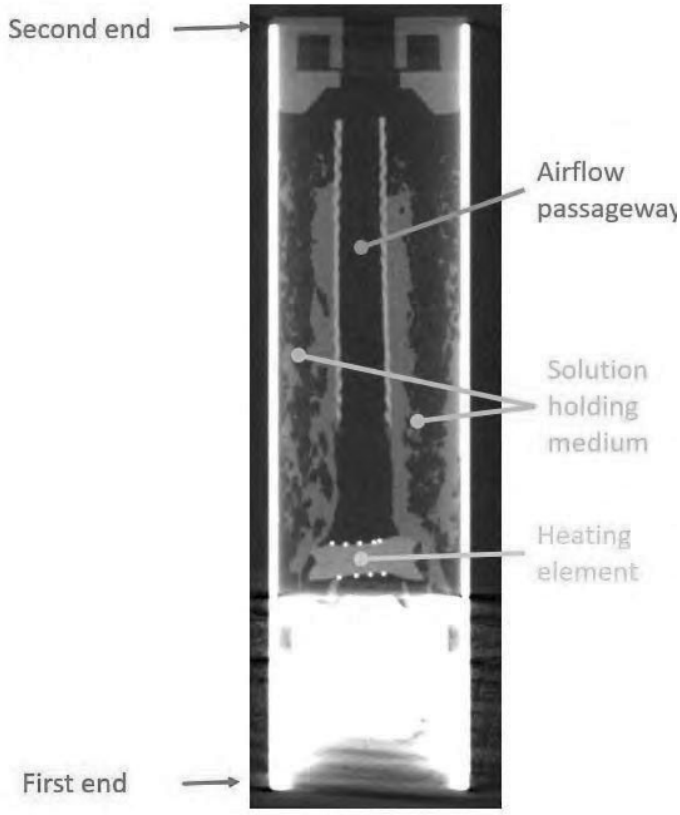
JX-0543 at Fig. 3



JX-0543 at Fig. 6; *see also id.* ¶ 5

NJOY Exhibit 2007.219
Juul v. NJOY
IPR2024-00160

[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.4] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

e) [1.5] wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source,

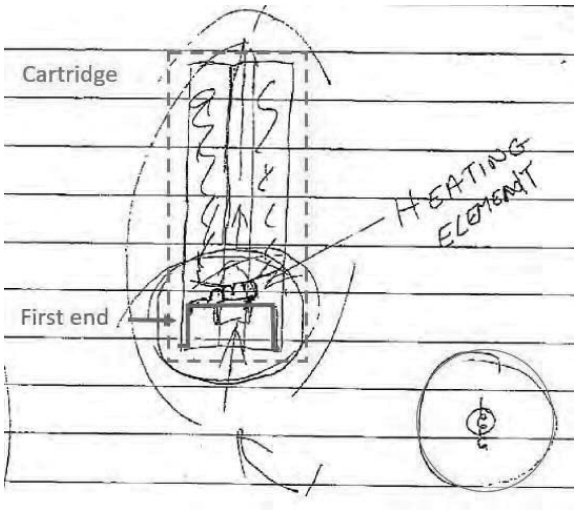
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a housing wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source.

NJOY Exhibit 2007.220
Juul v. NJOY
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[redacted]

The parties have agreed that the term "electrically conductive portion" means "a portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The cartridge as shown in the Conception Sketch would having a housing wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source given that the first end of the cartridge has an opening to receive a male end of a power source and the cartridge includes a resistive heating coil. CX-2157C (Vallee Opening Report) ¶ 259.

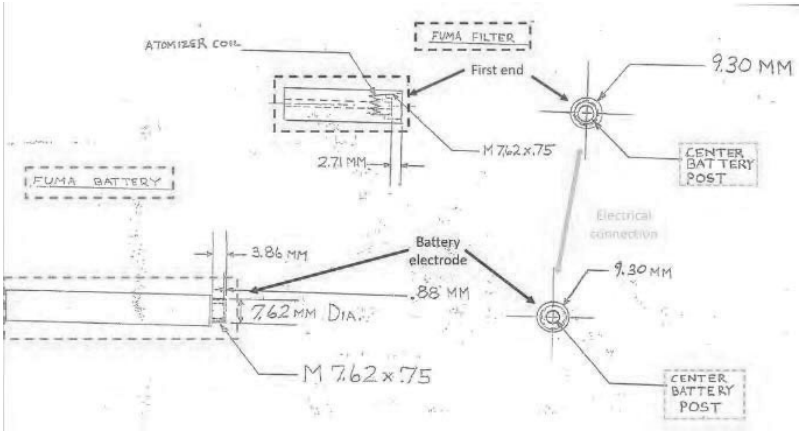


JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.5].

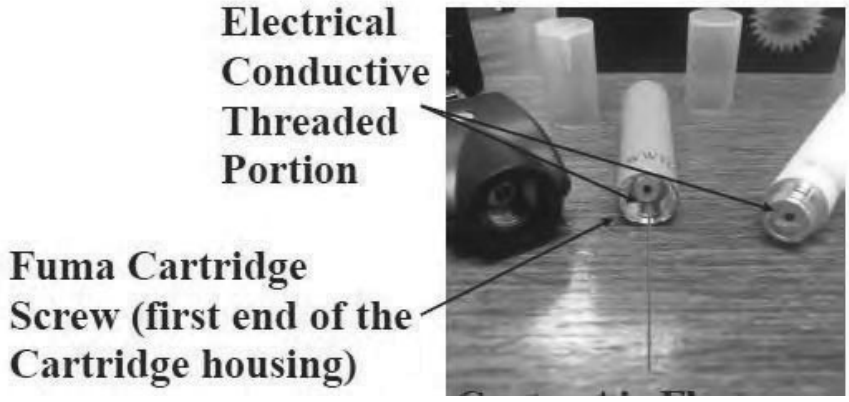
NJOY Exhibit 2007.221
Juul v. NJOY
IPR2024-00160

[redacted]



JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.5].



JX-0543 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.5] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

f) [1.6] wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing,

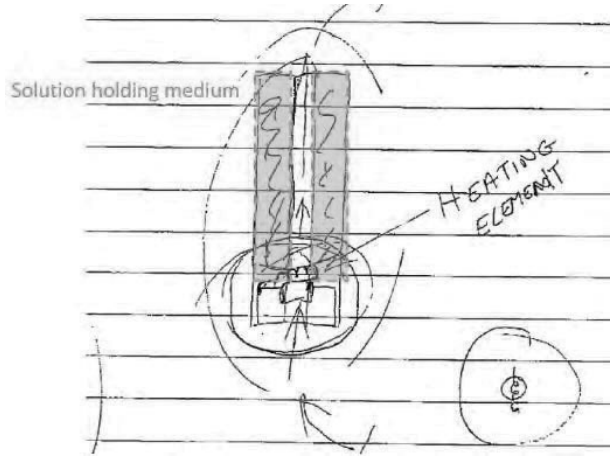
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a housing, wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing.

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Juul v. NJOY
IPR2024-00160

[redacted]

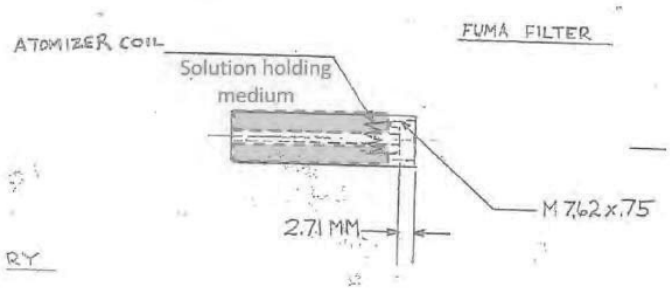
The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50.

The Conception Sketch shows a cartridge that practices claim limitation [1.6].



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.6].



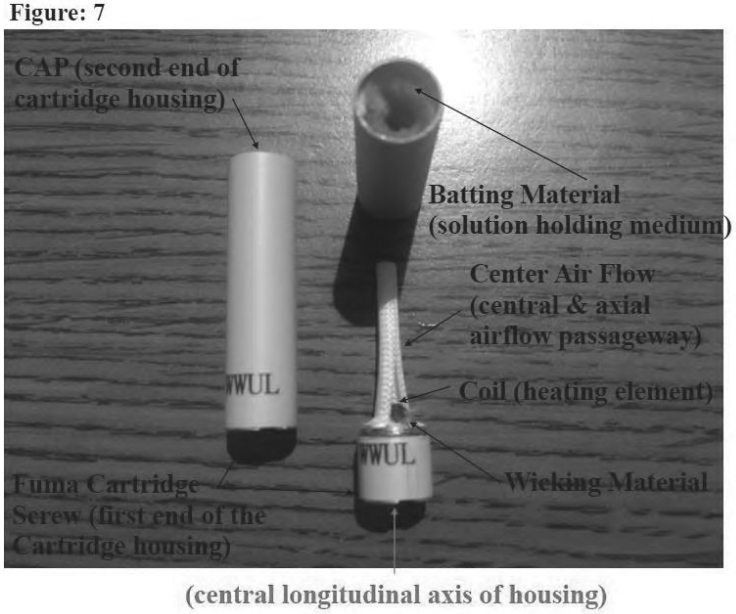
JX-0508C.0007 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.6].

NJOY Exhibit 2007.223
Juul v. NJOY
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[redacted]

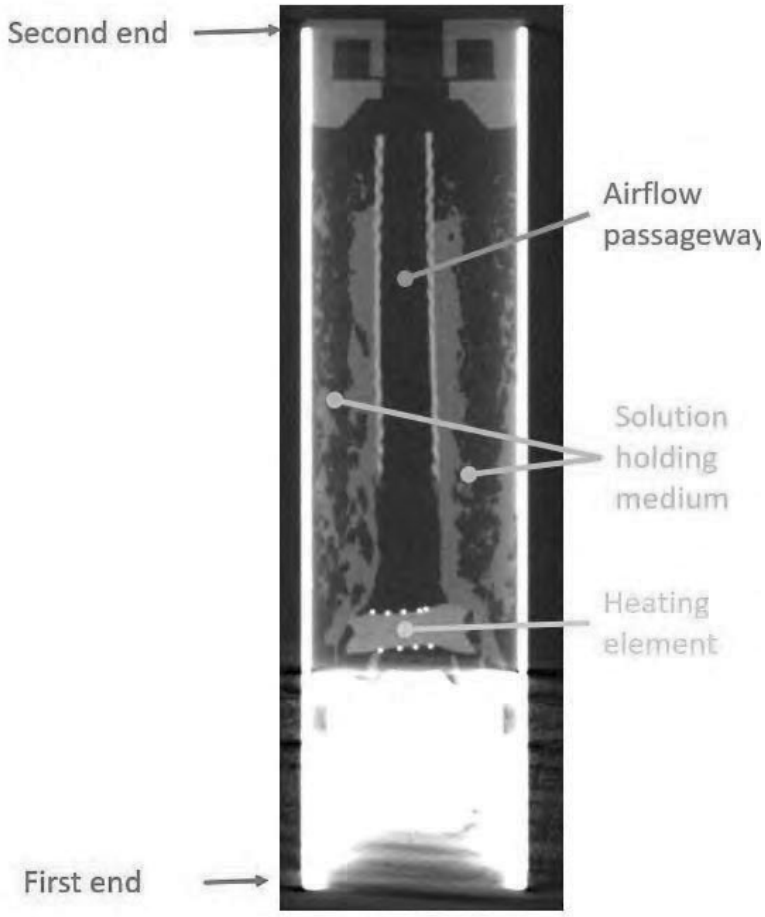
Figure: 7



JX-0543 at Fig. 7; *see also id.* ¶ 5

NJOY Exhibit 2007.224
Juul v. NJOY
IPR2024-00160

[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.6] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

g) [1.7] wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element,

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a housing, wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends

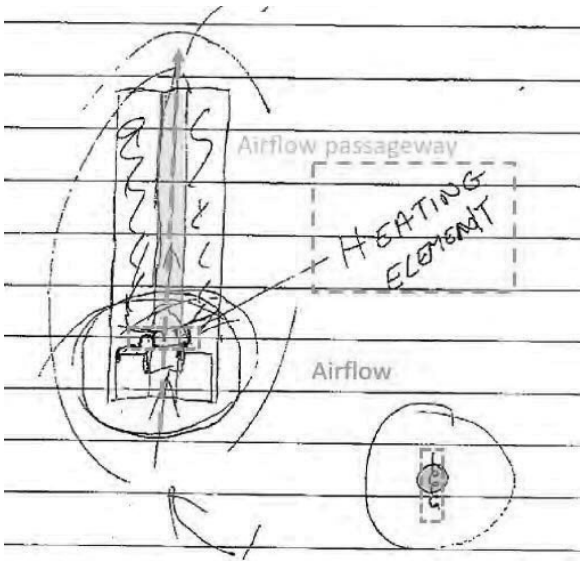
NJOY Exhibit 2007.225
Juul v. NJOY
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[redacted]

transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element.

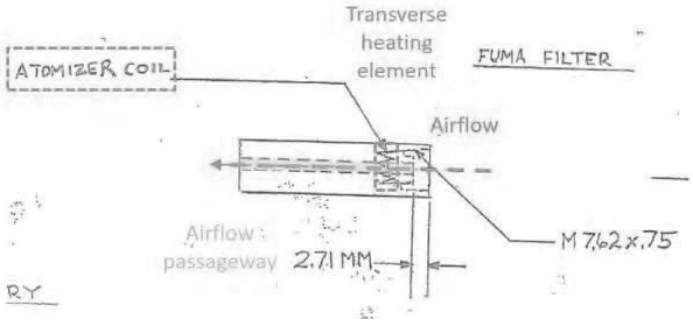
The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

The Conception Sketch shows a cartridge that practices claim limitation [1.7].



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.7].

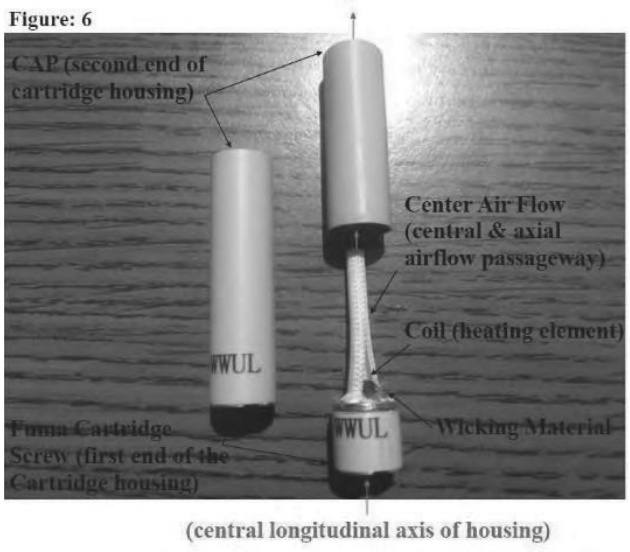


JX-0508C.0010 (annotated)

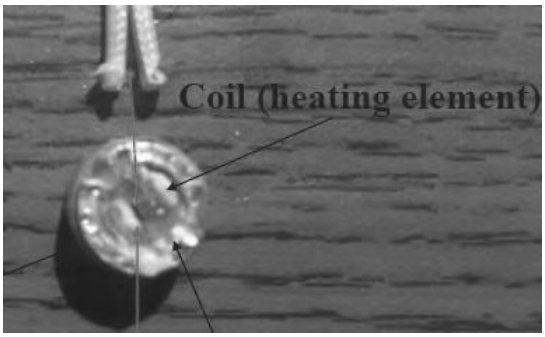
NJOY Exhibit 2007.226
Juul v. NJOY
IPR2024-00160

[redacted]

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.7].



JX-0543 at Fig. 6



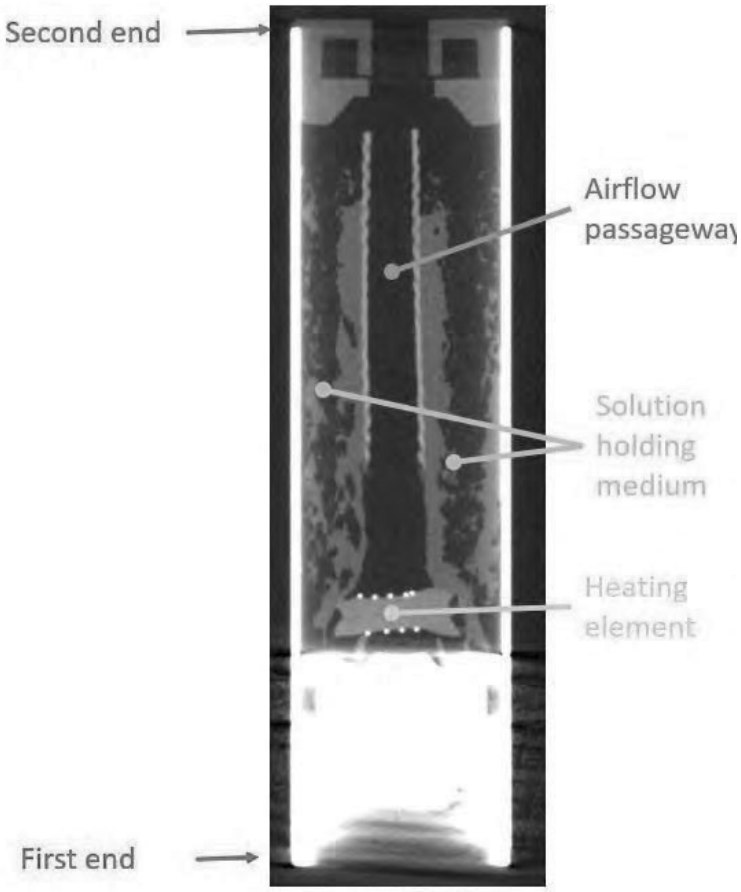
JX-0543 at Fig. 13

NJOY Exhibit 2007.227
Juul v. NJOY
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[redacted]



JX-0543 at Fig. 11; *see also id.* ¶ 5



NJOY Exhibit 2007.228
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IPR2024-00160

[redacted]

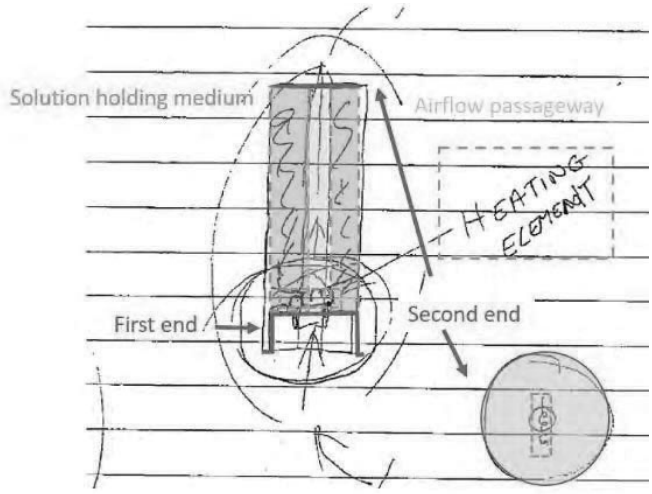
CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.7] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

h) [1.8] wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end,

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a solution holding medium, wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end.

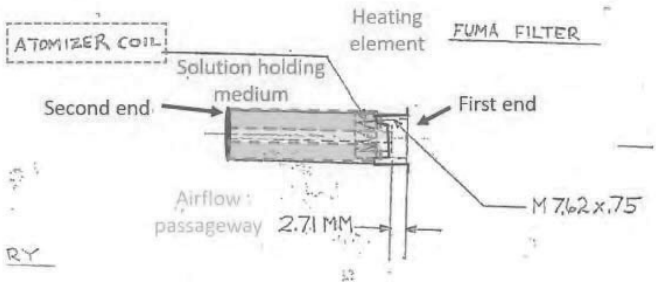
The Conception Sketch shows a cartridge that practices claim limitation [1.8].



JX-0507.0003 (annotated)

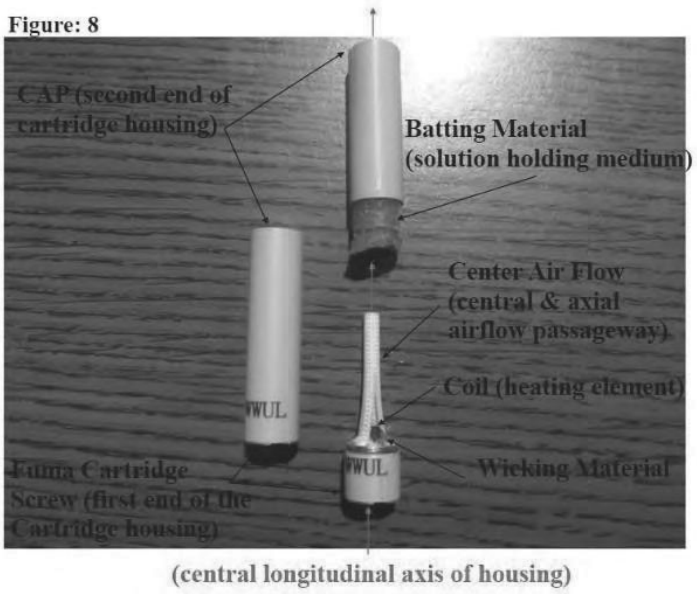
The Tolerance Drawings show a cartridge that practices claim limitation [1.8].

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JX-0508C.0010 (annotated)

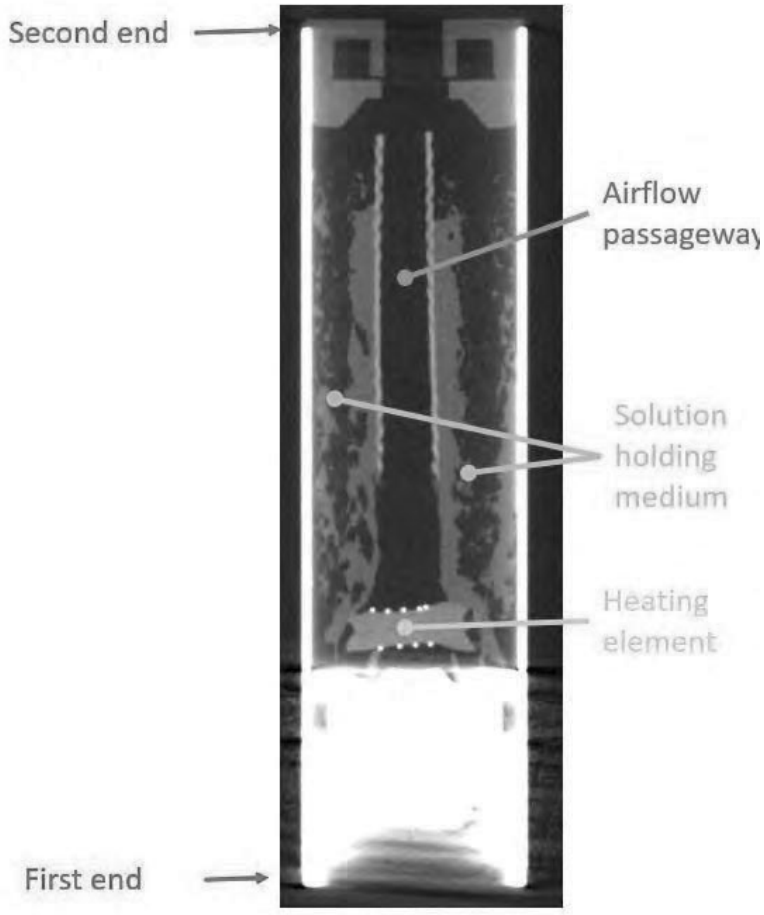
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.8].



JX-0543 at Fig. 8; *see also id.* ¶ 5

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Juul v. NJOY
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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.8] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

> i) [1.9] wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source.

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a heating element wherein the heating

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[redacted]

element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source.

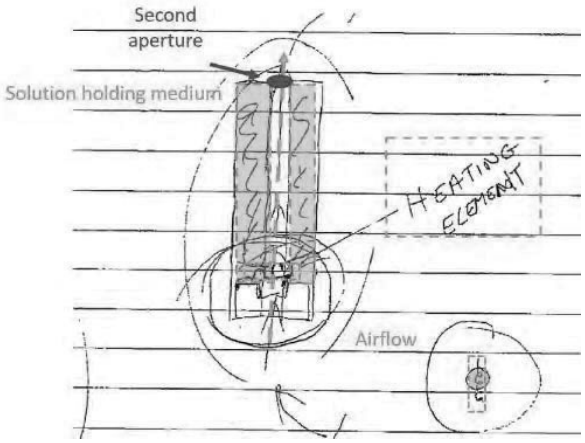
The term "electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The parties have agreed that the term "electrically conductive portion" means "a portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The cartridge as shown in the Conception Sketch would have a heating element wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source given that the first end of the cartridge has an opening to receive a male end of a power source and the cartridge includes a resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 276.

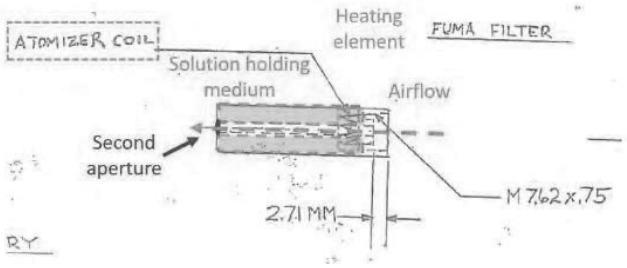
NJOY Exhibit 2007.232
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[redacted]

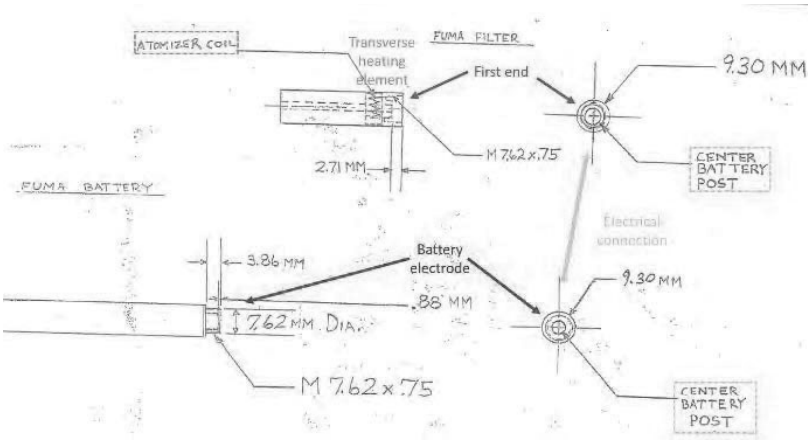


JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.9].



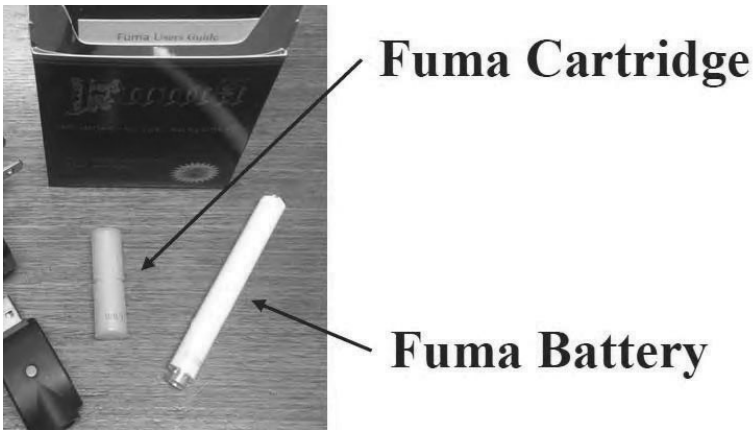
JX-0508C.0010 (annotated)



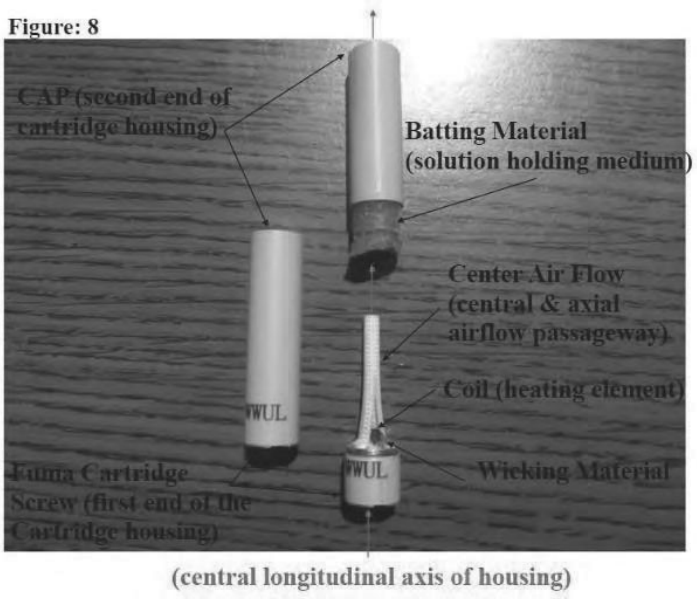
JX-0508C.0010 (annotated)

[redacted]

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.9].



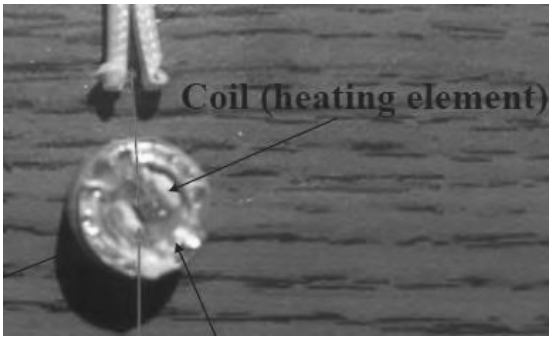
JX-0543 at Fig. 2



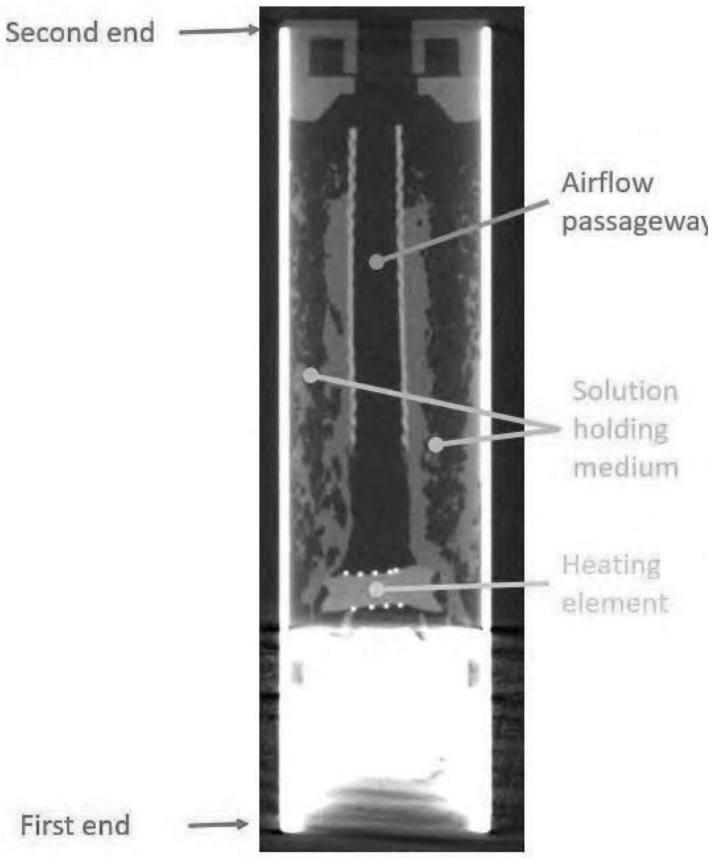
JX-0543 at Fig. 8; *see also id.* ¶ 5

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[redacted]



JX-0543 at Fig. 13; *see also id.* ¶¶ 4, 5



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.9] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

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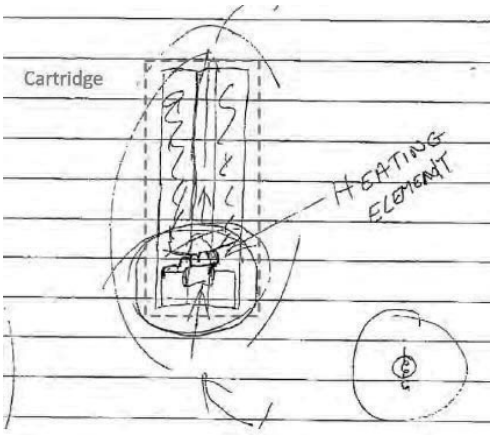
[redacted]

3. 881 Patent, Claim 16

a) [16.1] A cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer, the cartridge comprising:

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer.

The cartridge shown in the Conception Sketch would be configured to mechanically and electrically couple to a power source of an electronic vaporizer given that the first end of the cartridge has an opening to receive a male end of a power source and the cartridge includes a resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 330.

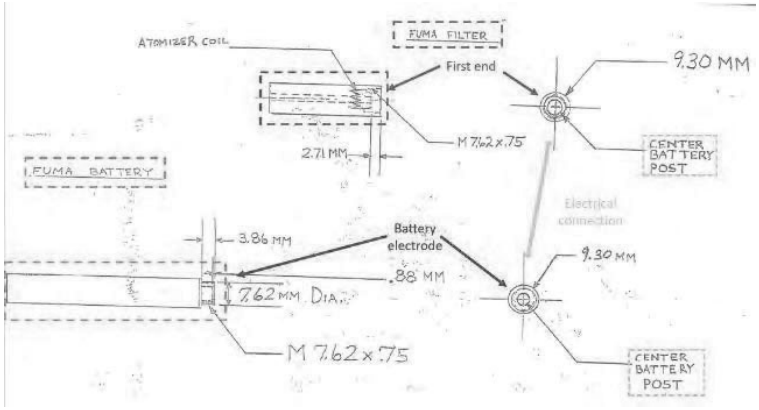


JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [16.1] as shown in the annotated figure below:

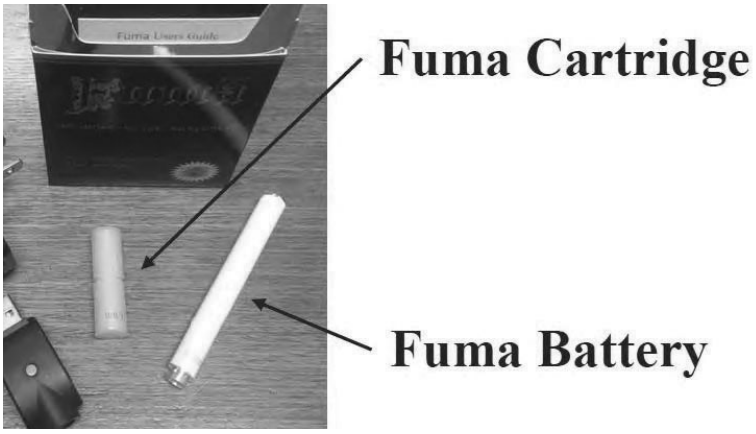
NJOY Exhibit 2007.236
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[redacted]



JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.1].



JX-0543 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [16.1] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

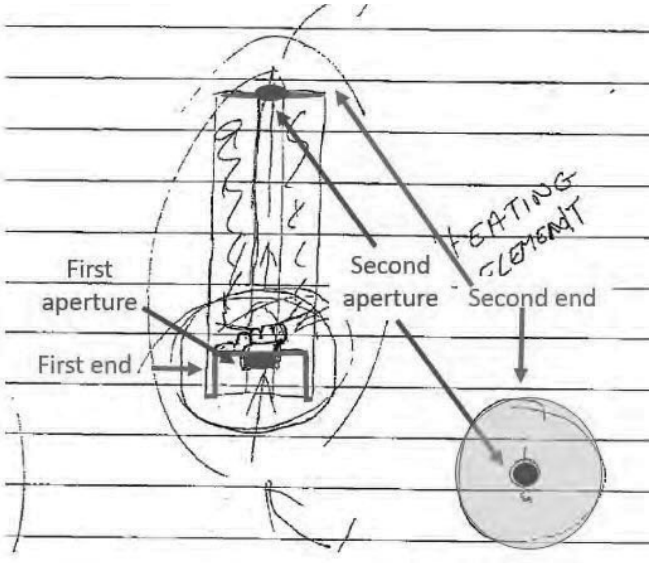
b) [16.2] a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge comprising a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing.

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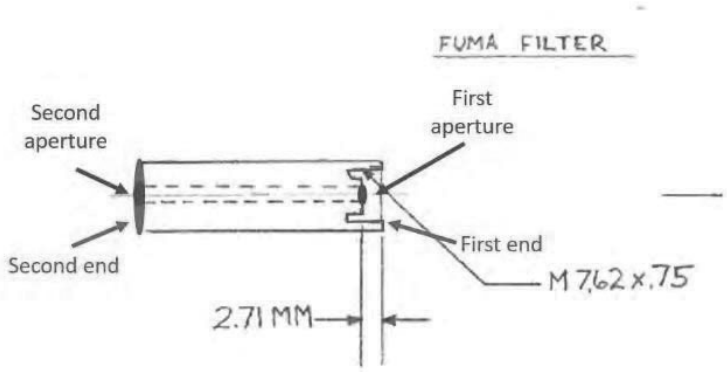
[redacted]

First, the Conception Sketch depicts a cartridge comprising a housing having an interior, wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.



JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge comprising a housing having an interior, wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.

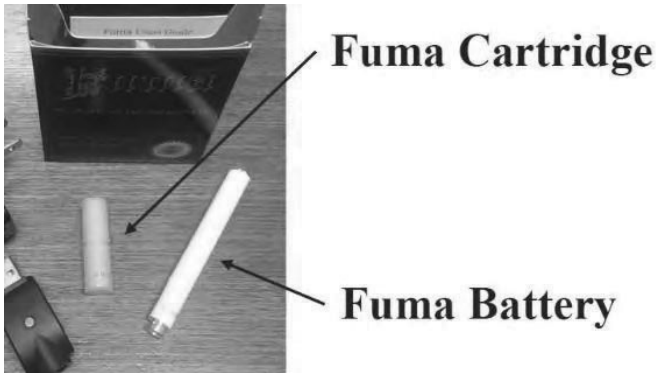


JX-0508C.0007 (annotated)

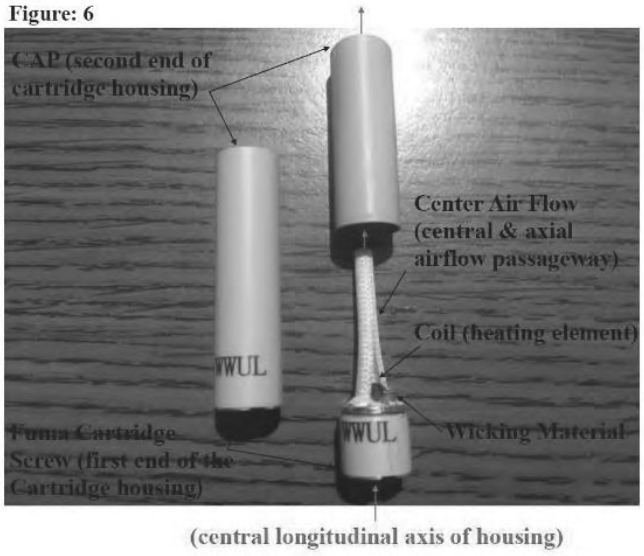
NJOY Exhibit 2007.238
Juul v. NJOY
IPR2024-00160

[redacted]

The first commercial run Fuma E-Cigarette comprises a cartridge comprising a housing having an interior, wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.



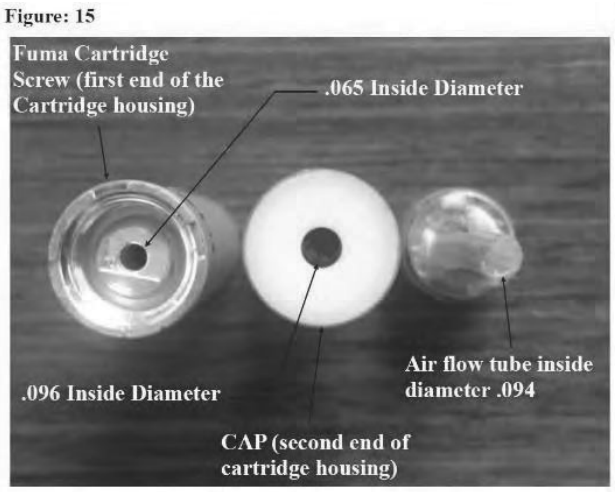
JX-0543 at Fig. 2



JX-0543 at Fig. 6

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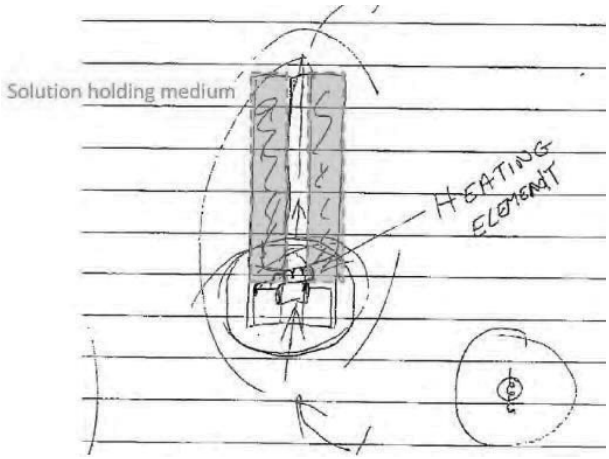
[redacted]



JX-0543 at Fig. 15; *see also id.* ¶ 5

Second, the term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50.

The Conception Sketch depicts a cartridge comprising a solution holding medium adapted to hold a solution in the interior of the housing.

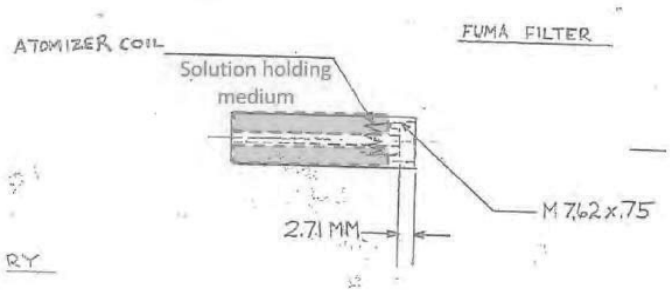


JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge comprising a solution holding medium adapted to hold a solution in the interior of the housing.

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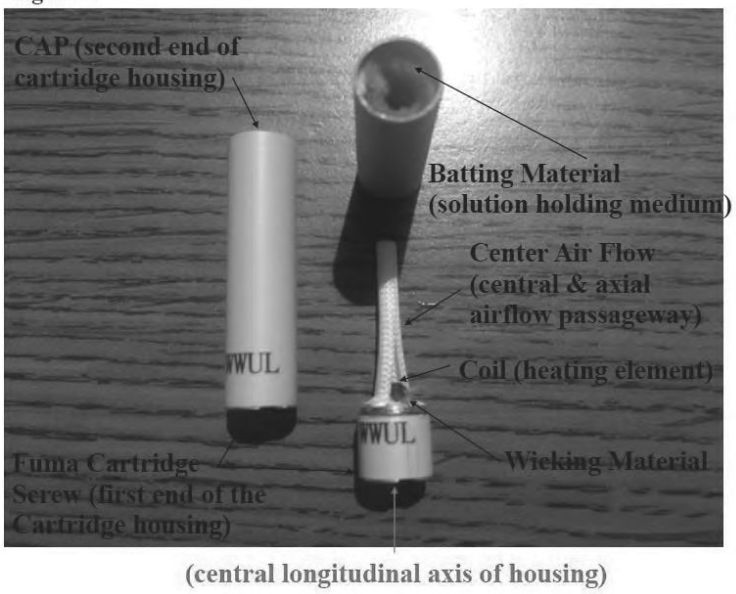
[redacted]



JX-0508C.0007 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge comprising a solution holding medium adapted to hold a solution in the interior of the housing.

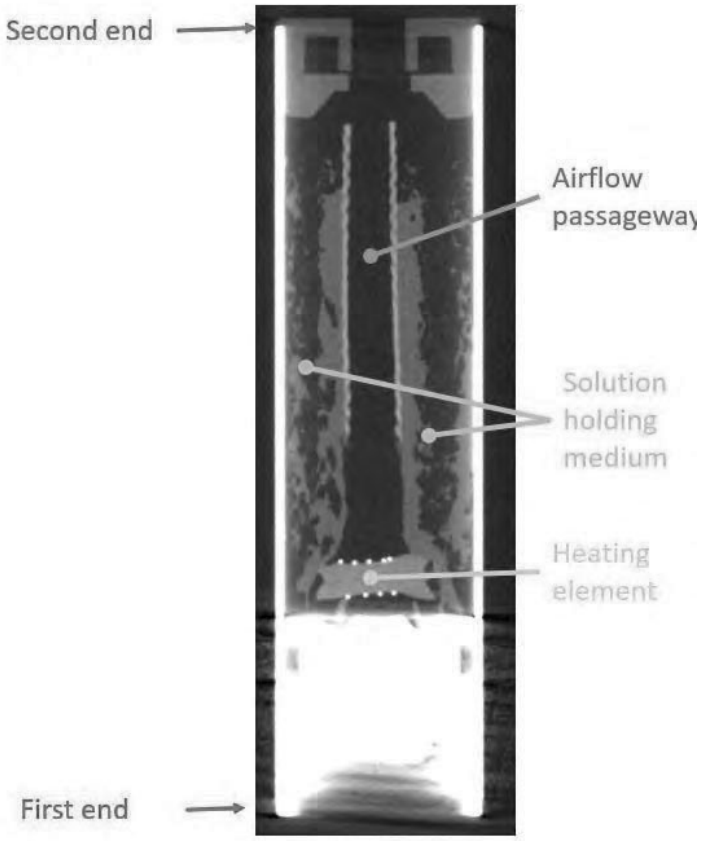
Figure: 7



JX-0543 at Fig. 7; *see also id.* ¶ 5

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [16.2] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

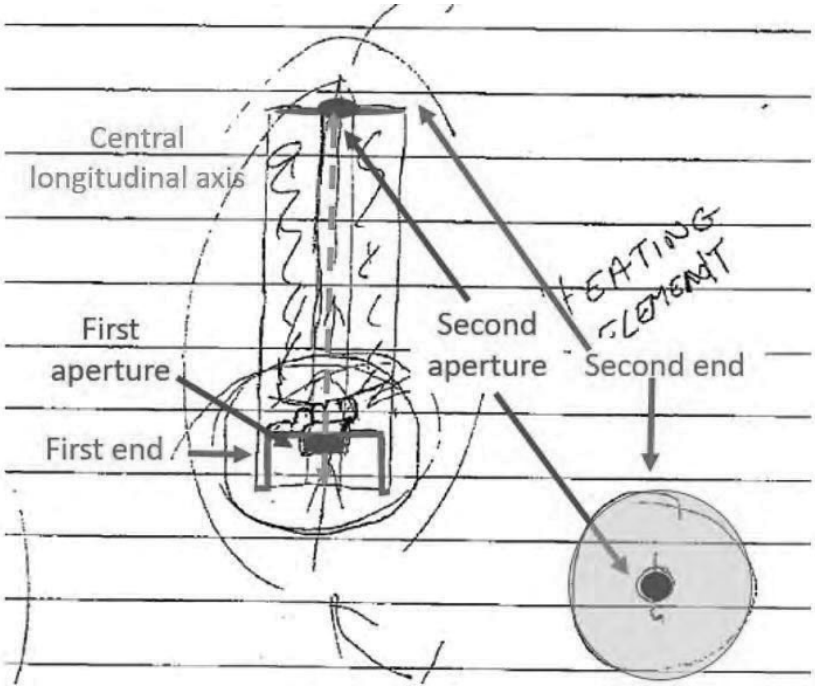
c) [16.3] the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge comprising a housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end.

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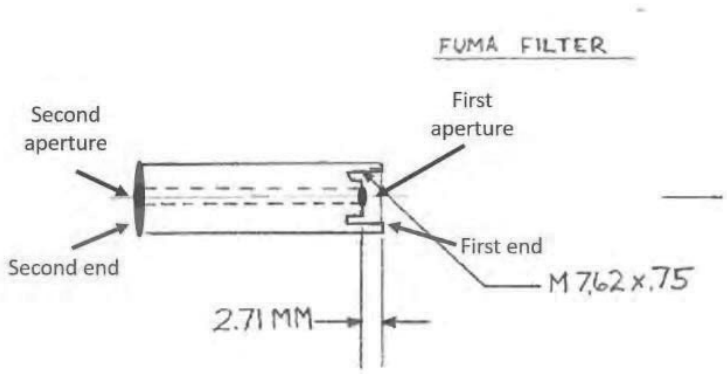
[redacted]

The Conception Sketch shows a cartridge that practices claim limitation [16.3] wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [16.3] wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.

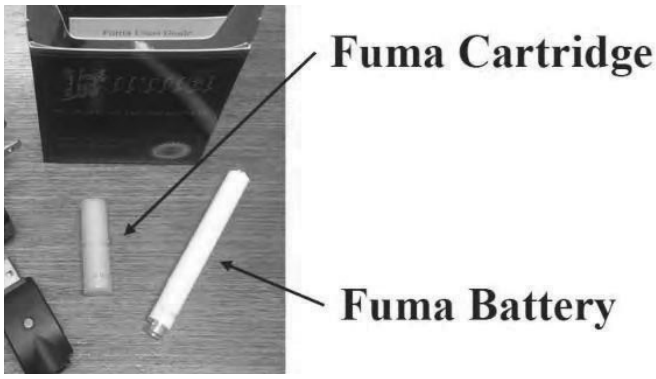


JX-0508C.0007 (annotated)

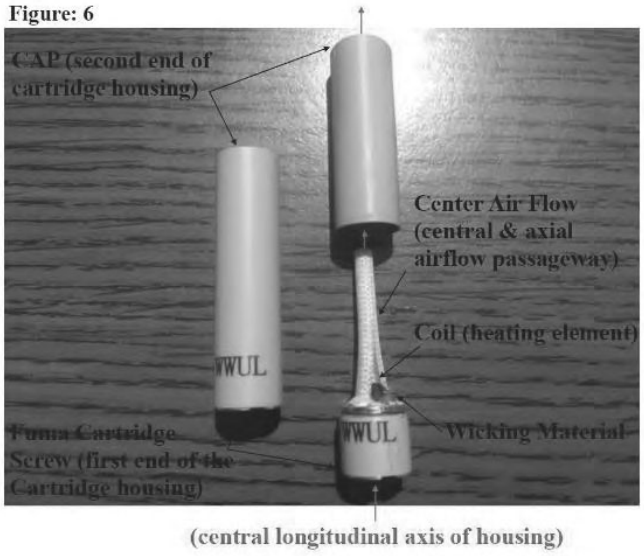
NJOY Exhibit 2007.243
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[redacted]

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.3] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.



JX-0543 at Fig. 2

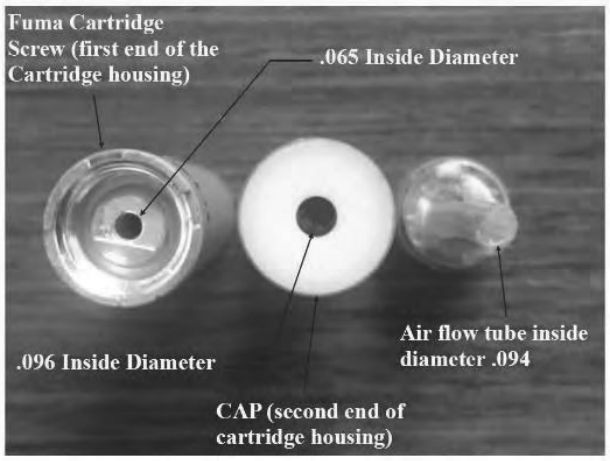


JX-0543 at Fig. 6

NJOY Exhibit 2007.244
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[redacted]

Figure: 15



JX-0543 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim limitation [16.3] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

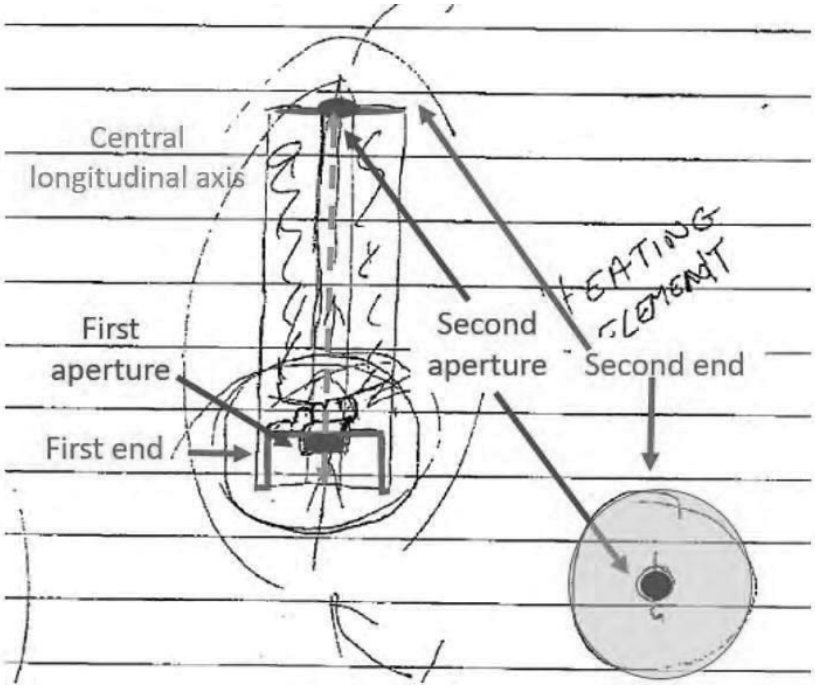
d) [16.4] the housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge comprising a housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing.

The Conception Sketch shows a cartridge that practices claim limitation [16.4] wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.

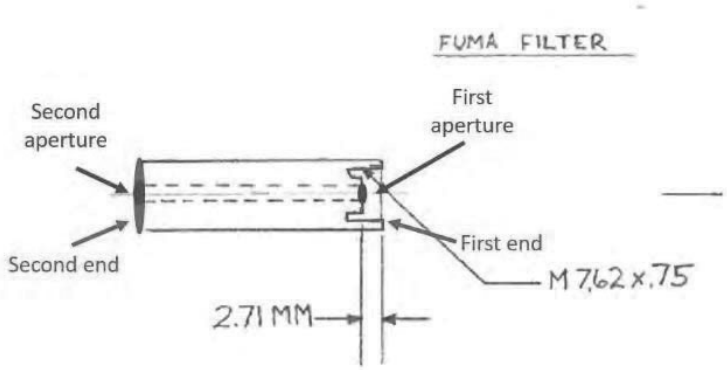
NJOY Exhibit 2007.245
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [16.4] wherein the housing corresponds to the exterior structure of the depicted e-cigarette cartridge.

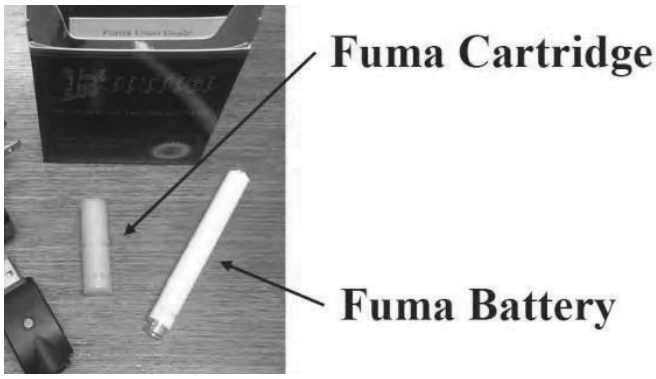


JX-0508C.0007 (annotated)

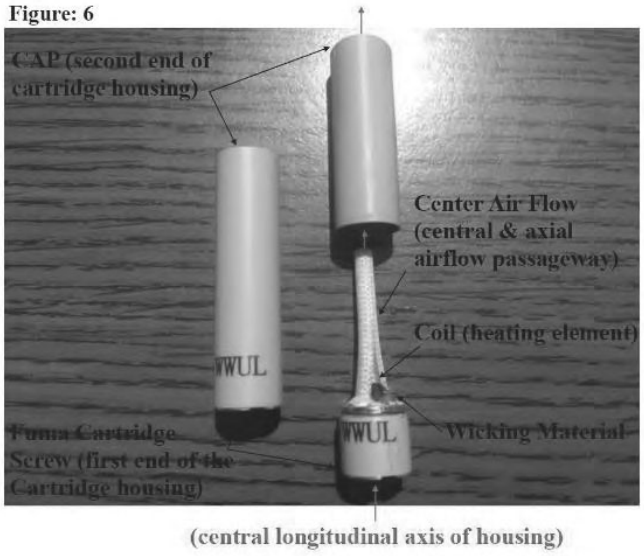
NJOY Exhibit 2007.246
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[redacted]

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.4] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.



JX-0543 at Fig. 2

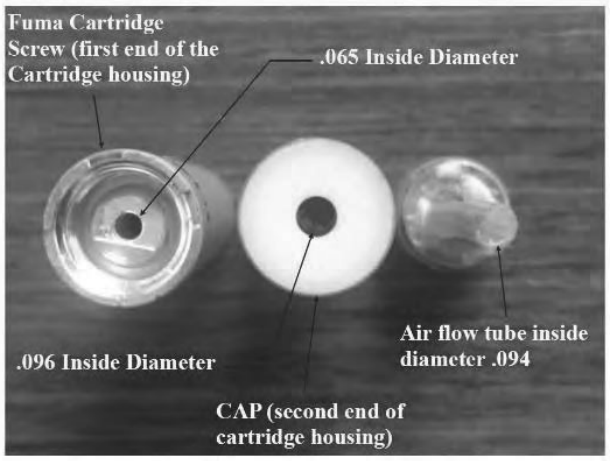


JX-0543 at Fig. 6

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[redacted]

Figure: 15



JX-0543 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim limitation [16.4] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

e) [16.5] the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge comprising the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source.

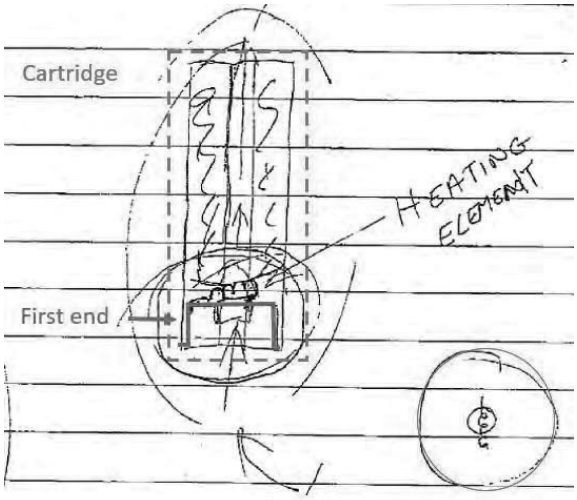
The parties have agreed that the term "electrically conductive portion" means "a portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The cartridge shown in the Conception Sketch would comprise a first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source given that the first end of the cartridge has an

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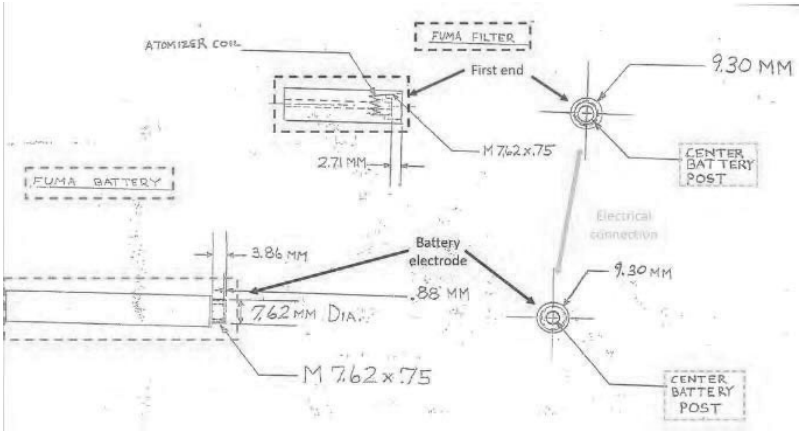
[redacted]

opening to receive a male end of a power source and the cartridge includes a resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 334.



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [16.5] as shown in the annotated figure below:

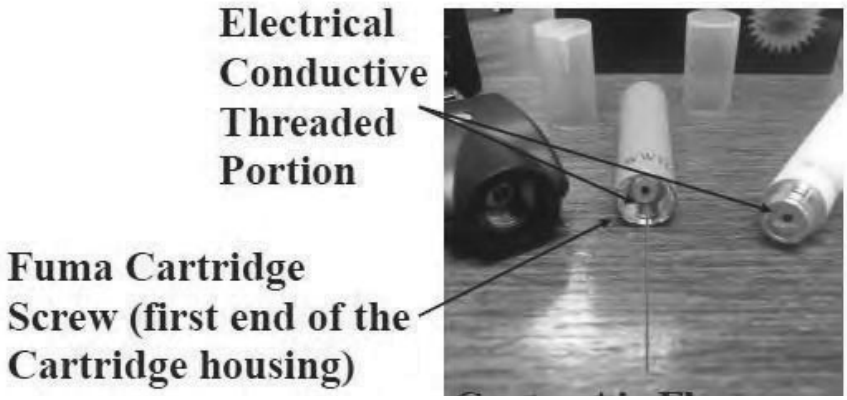


JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.5].

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[redacted]



JX-0543 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [16.5] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

f) [16.6] an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having housing, which includes an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing.

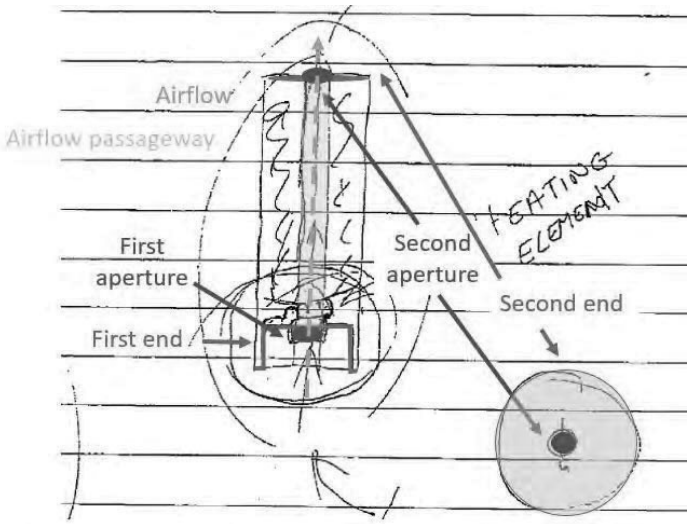
The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the

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[redacted]

second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The Conception Sketch depicts a cartridge that practices claim limitation [16.6] as shown in the annotated figure below:

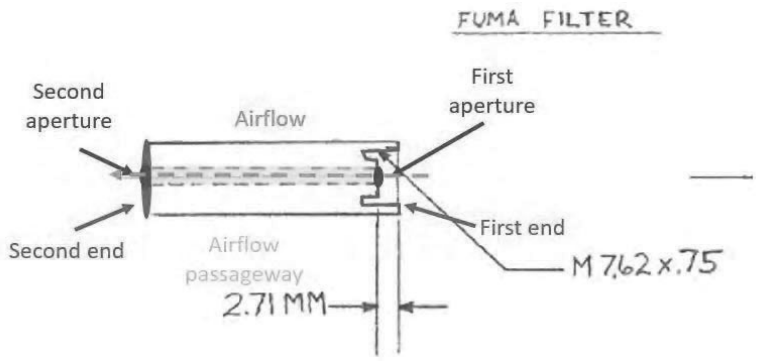


JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [16.6] as shown in the annotated figure below:

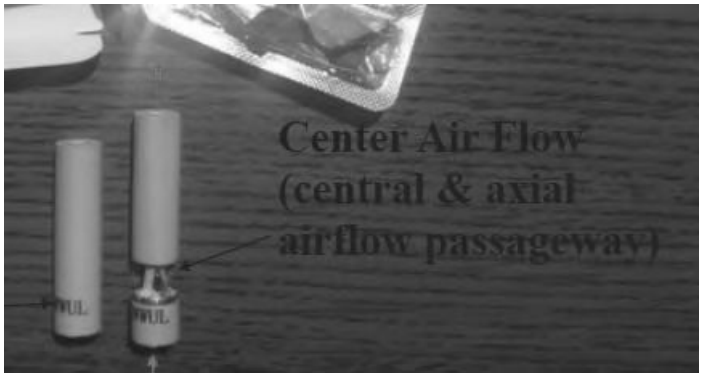
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[redacted]



JX-0508C.0007 (annotated)

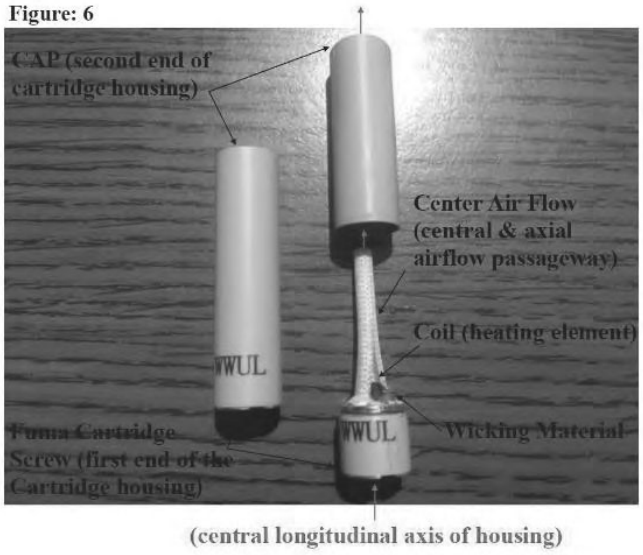
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.6].



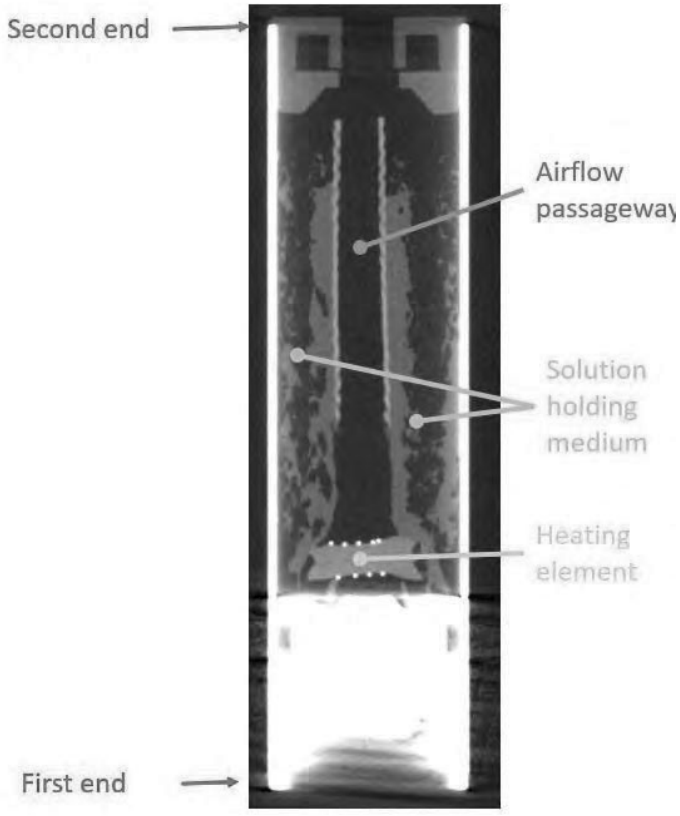
JX-0543 at Fig. 3

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[redacted]



JX-0543 at Fig. 6; *see also id.* ¶ 5



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[redacted]

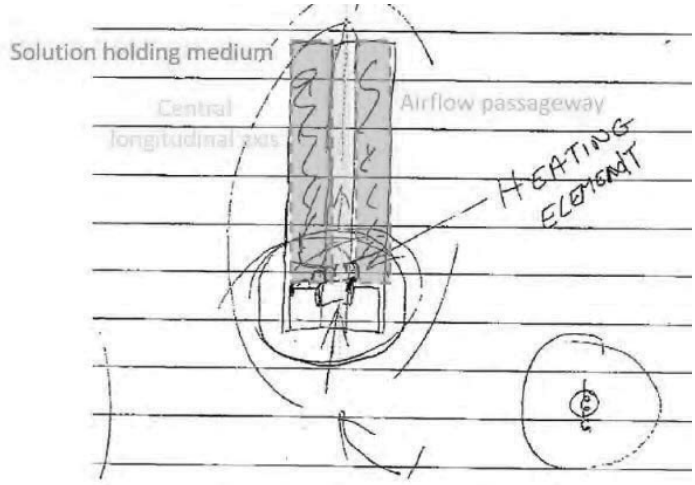
CX-2758.0078 (annotated)

Respondent concedes that claim limitation [16.6] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

g) [16.7] the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway; and

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having an airflow passageway, wherein the airflow passageway has an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway.

The Conception Sketch depicts a cartridge that practices claim limitation [16.7] as shown in the annotated figure below:

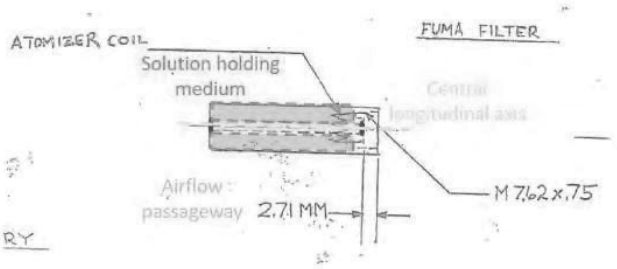


JX-0507.0003 (annotated)

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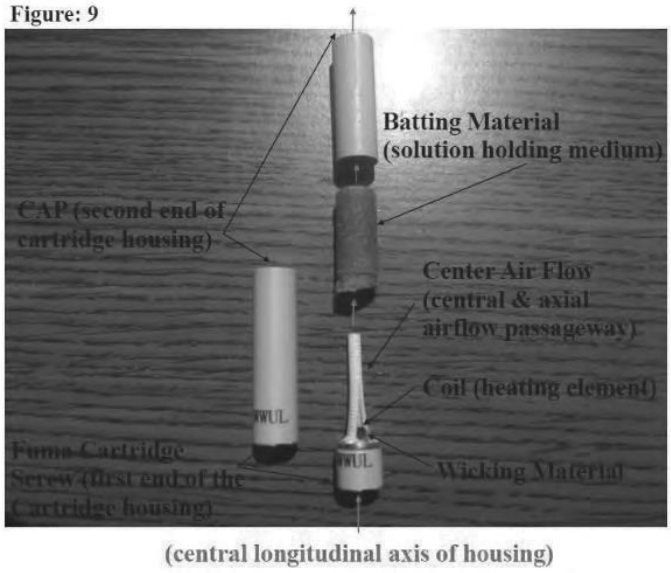
[redacted]

The Tolerance Drawings depict a cartridge that practices claim limitation [16.7] as shown in the annotated figure below:



JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.7].



JX-0543 at Fig. 9

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[redacted]



JX-0543 at Fig. 16; *see also id.* ¶ 5

Respondent concedes that claim limitation [16.7] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

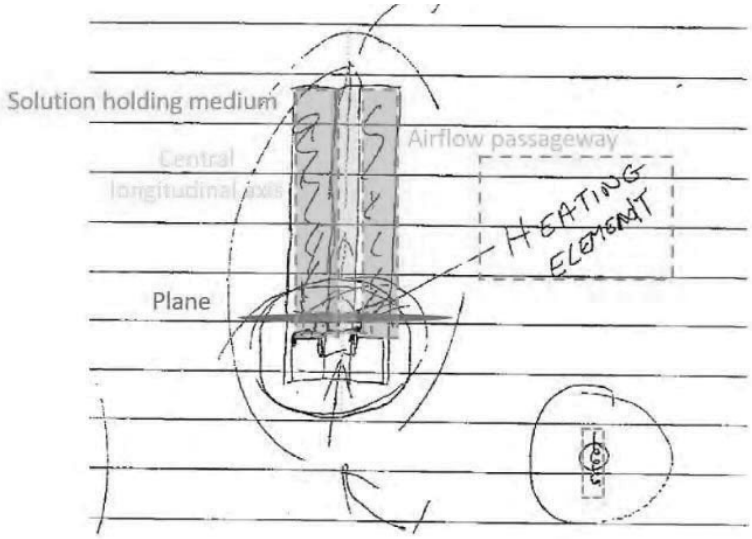
> h) [16.8] a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium.

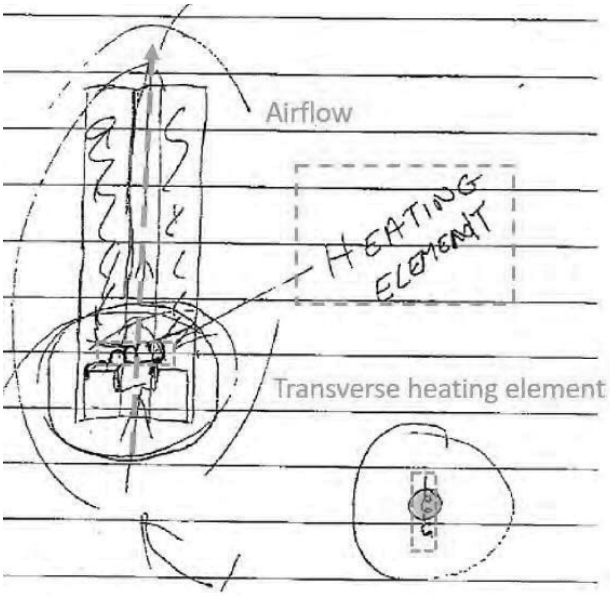
The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

The Conception Sketch shows a cartridge that practices claim limitation [16.8] wherein the heating element extends transversely across the airflow path such that the air would flow on both transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 341.

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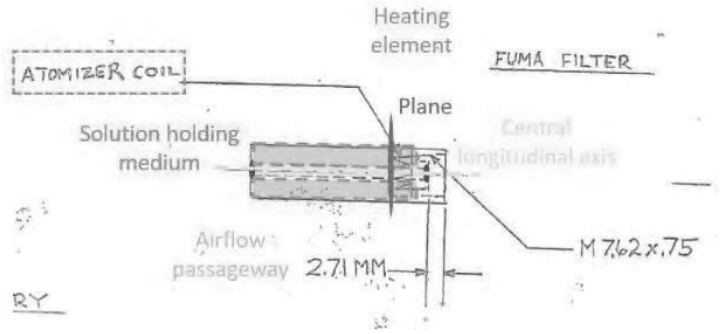
JX-0507.0003 (annotated)



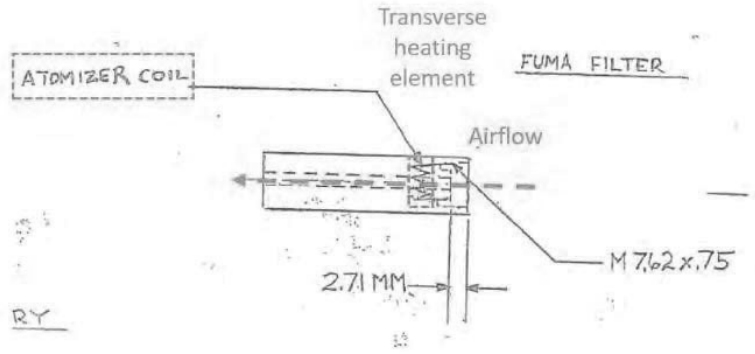
JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [16.8] wherein the heating element extends transversely across the airflow path such that the air would flow on both transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 342.

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JX-0508C.0010 (annotated)



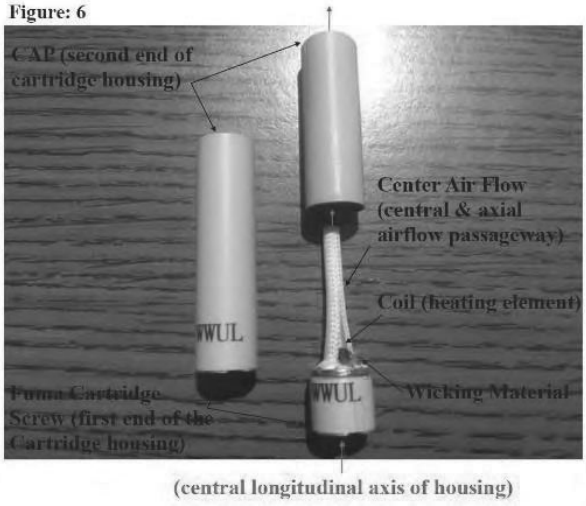
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.8] wherein the heating element extends transversely across the airflow path such that the air would flow on both transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 343.

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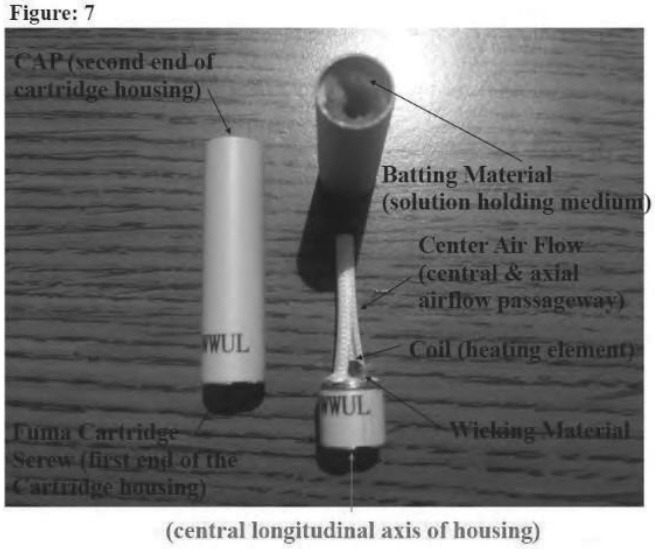
[redacted]

Figure: 6



JX-0543 at Fig. 6

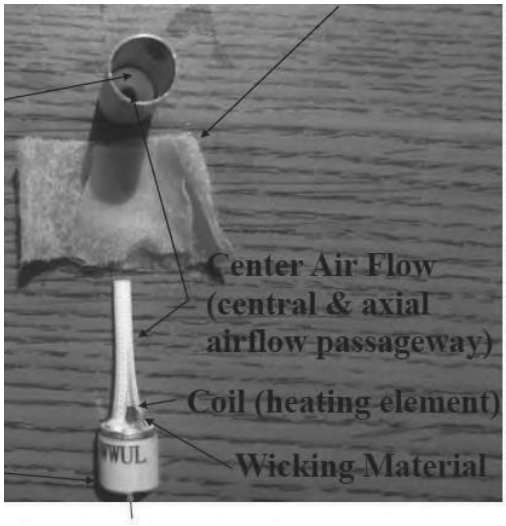
Figure: 7



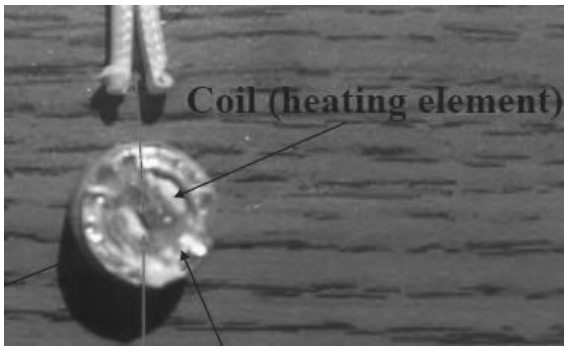
JX-0543 at Fig. 7

NJOY Exhibit 2007.259
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[redacted]

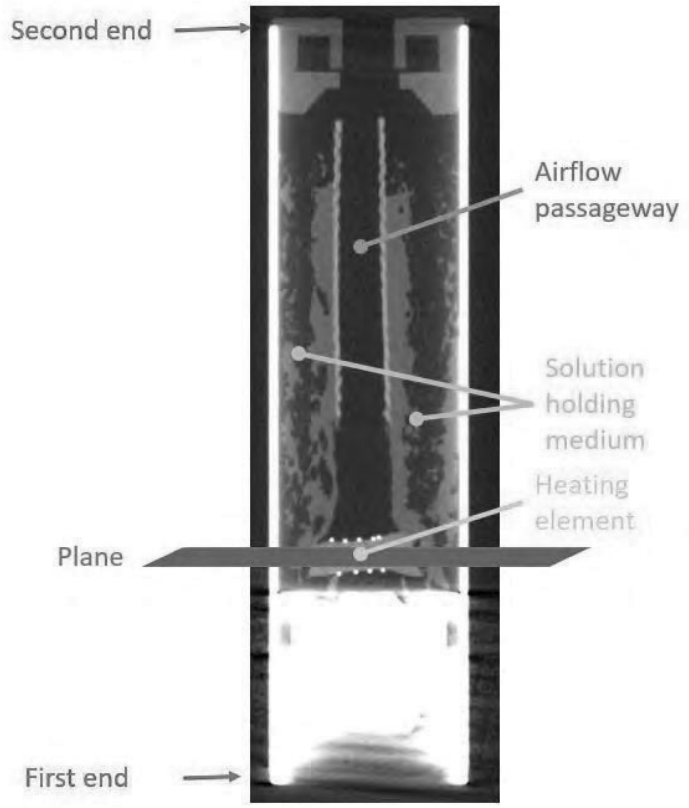


JX-0543 at Fig. 11



JX-0543 at Fig. 13; *see also id.* ¶ 5

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CX-2758.0078 (annotated)

Respondent concedes that claim limitation [16.8] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

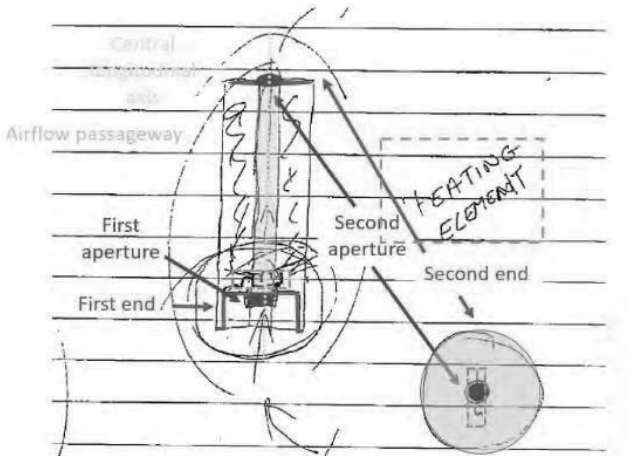
i) [16.9] the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 an airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture.

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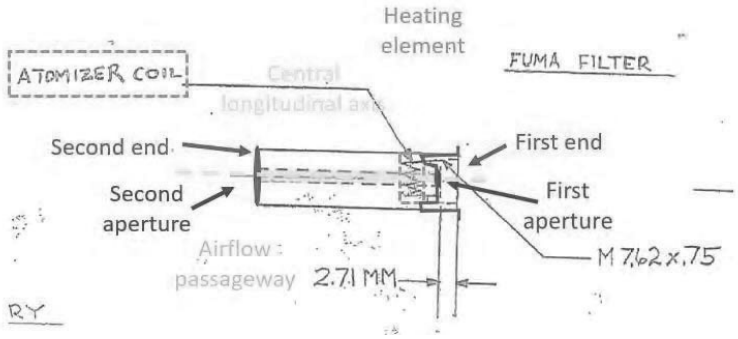
[redacted]

The Conception Sketch depicts a cartridge that practices claim limitation [16.9] as shown in the annotated figure below:



JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [16.9] as shown in the annotated figure below:



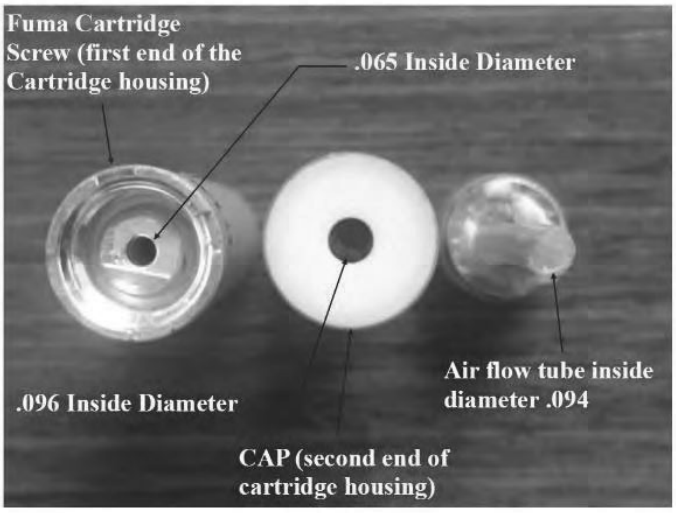
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.9].

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[redacted]

Figure: 15



JX-0543 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim limitation [16.9] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

j) [16.10] the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a heating element, the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge given that the first end of the cartridge has an opening to receive a male end of a power source.

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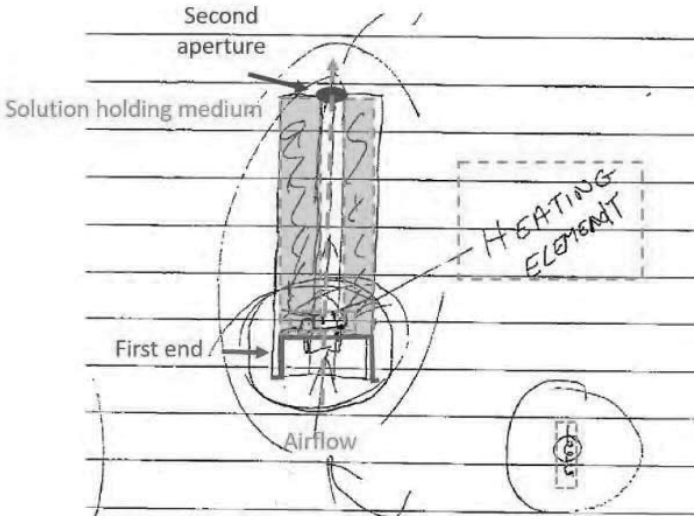
[redacted]

The term "electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

Moreover, the parties have agreed that the term "electrically conductive portion" means "a portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

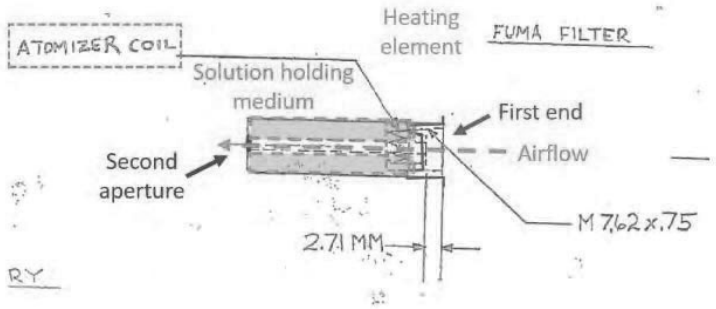
The cartridge shown in the Conception Sketch would have a heating element, the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge. *See* CX-2157C (Vallee Opening Report) ¶ 346.

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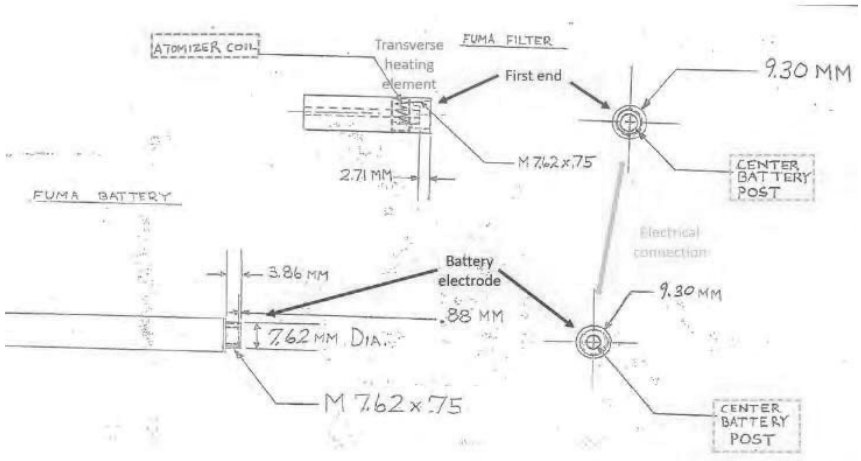
JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [16.10] as shown in the annotated figure below:



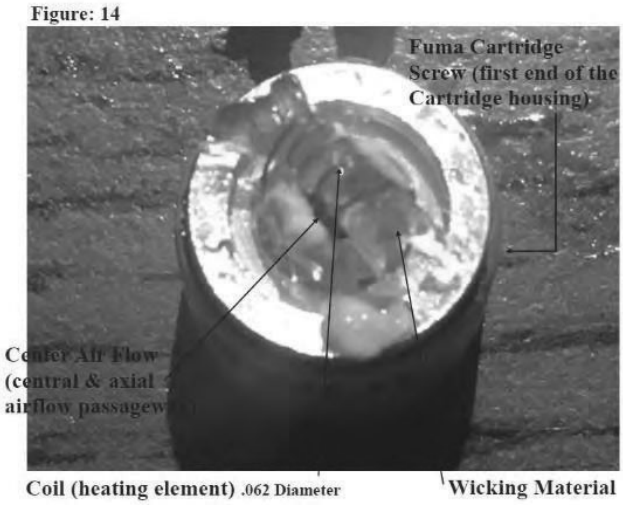
JX-0508C.0010 (annotated)

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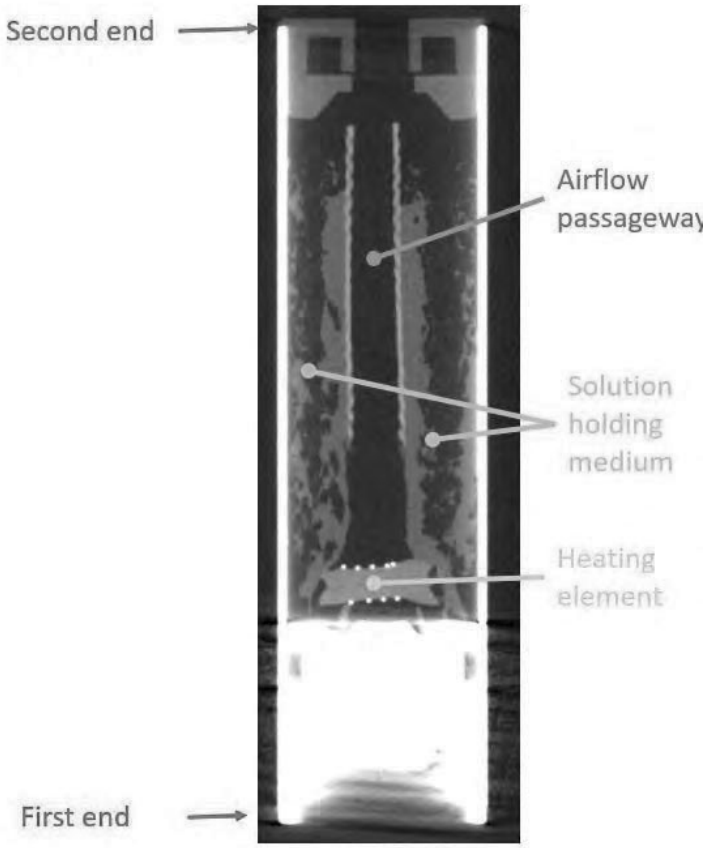
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [16.10].



JX-0543 at Fig. 14; *see also id.* ¶ 5

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CX-2758.0078 (annotated)

Respondent concedes that claim limitation [16.10] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

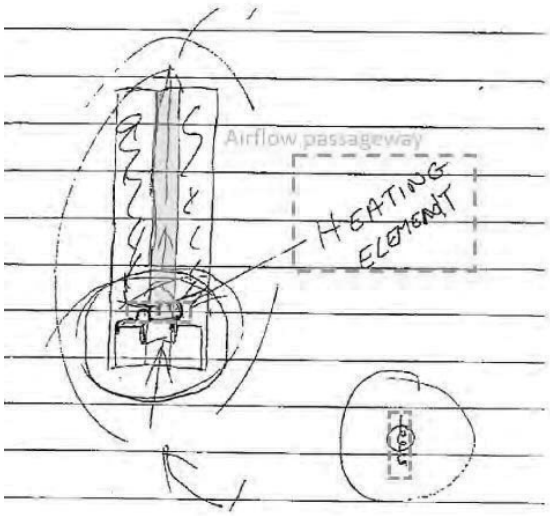
4. 881 Patent, Claim 18

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 16, wherein the heating element is a coil having a maximum diameter and the uniform cross-sectional area of the airflow passageway is a circle having a diameter, the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway."

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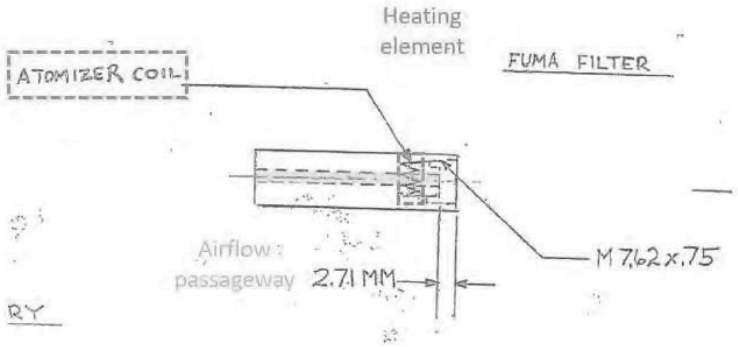
[redacted]

The Conception Sketch shows a cartridge that practices claim 18. In particular, the top-down views shows the uniform cross-sectional area of the airflow passageway has a diameter larger than the diameter of the coil.



JX-0507.0003 (annotated)

In my opinion, the Tolerance Drawings show a cartridge that practices claim 18. The uniform cross-sectional area of the airflow passageway would have a diameter larger than the diameter of the coil to allow airflow to pass through the airflow passageway. *See* CX-2157C (Vallee Opening Report) ¶ 350.

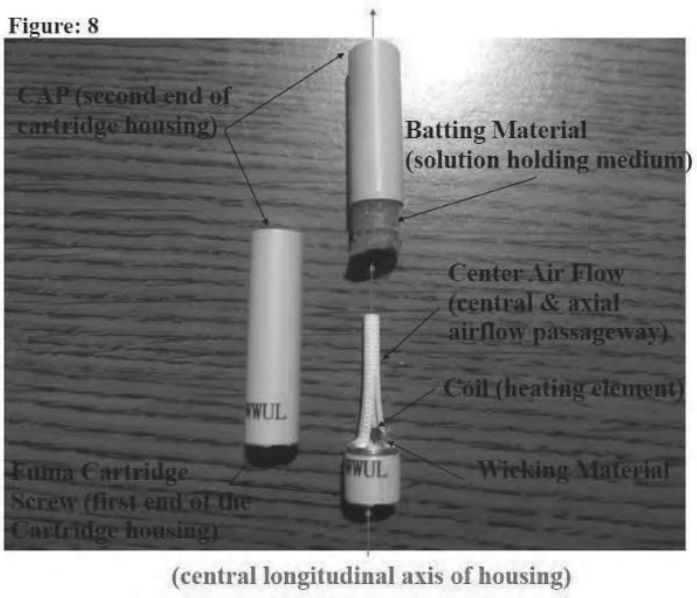


JX-0508C.0010 (annotated)

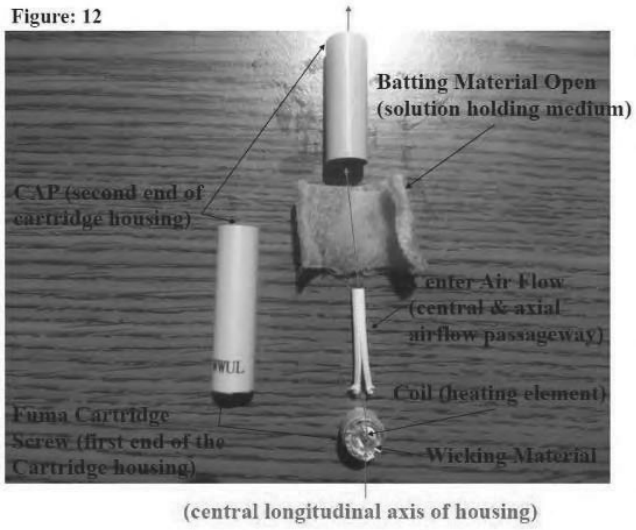
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[redacted]

In my opinion, the first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 18.



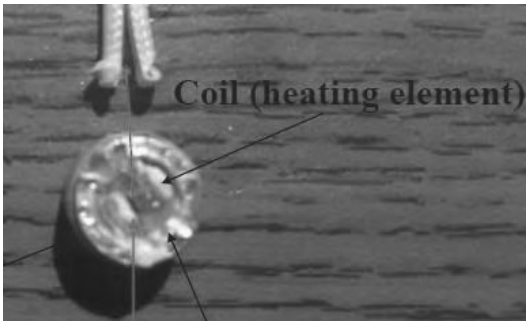
JX-0543 at Fig. 8



JX-0543 at Fig. 12

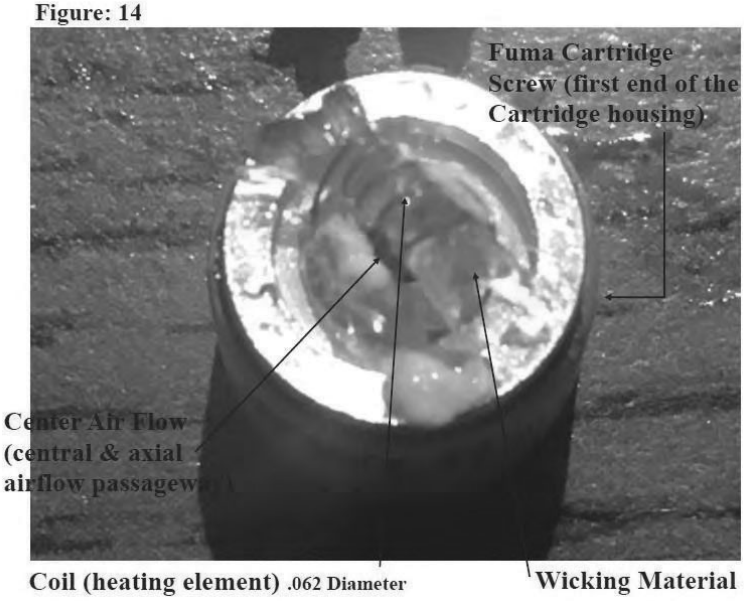
NJOY Exhibit 2007.269
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[redacted]



JX-0543 at Fig. 13

Figure: 14

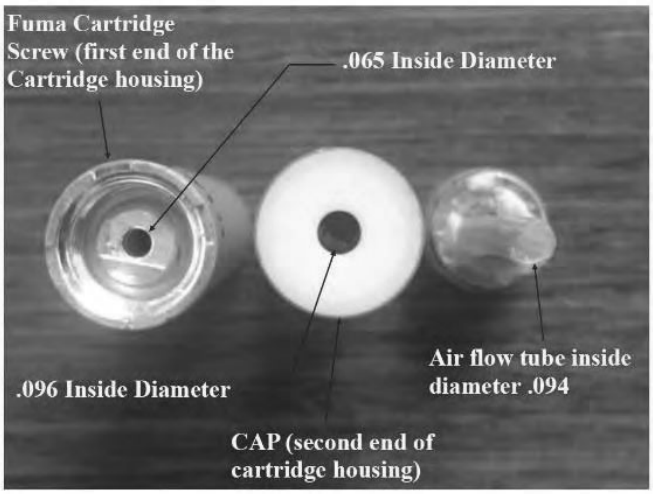


JX-0543 at Fig. 14

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[redacted]

Figure: 15



JX-0543 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim 18 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

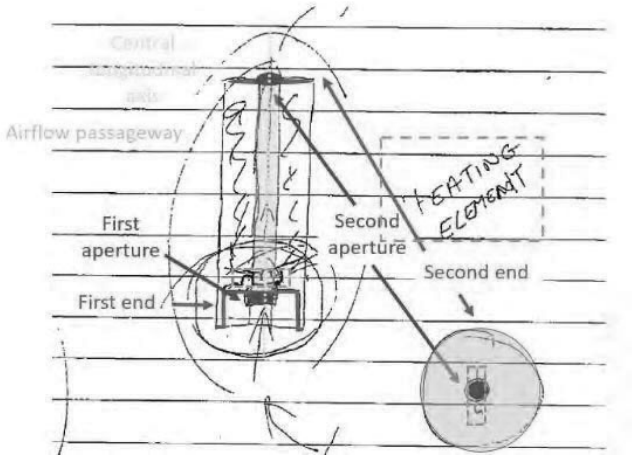
5. 881 Patent, Claim 19

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing."

The Conception Sketch depicts a cartridge that practices claim 19 as shown in the annotated figure below:

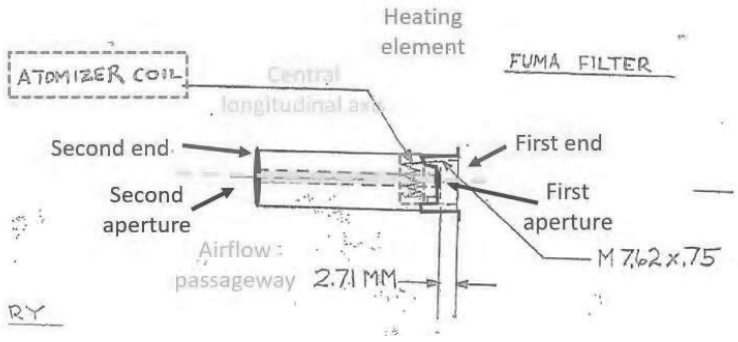
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim 19 as shown in the annotated figure below:



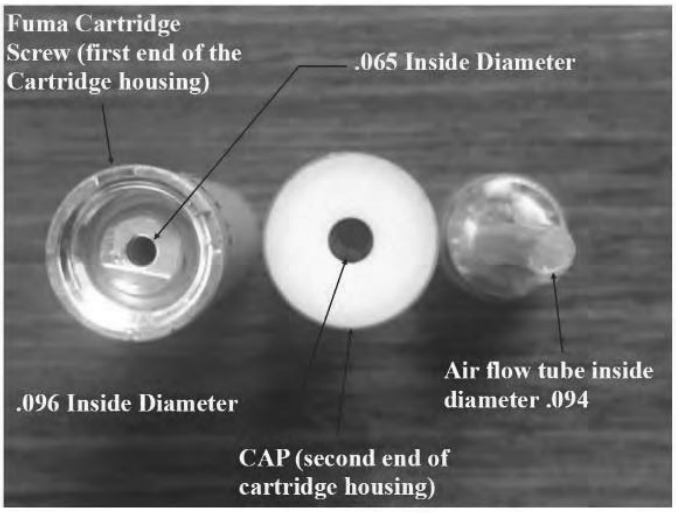
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 19.

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[redacted]

Figure: 15



JX-0543 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim 19 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

6. 881 Patent, Claim 26

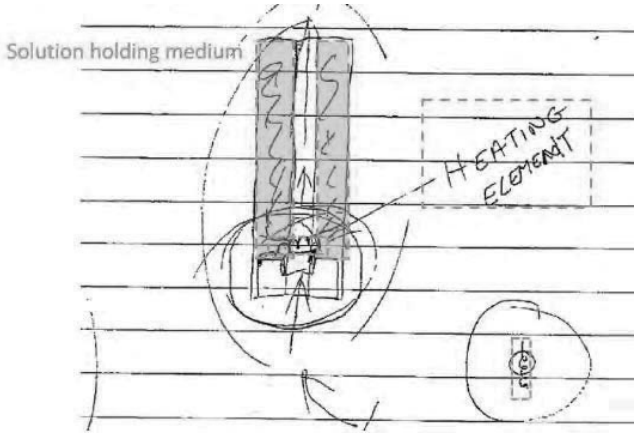
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 16, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element."

The cartridge shown in the Conception Sketch comprises a heating element and solution holding medium, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element given that a wicking material would be the expected, typical, and natural means to bring

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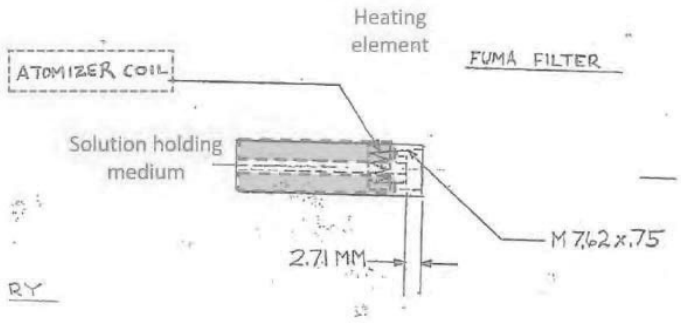
[redacted]

the liquid to the heating element for vaporization in an e-cigarette. *See* CX-1377C.0046 (02/29/2024 Conley) at 182:10-183:2, CX-2157C (Vallee Opening Report) ¶ 359.



JX-0507.0003 (annotated)

The cartridge shown in the Tolerance Drawings comprises a heating element and solution holding medium, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element given that a wicking material would be the expected, typical, and natural means to bring the liquid to the heating element for vaporization in an e-cigarette. *See* CX-1377C.0046 (02/29/2024 Conley) at 182:10-183:2, CX-2157C (Vallee Opening Report) ¶ 360.

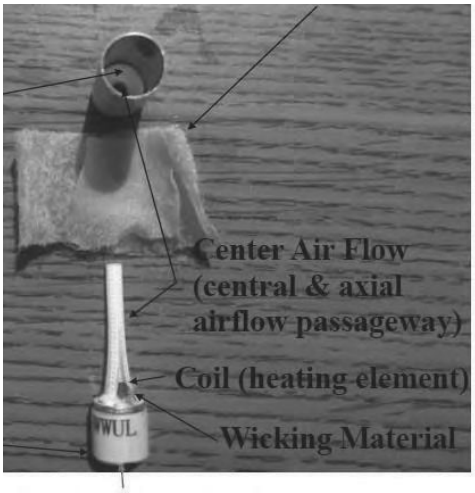


JX-0508C.0010 (annotated)

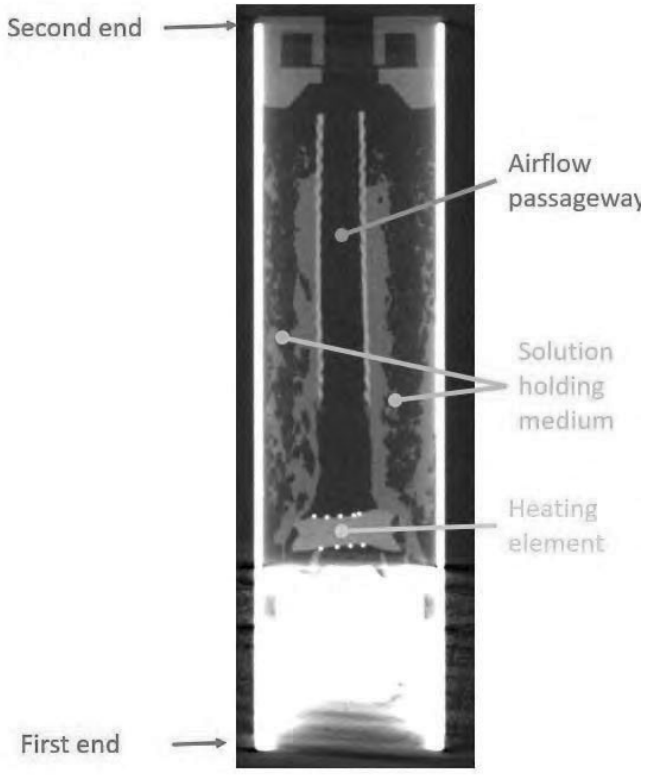
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[redacted]

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 26.



JX-0543 at Fig. 11; *see also id.* ¶ 5



CX-2758.0078 (annotated)

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[redacted]

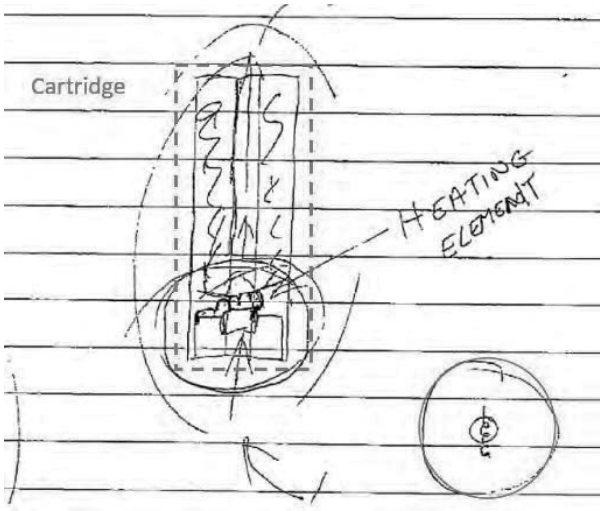
Respondent concedes that claim 26 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

7. 864 Patent, Claim 1

a) [1.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge configured to couple to a power source of an electronic vaporizer.

The cartridge shown in the Conception Sketch would be configured to couple to a power source of an electronic vaporizer given that the first end of the cartridge has an opening to receive a male end of a power source and the cartridge includes an resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 73.

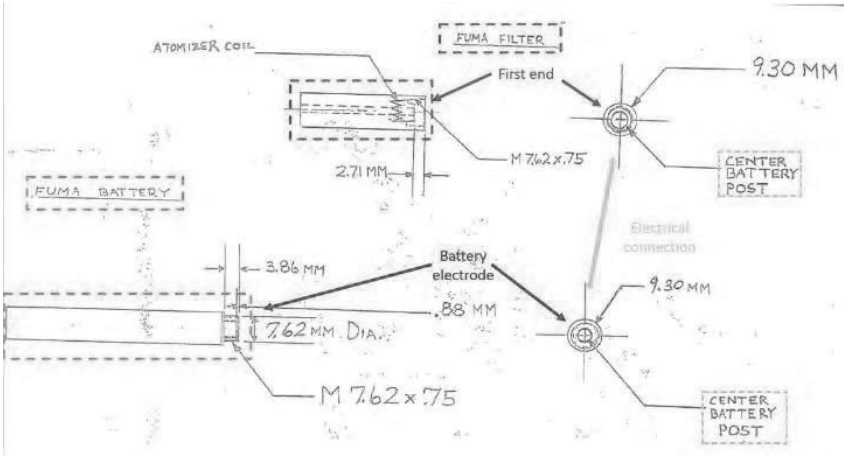


JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge configured to couple to a power source of an electronic vaporizer.

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[redacted]



JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge configured to couple to a power source of an electronic vaporizer.



JX-0543 at Fig. 2; *see also* JX-0545 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.1] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

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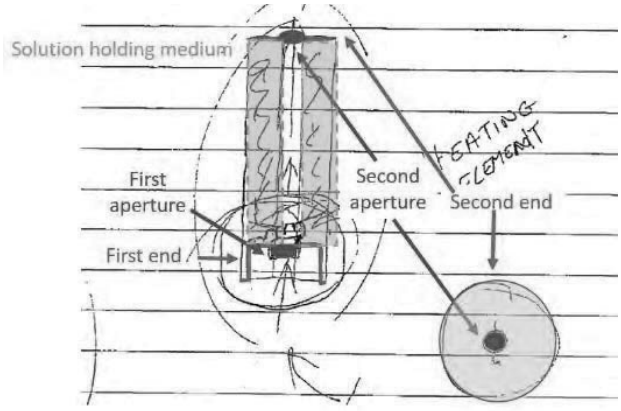
[redacted]

b) [1.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge comprising a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end.

The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50. The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The Conception Sketch depicts a cartridge that practices claim limitation [1.2] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.

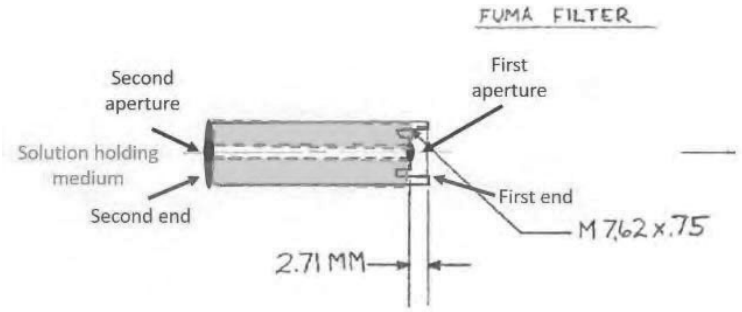


JX-0507.0003 (annotated)

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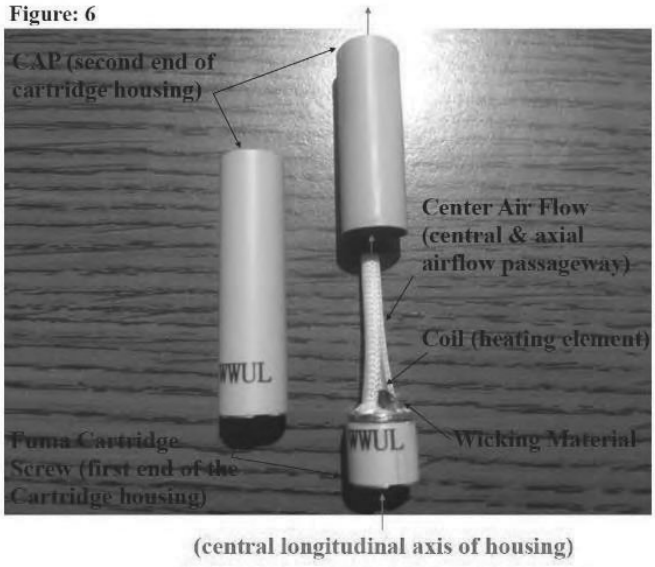
[redacted]

The Tolerance Drawings depict a cartridge that practices claim limitation [1.2] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.



JX-0508C.0007 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.2] wherein the housing corresponds the exterior structure of the depicted e-cigarette cartridge.

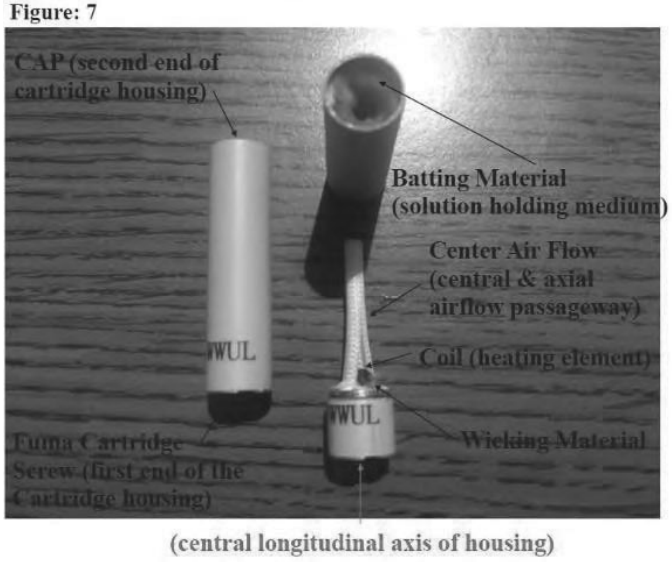


JX-0543 at Fig. 6; *see also* JX-0545 at Fig. 6

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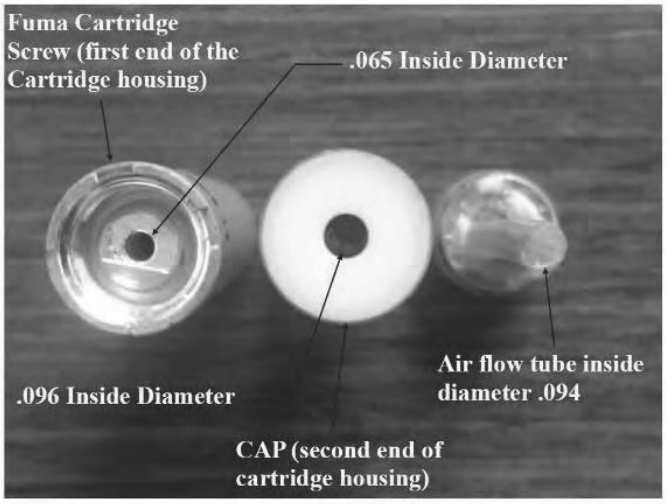
[redacted]

Figure: 7



JX-0543 at Fig. 7; *see also* JX-0545 at Fig. 7

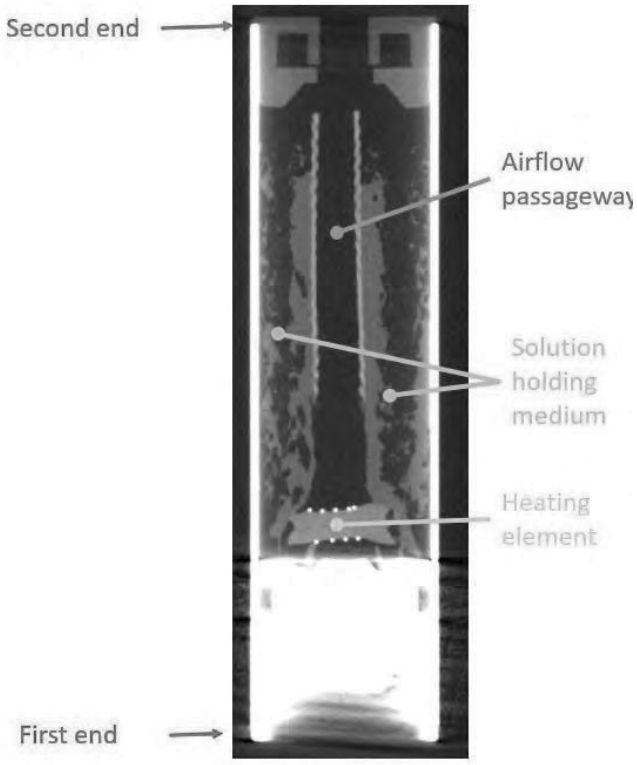
Figure: 15



JX-0543 at Fig. 15 (showing first aperture proximate the first end of the housing (left) and the second aperture proximate the second end of the housing (middle)); *see also* JX-0545 at Fig. 15; *see also id.* ¶ 5

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.2] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

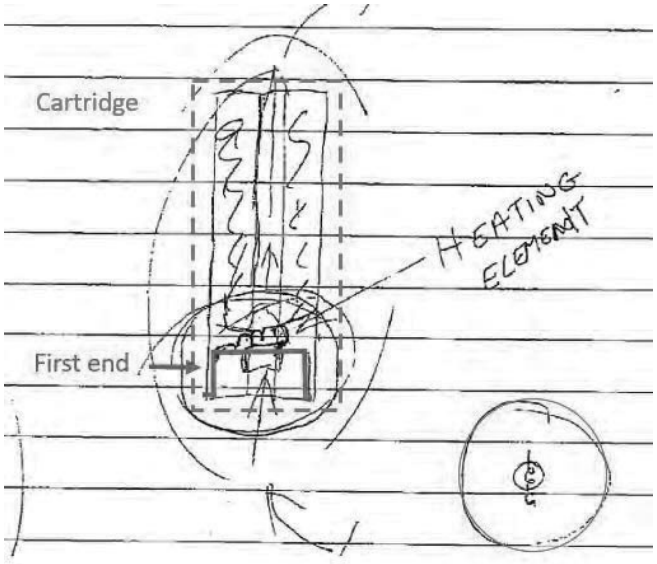
c) [1.3] the first end of the housing being adapted to electrically couple to the power source

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge which has the first end of the housing being adapted to electrically couple to the power source.

The cartridge shown in the Conception Sketch would comprise the first end of the housing being adapted to electrically couple to the power source given that the first end of the cartridge has an opening to receive a male end of a power source for an e-cigarette and the cartridge include a resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 83.

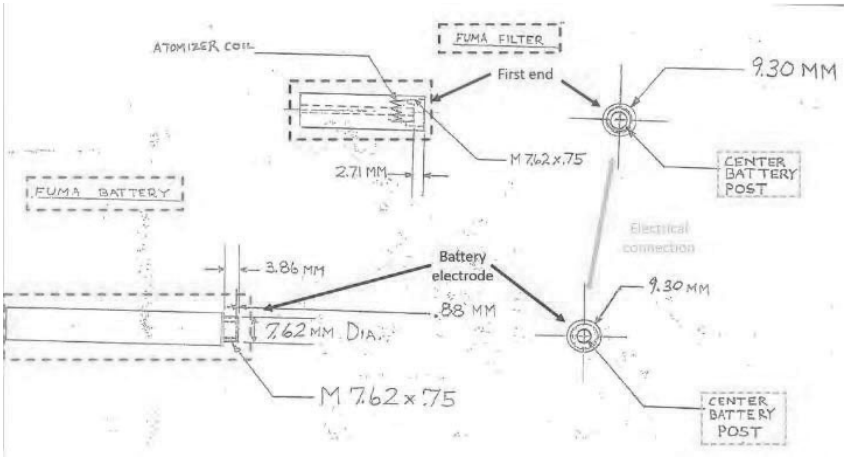
NJOY Exhibit 2007.281
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.3] as shown in the annotated figure below:

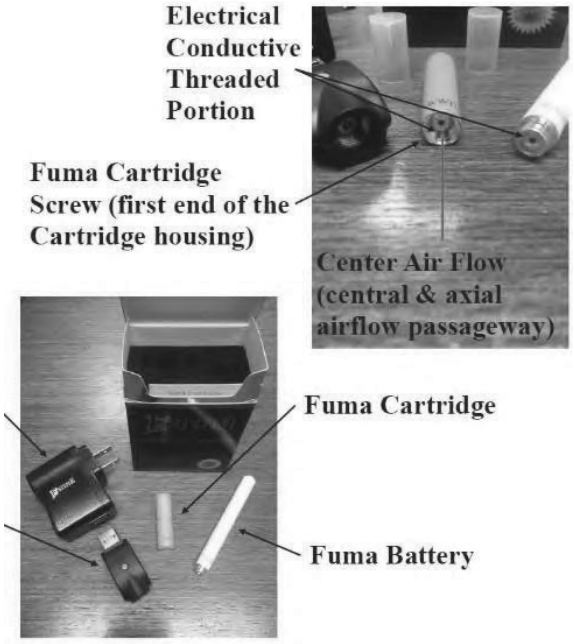


JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.3].

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[redacted]



JX-0543 at Fig. 2; *see also* JX-0545 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.3] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

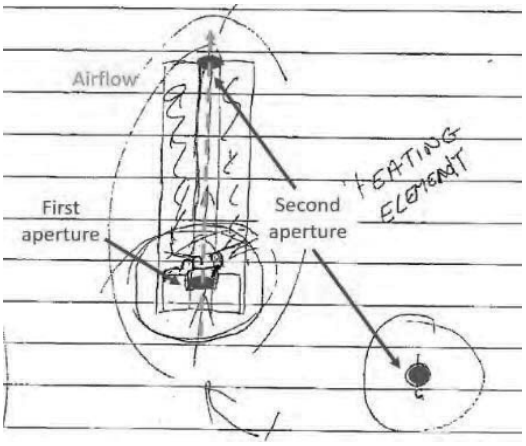
d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge which has the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture.

The Conception Sketch shows a cartridge that practices claim limitation [1.4] as shown in the annotated figure below:

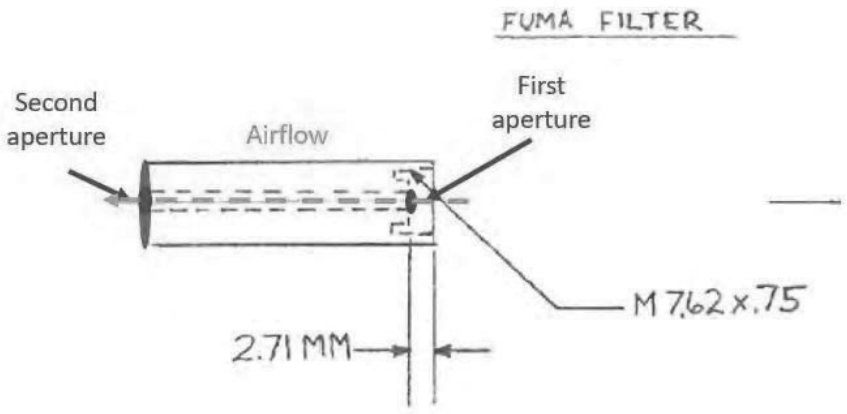
NJOY Exhibit 2007.283
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [1.4] as shown in the annotated figure below:



JX-0508C.0007 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.4].

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[redacted]

Figure: 4



JX-0543 at Fig. 4; *see also* JX-0545 at Fig. 4; *see also id.* ¶ 5

Respondent concedes that claim limitation [1.4] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow

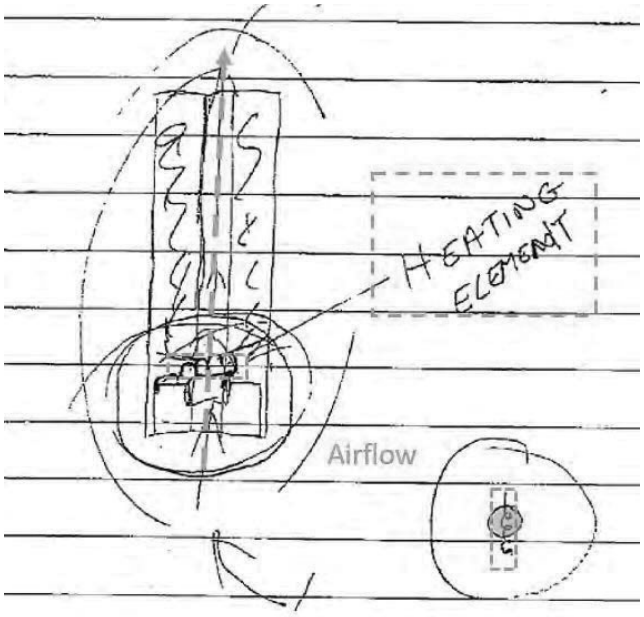
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge which has a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17.

The Conception Sketch depicts a cartridge that practices claim limitation [1.5] as shown in the annotated figure below:

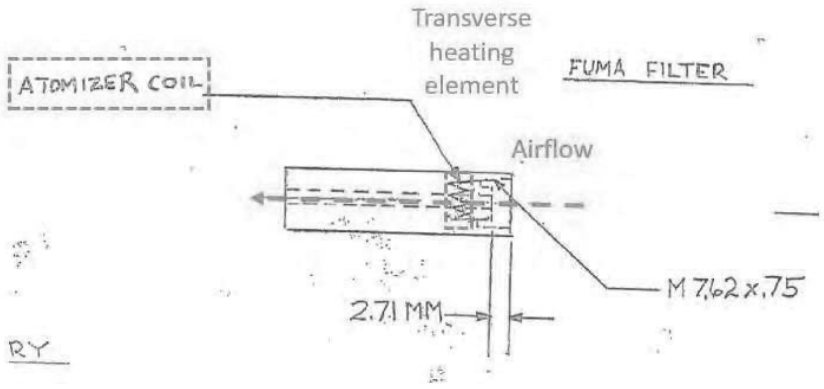
NJOY Exhibit 2007.285
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [1.5] as shown in the annotated figure below:



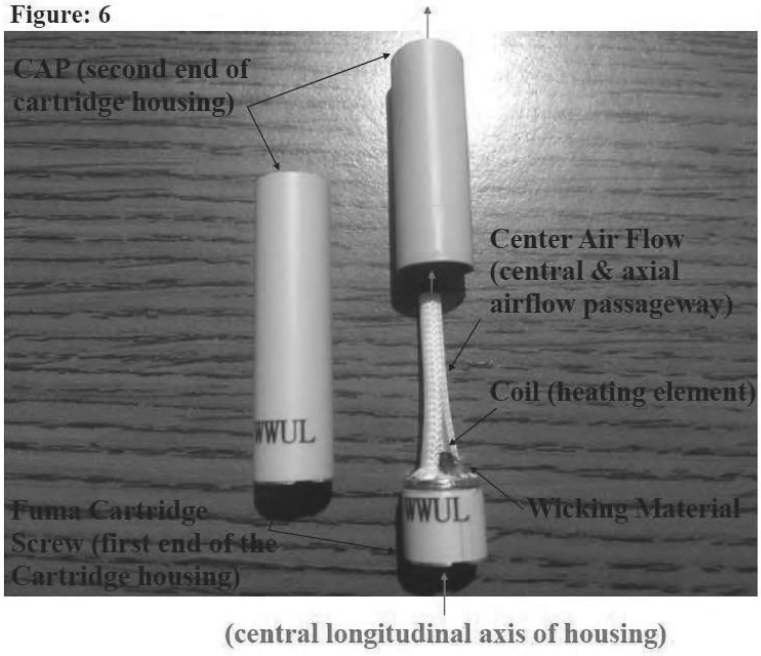
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.5].

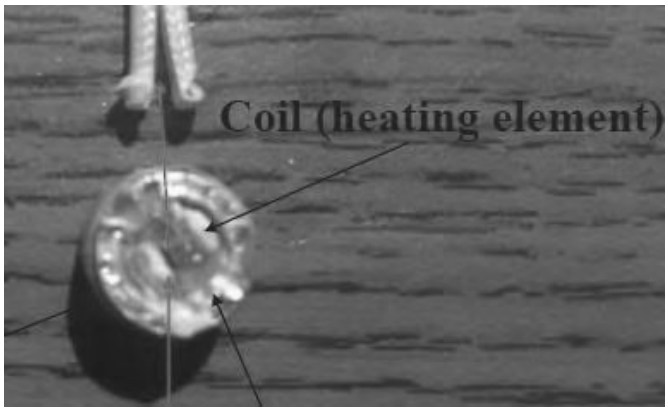
NJOY Exhibit 2007.286
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[redacted]

Figure: 6



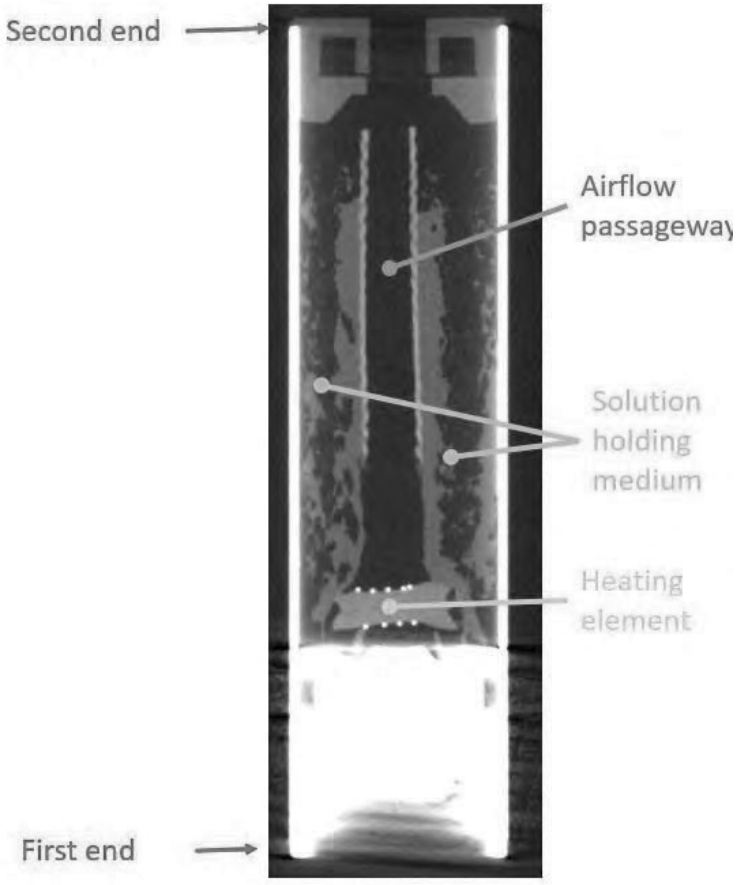
JX-0543 at Fig. 6; *see also* JX-0545 at Fig. 6



JX-0543 at Fig. 13; *see also* JX-0545 at Fig. 13; *see also id.* ¶ 5

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.5] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and

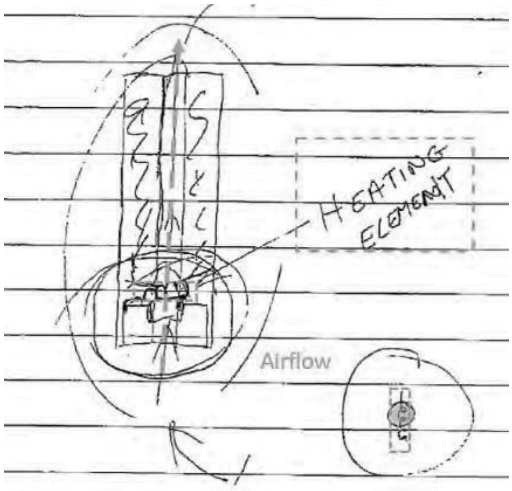
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source.

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[redacted]

The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The cartridge shown in the Conception Sketch would comprise a heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source given that the first end of the cartridge has an opening to receive a male end of a power source and the cartridge include a resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 98.

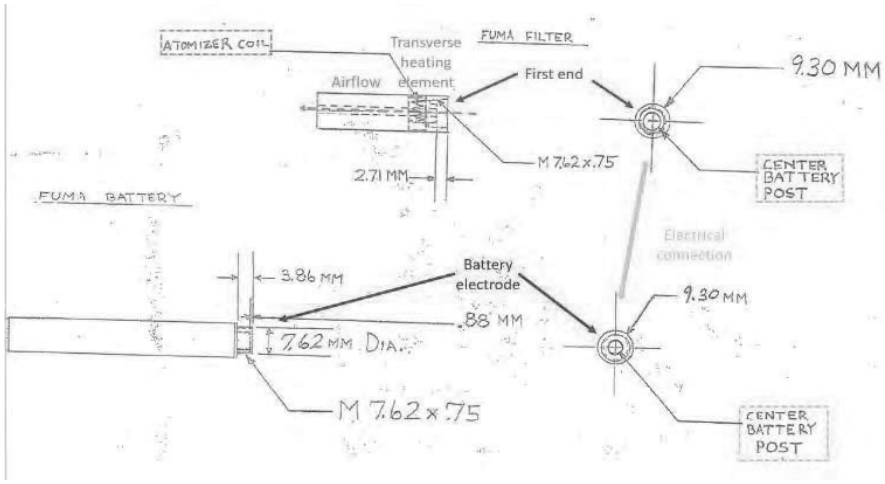


JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [1.6] as shown in the annotated figure below:

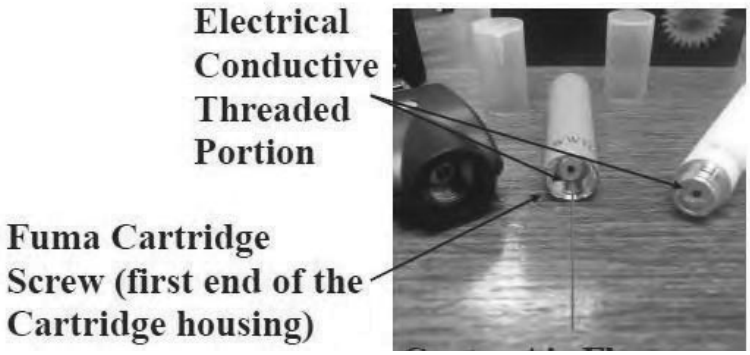
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[redacted]



JX-0508C.0010 (annotated)

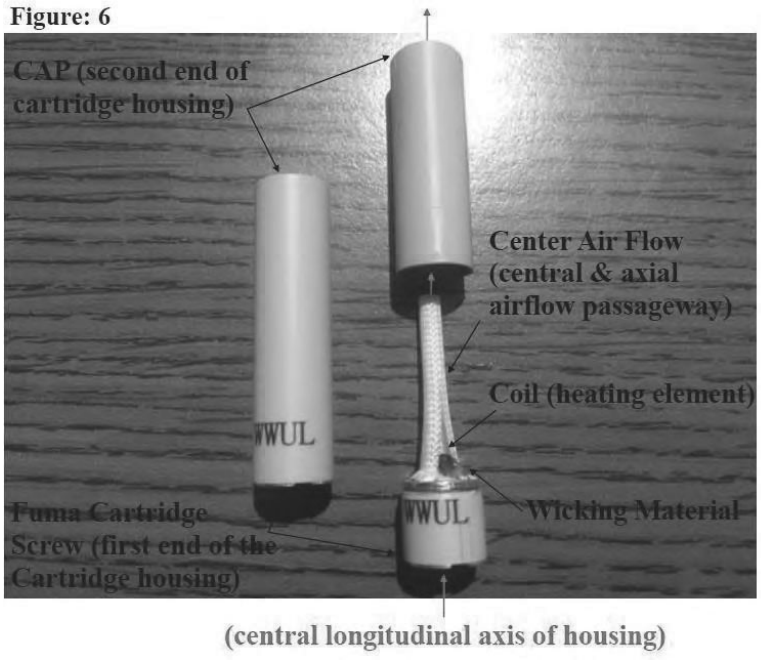
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.6].



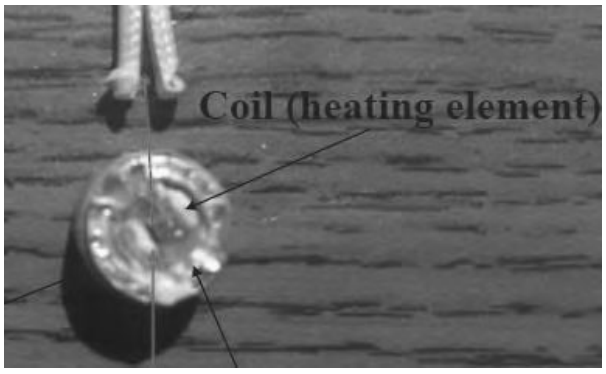
JX-0543 at Fig. 2; *see also* JX-0545 at Fig. 2

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[redacted]



JX-0543 at Fig. 6; JX-0545 at Fig. 6



JX-0543 at Fig. 13; *see also* JX-0545 at Fig. 13; *see also id.* ¶¶ 4, 5

Respondent concedes that claim limitation [1.6] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to

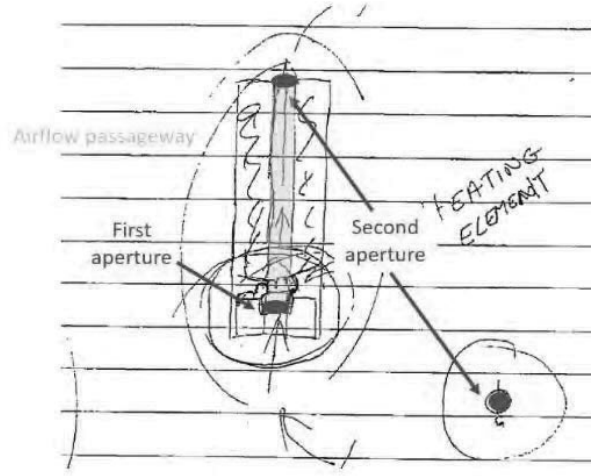
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[redacted]

the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture.

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture.

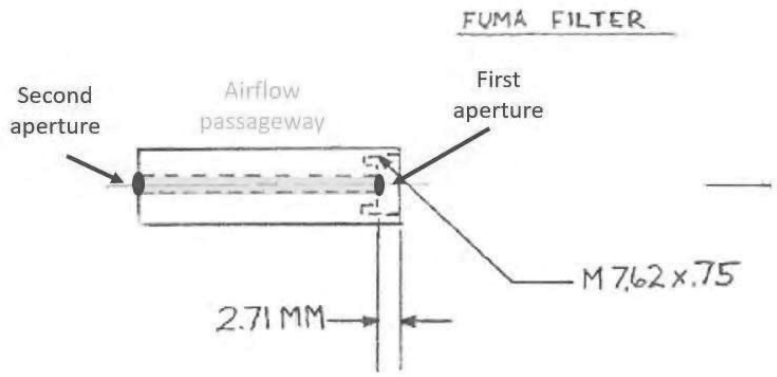
The Conception Sketch shows a cartridge that practices claim limitation [1.7] as shown in the annotated figure below:



JX-0507.0003 (annotated)

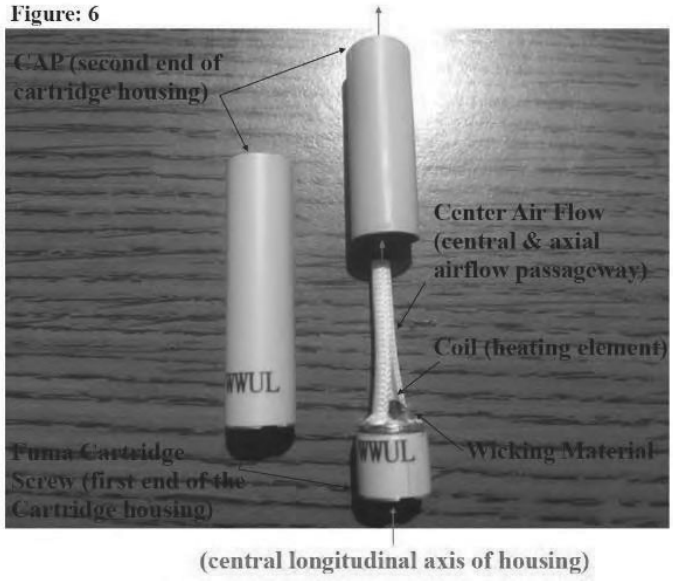
The Tolerance Drawings show a cartridge that practices claim limitation [1.7] as shown in the annotated figure below:

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JX-0508C.0007 (annotated)

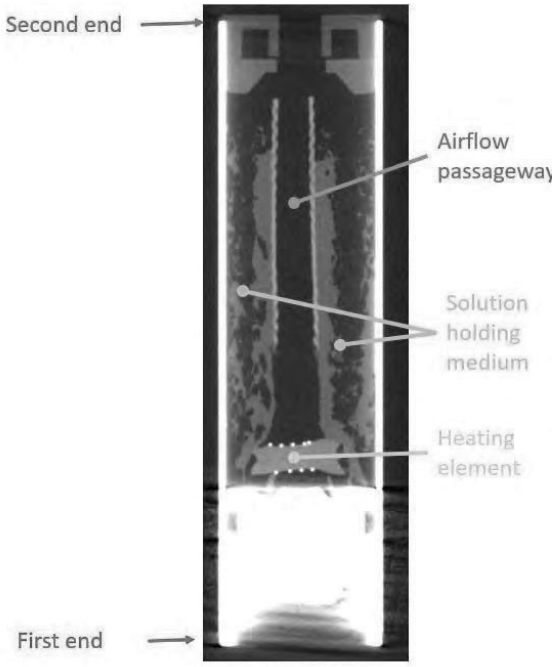
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [1.7].



JX-0543 at Fig. 6; *see also* JX-0545 at Fig. 6; *see also id.* ¶ 5

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [1.7] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

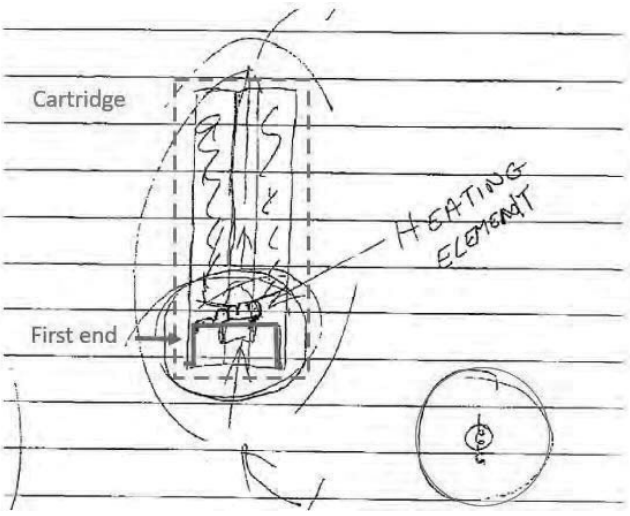
8. 864 Patent, Claim 2

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 1, further in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery."

The cartridge shown in the Conception Sketch would be in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery given that the first end of the cartridge has an opening to receive a male end of a power source and the cartridge includes a resistive heating coil. *See* CX-2157C (Vallee Opening Report) ¶ 106.

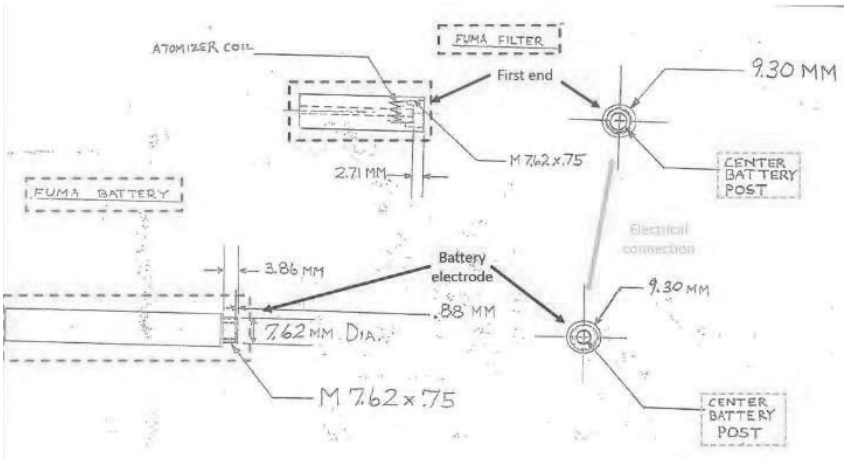
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[redacted]



JX-0507.0003 (annotated)

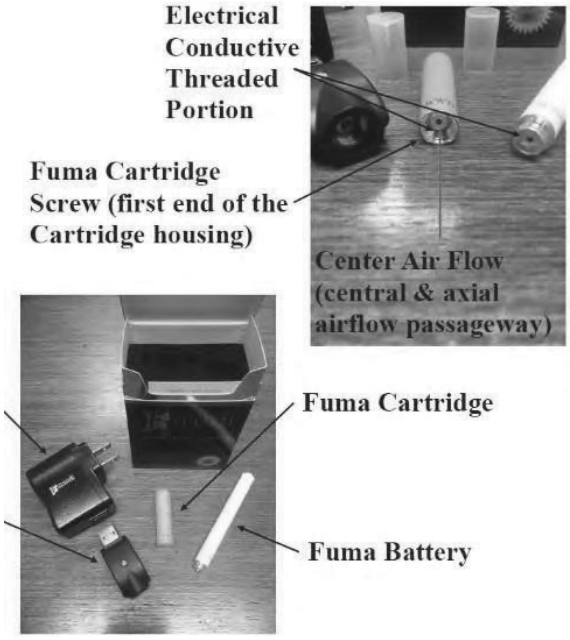
The Tolerance Drawings depict a cartridge that practices claim 2 as shown in the annotated figure below:



JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 2.

[redacted]



JX-0543 at Fig. 2; *see also* JX-0545 at Fig. 2; *see also id.* ¶ 5

Respondent concedes that claim 2 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

9. 864 Patent, Claim 9

a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.1] above.

b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.2] above.

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[redacted]

c) [9.3] the first end of the housing being adapted to electrically couple to the power source

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.3] above.

d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.4] above.

e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.5] above.

f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.6] above.

g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and

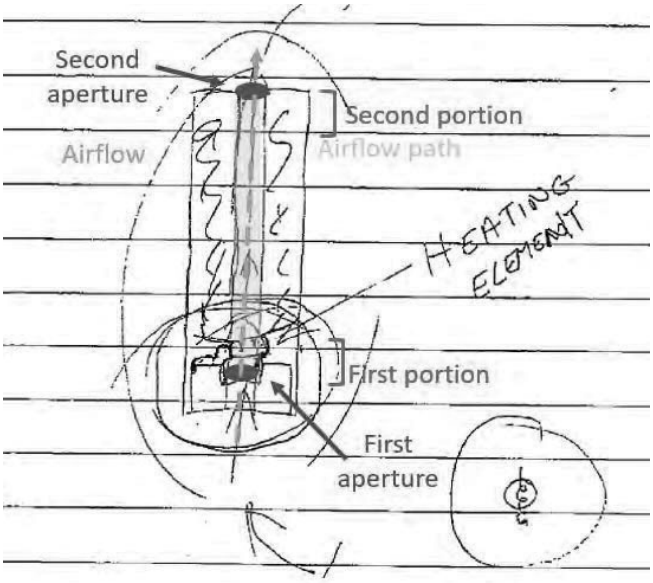
NJOY Exhibit 2007.297
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[redacted]

a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The Conception Sketch depicts a cartridge that practices claim limitation [9.7] as shown in the annotated figure below:

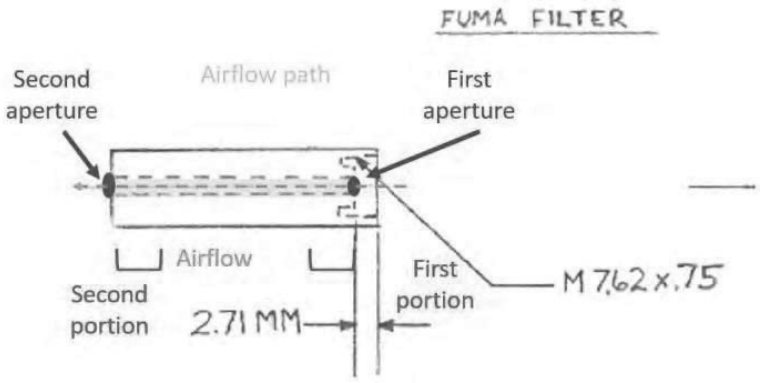


JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [9.7] as shown in the annotated figure below:

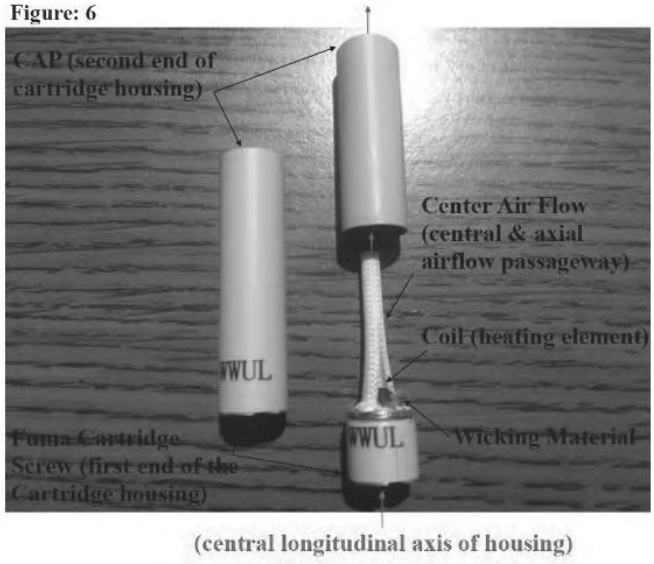
NJOY Exhibit 2007.298
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[redacted]



JX-0508C.0007 (annotated)

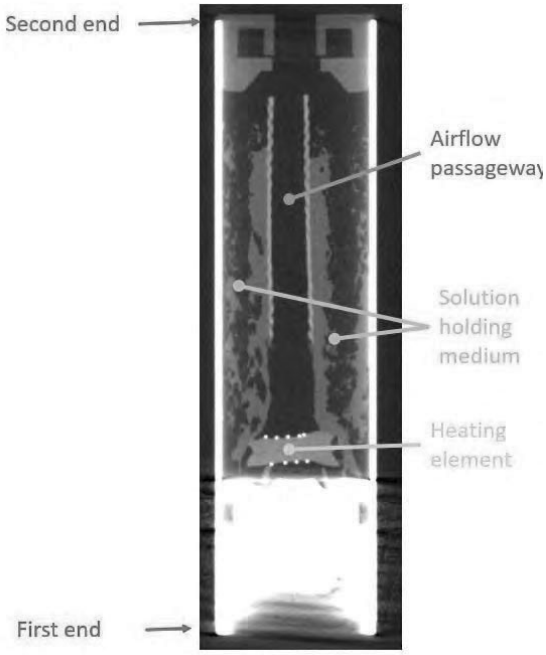
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [9.7].



JX-0543 at Fig. 6; *see also* JX-0545 at Fig. 6; *see also id.* ¶ 5

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [9.7] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

10. 864 Patent, Claim 10

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this claim. *See* Claim 2 above.

11. 864 Patent, Claim 12

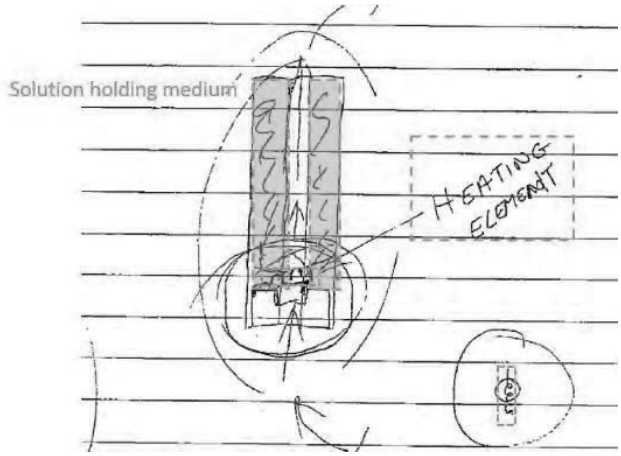
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 9, wherein the heating element includes a wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized."

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[redacted]

The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50.

The cartridge shown in the Conception Sketch comprises a heating element and solution holding medium, wherein the heating element would include a wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized given that a wicking material would be the expected, typical, and natural to bring the liquid to the heating element for vaporization in an e-cigarette. *See* CX-1377.0046 (02/29/2024 Conley) at 182:10-183:2; CX-2157C (Vallee Opening Report) ¶ 148.

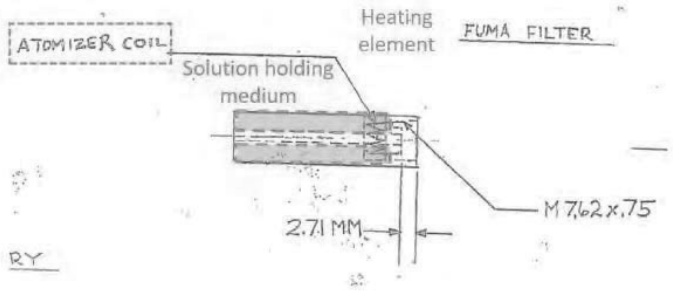


JX-0507.0003 (annotated)

The cartridge shown in the Tolerance Drawings comprises a heating element and solution holding medium, wherein the heating element would include a wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized given that a wicking material would be the expected, typical, and natural to bring the liquid to the heating element for vaporization in an e-cigarette. *See* CX-1377.0046 (02/29/2024 Conley) at 182:10-183:2; CX-2157C (Vallee Opening Report) ¶ 149.

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[redacted]



JX-0508C.0010 (annotated)

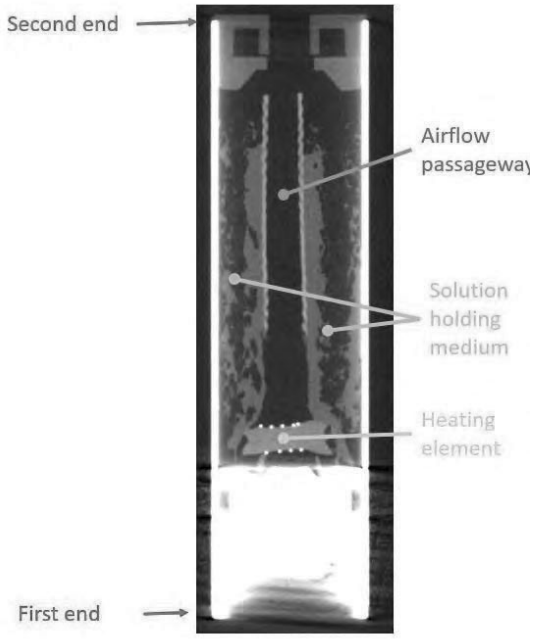
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 12.



JX-0543 at Fig. 11; *see also* JX-0545 at Fig. 11; *see also id.* ¶ 5

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim 12 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

12. 864 Patent, Claim 13

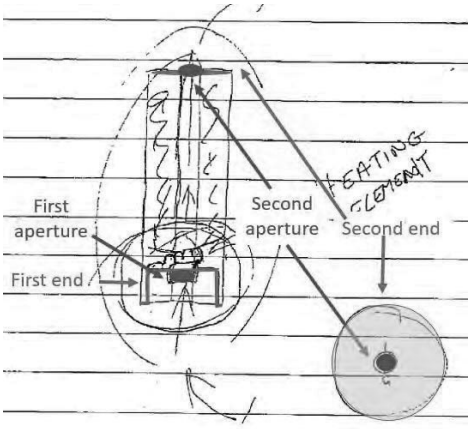
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 9, wherein the first aperture proximate the first end is smaller than the second aperture proximate the second end."

The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The Conception Sketch depicts a cartridge that practices claim 13 as shown in the annotated figure below:

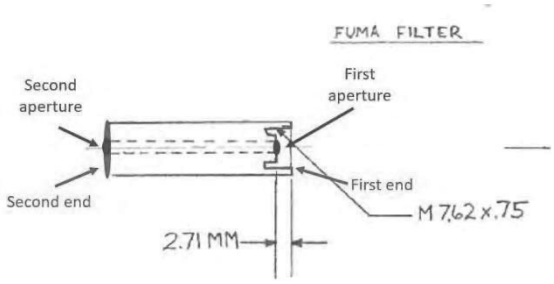
NJOY Exhibit 2007.303
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[redacted]



JX-0507.0003 (annotated)

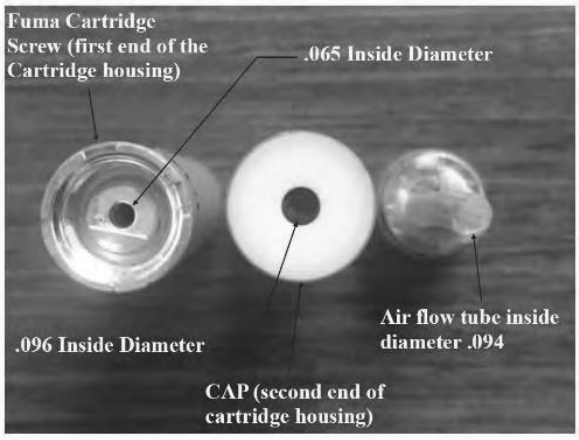
The Tolerance Drawings depict a cartridge that practices claim 13 as shown in the annotated figure below:



JX-0508C.0007 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 13.

Figure: 15



NJOY Exhibit 2007.304
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JX-0543 at Fig. 15; *see also* JX-0545 at Fig. 15; *see also id.* ¶ 5

Respondent concedes that claim 13 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

13. 864 Patent, Claim 15

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this claim. *See* Limitation [1.7] above.

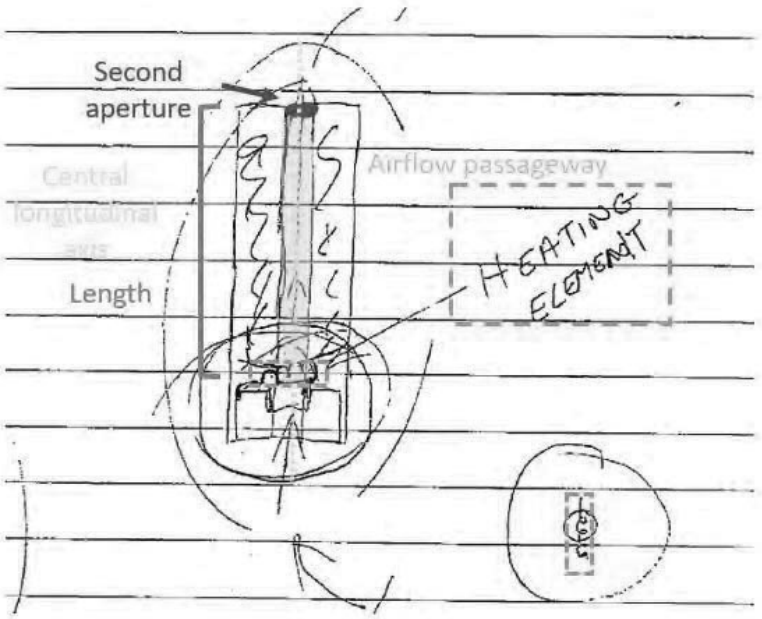
14. 864 Patent, Claim 16

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 15, wherein a majority of the portion of the airflow passageway has a substantially uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing between the heating element and the second aperture."

The Conception Sketch depicts a cartridge that practices claim 16 as shown in the annotated figure below:

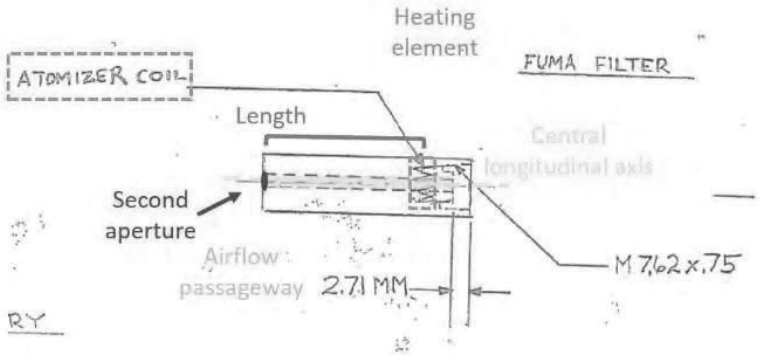
NJOY Exhibit 2007.305
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[redacted]



JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim 16 as shown in the annotated figure below:



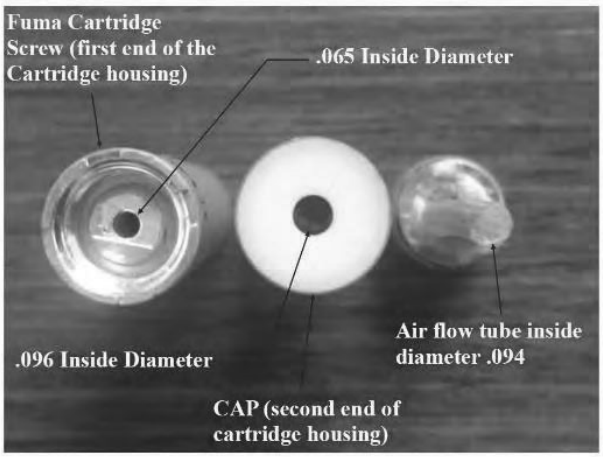
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 16.

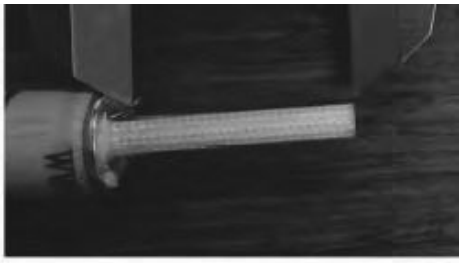
NJOY Exhibit 2007.306
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[redacted]

Figure: 15



JX-0543 at Fig. 15; *see also* JX-0545 at Fig. 15



JX-0543 at Fig. 16; *see also* JX-0545 at Fig. 16; *see also id.* ¶ 5

Respondent concedes that claim 16 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

15. 864 Patent, Claim 20

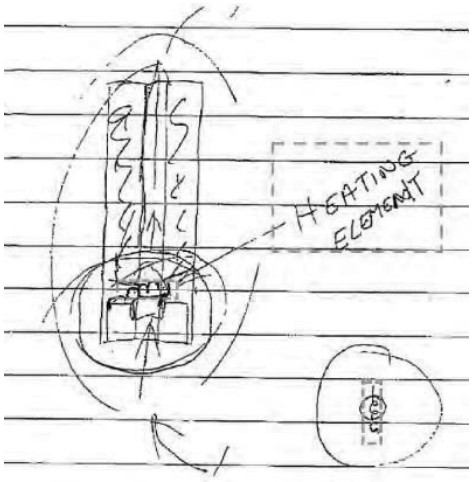
As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 "[t]he cartridge of claim 9, wherein the heating element includes a material that when powered by the power source is adapted to vaporize the solution brought into contact with the heating element."

The cartridge shown in the Conception Sketch comprises a heating element wherein the heating element includes a material that when powered by the power source is adapted to vaporize the solution brought into contact with the heating element given that the first end of the cartridge

NJOY Exhibit 2007.307
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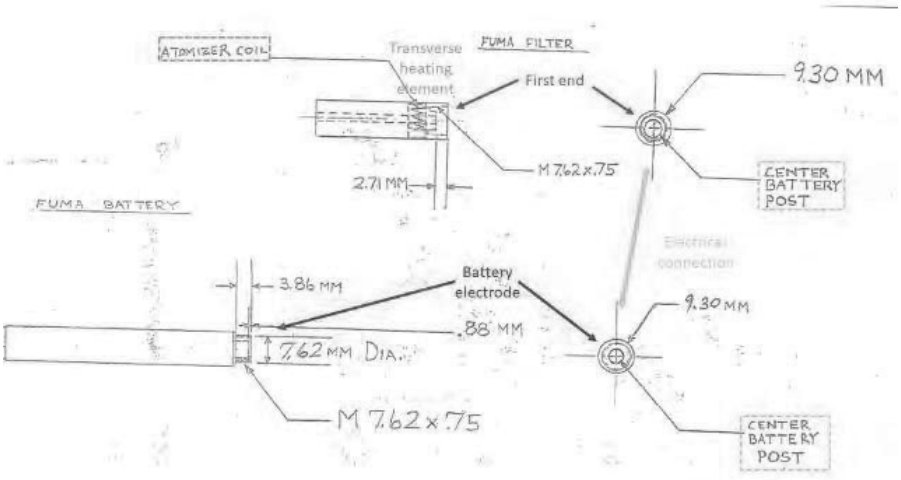
[redacted]

has an opening to receive a male end of a power source. *See* CX-2157C (Vallee Opening Report) ¶ 172.



JX-0507.0003 (annotated)

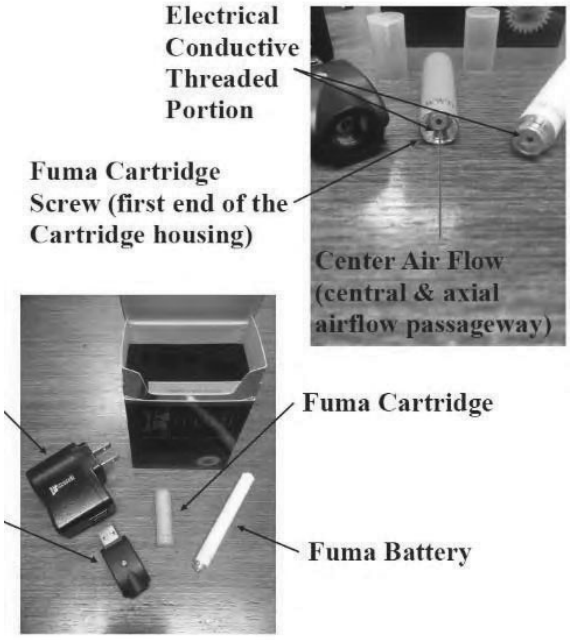
The Tolerance Drawings depict a cartridge that practices claim 20 as shown in the annotated figure below:



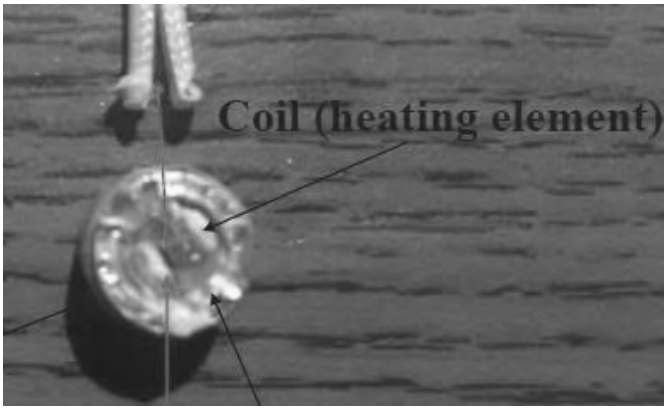
JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim 20.

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JX-0543 at Fig. 2; *see also* JX-0545 at Fig. 2



JX-0543 at Fig. 13; *see also* JX-0545 at Fig. 13; *see also id.* ¶¶ 4, 5

Respondent concedes that claim 20 is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

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[redacted]

16. 864 Patent, Claim 25

a) [25.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.1] above.

b) [25.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, te housing having a first aperture proximate the first end and a second aperture proximate the second end

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitations [1.2, 1.5] above.

c) [25.3] the first end of the housing being adapted to electrically couple to the power source

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.3] above.

d) [25.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this limitation. *See* Limitation [1.4] above.

e) [25.5] a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central

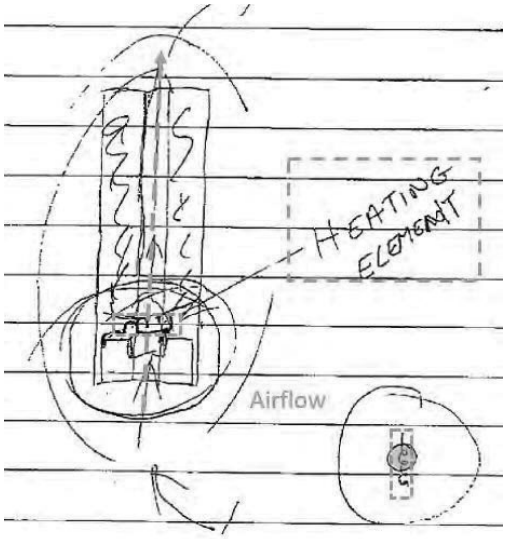
NJOY Exhibit 2007.310
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[redacted]

longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

The Conception Sketch depicts a cartridge that practices limitation [25.5] wherein the heating element extends transversely across the airflow path such that the air would flow on both transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 194.

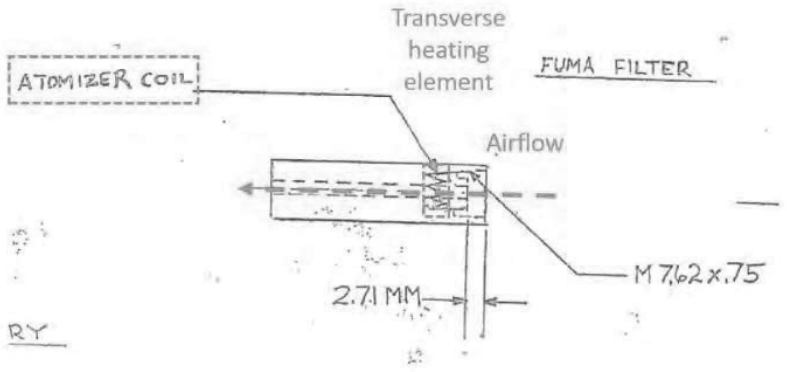


JX-0507.0003 (annotated)

The Tolerance Drawings show a cartridge that practices claim limitation [25.5] wherein the heating element extends transversely across the airflow path such that the air would flow on both transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 194.

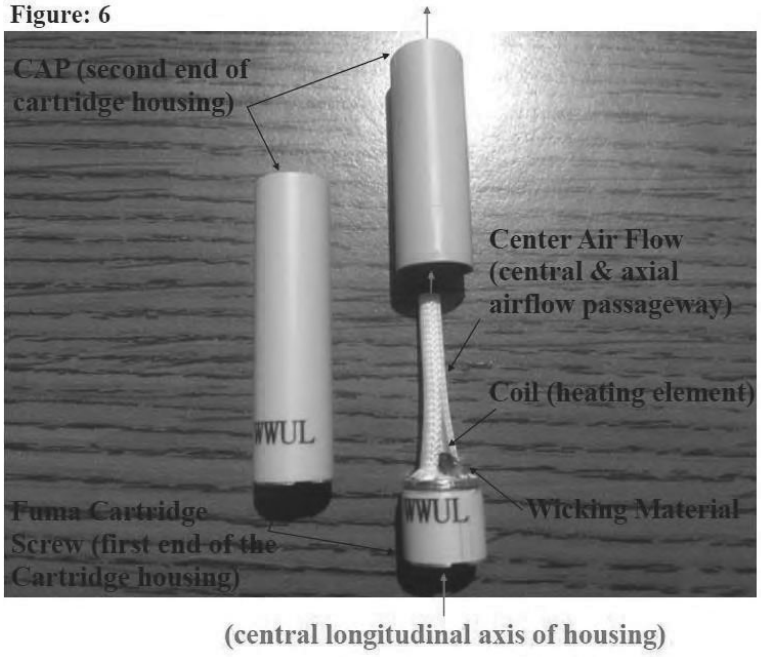
NJOY Exhibit 2007.311
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[redacted]



JX-0508C.0010 (annotated)

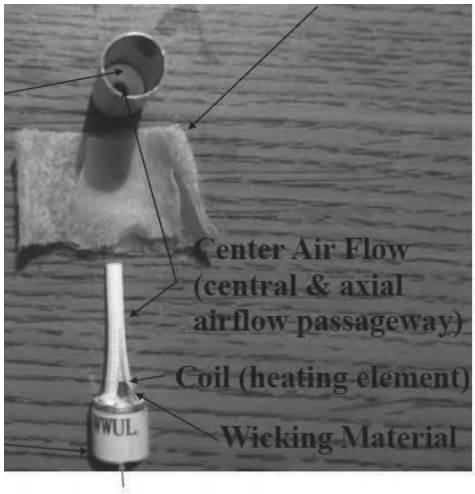
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [25.5] wherein the heating element extends transversely across the airflow path such that the air would flow on both transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 194.



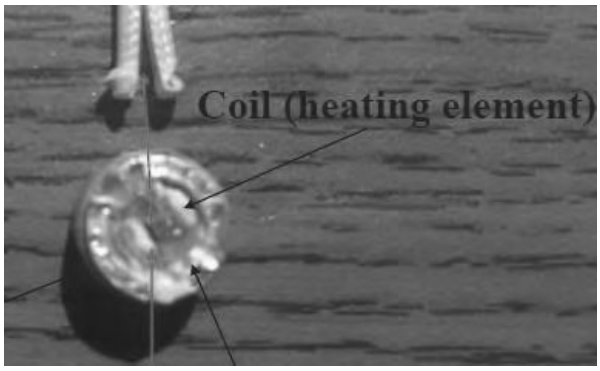
JX-0543 at Fig. 6; *see also* JX-0545 at Fig. 6

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[redacted]



JX-0543 at Fig. 11; *see also* JX-0545 at Fig. 11

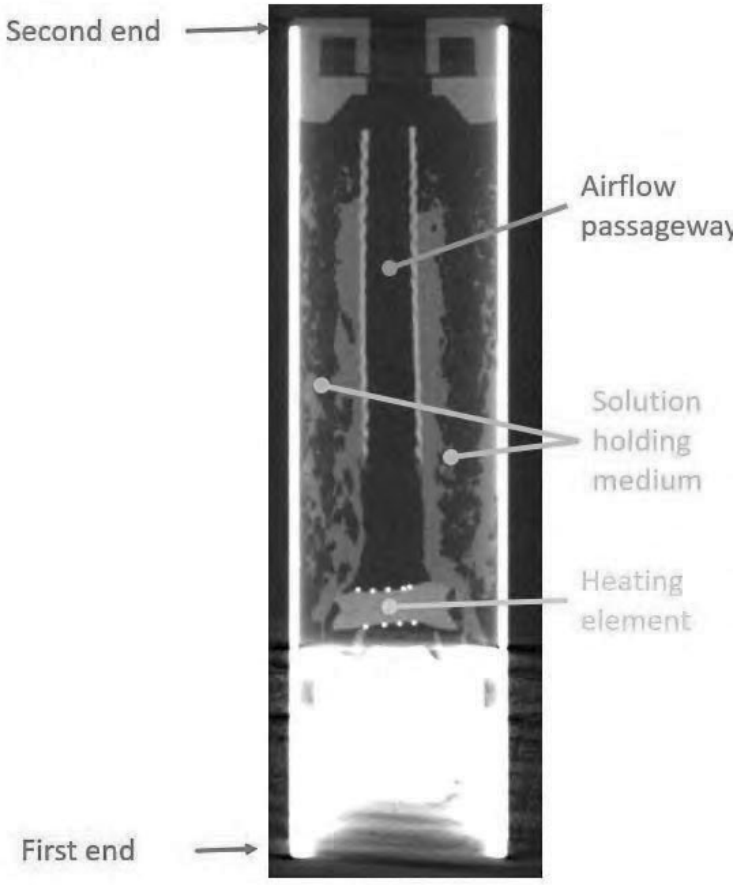


JX-0543 at Fig. 13; *see also* JX-0545 at Fig. 13; *see also id.* ¶ 5

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [25.5].

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[redacted]



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [25.5] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

f) [25.6] the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to

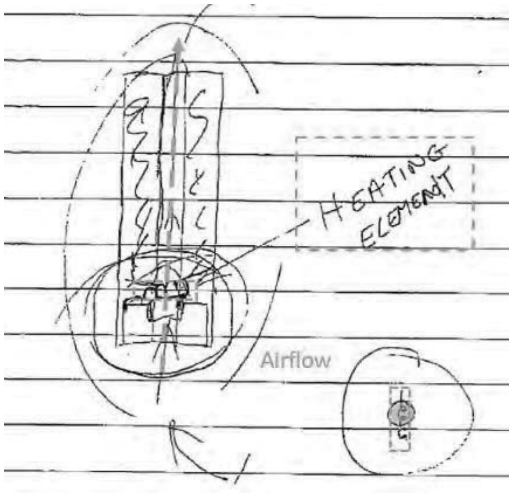
NJOY Exhibit 2007.314
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[redacted]

an individual in the airflow, the heating element being responsive to electrical power received from the power source.

The term "the portion of the solution" has been construed "as having its plain and ordinary meaning, that is, the words of the claims." CC Order at 21-25. The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The cartridge shown in the Conception Sketch would comprise the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source given that the first end of the cartridge has an opening to receive a male end of a power source. *See* CX-2157C (Vallee Opening Report) ¶ 195.

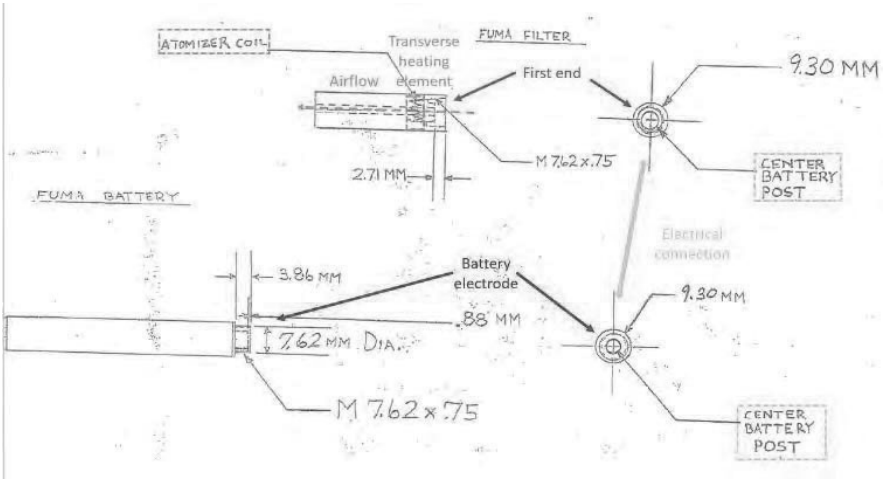


JX-0507.0003 (annotated)

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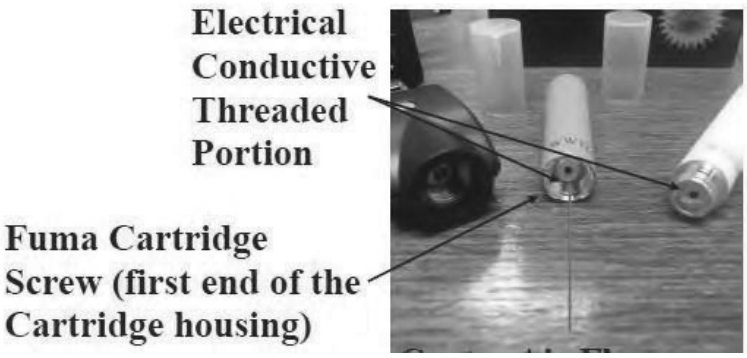
[redacted]

The Tolerance Drawings depict a cartridge that practices claim limitation [25.6] as shown in the annotated figure below:



JX-0508C.0010 (annotated)

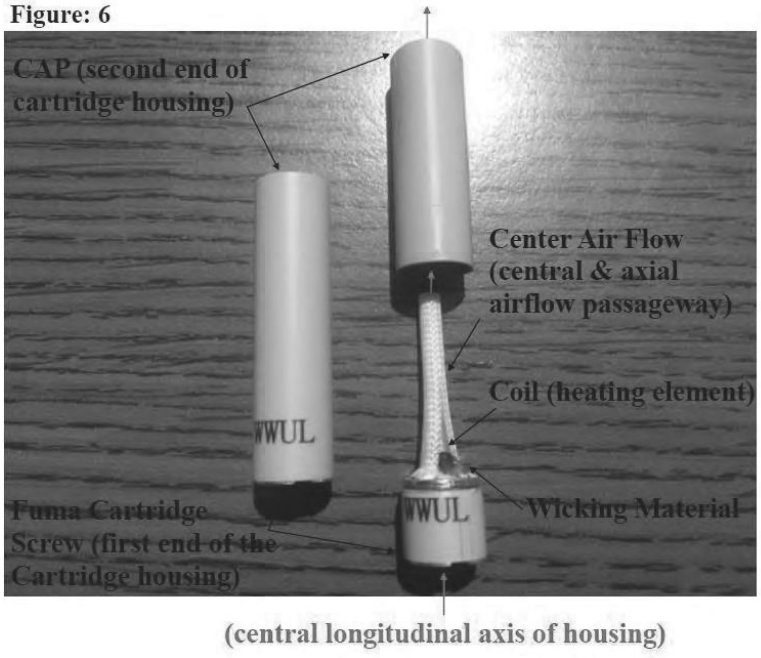
The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [25.6].



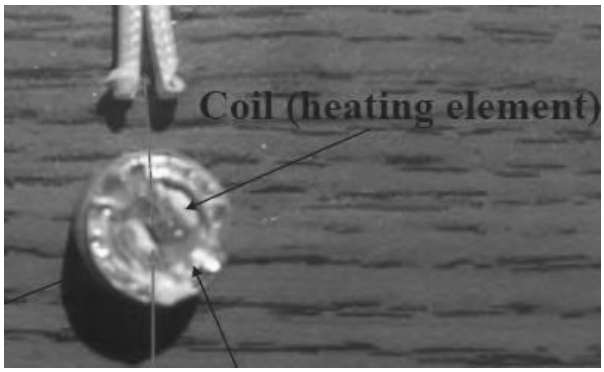
JX-0543 at Fig. 2; *see also* JX-0545 at Fig. 2

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[redacted]



JX-0543 at Fig. 6; JX-0545 at Fig. 6



JX-0543 at Fig. 13; *see also* JX-0545 at Fig. 13; *see also id.* ¶¶ 4, 5

Respondent concedes that claim limitation [25.6] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

g) [25.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the

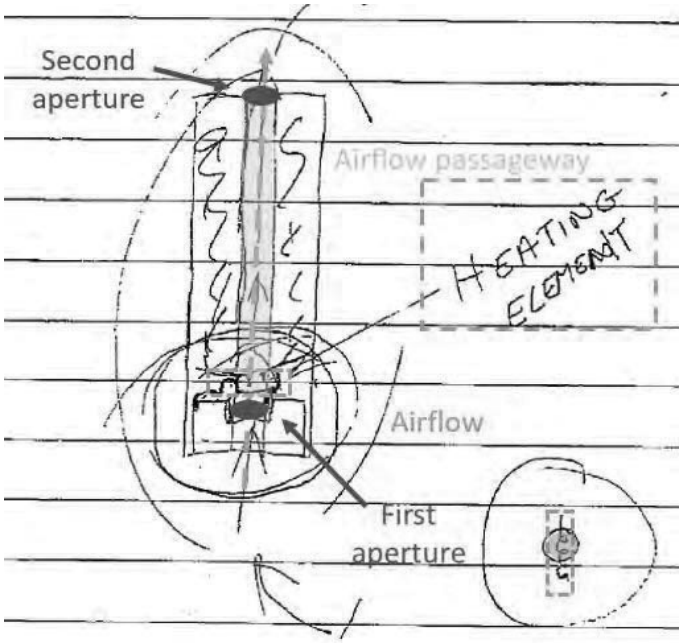
NJOY Exhibit 2007.317
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[redacted]

airflow passageway along the central longitudinal axis of the housing.

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge having an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing.

The Conception Sketch depicts a cartridge that practices claim limitation [25.7] as shown in the annotated figure below:

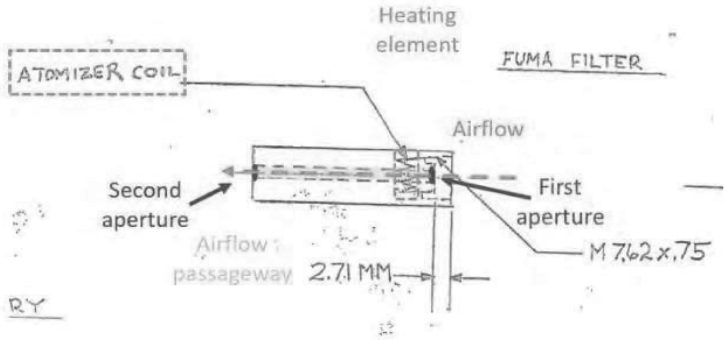


JX-0507.0003 (annotated)

The Tolerance Drawings depict a cartridge that practices claim limitation [25.7] as shown in the annotated figure below:

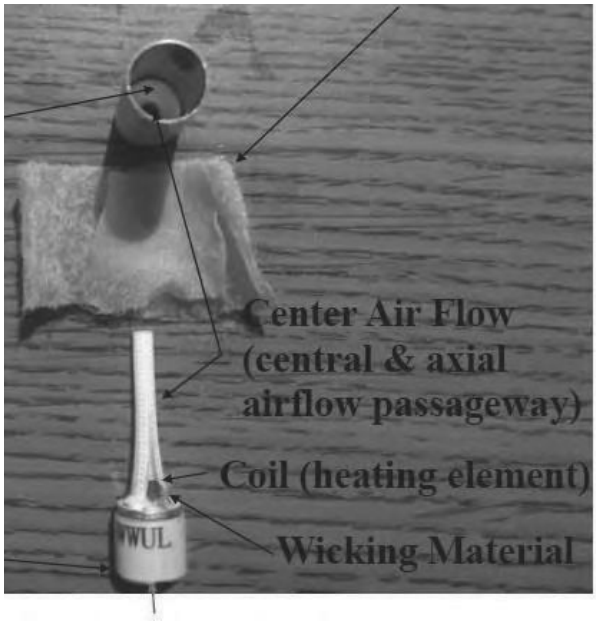
NJOY Exhibit 2007.318
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[redacted]

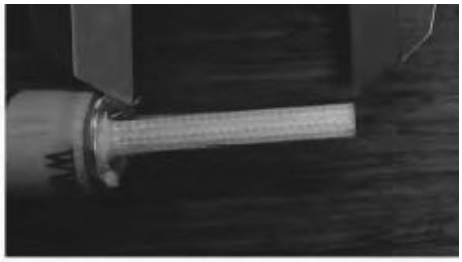


JX-0508C.0010 (annotated)

The first commercial run Fuma E-Cigarette comprises a cartridge that practices claim limitation [25.7].



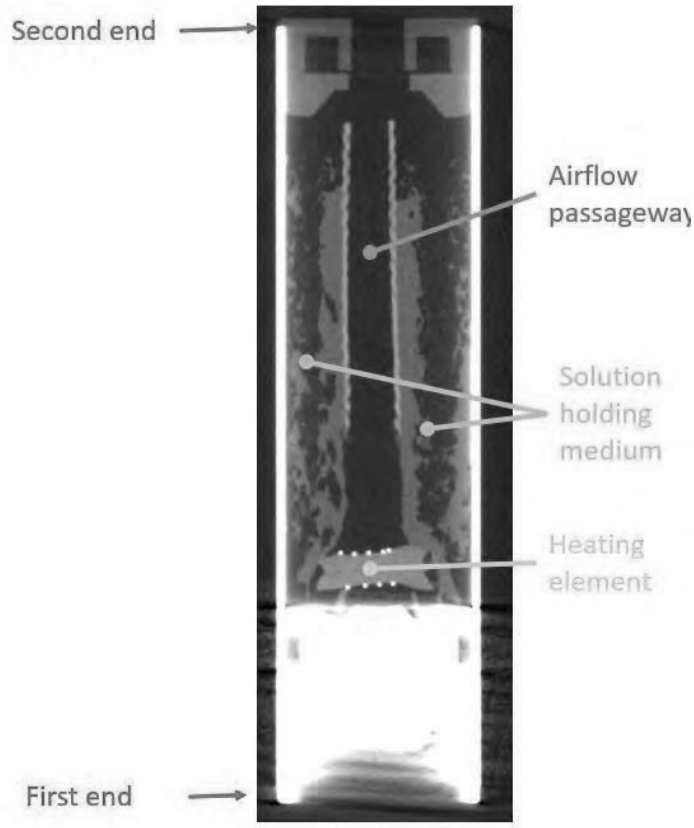
JX-0543 at Fig. 11; *see also* JX-0545 at Fig. 11



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[redacted]

JX-0543 at Fig. 16; *see also* JX-0545 at Fig. 16; *see also id.* ¶ 5



CX-2758.0078 (annotated)

Respondent concedes that claim limitation [25.7] is disclosed by the Fuma Prototype. CX-2151C (Leinsing Opening Report, Appx H) ¶ 2.

17. 864 Patent, Claim 26

As will be demonstrated at the hearing, the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 this claim. *See* Claim 2 above.

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[redacted]

18. Respondent's Contentions Will Not Demonstrate That the Claims at Issue Were Not Conceived by July 28, 2009 and Reduced to Practice by August 12, 2009

As set forth herein, and as will be demonstrated at the hearing, Respondent will be unable to show that the asserted claims of the Asserted Patents were not conceived by July 28, 2009 and reduced to practice by August 12, 2009.

Respondent's contentions regarding Mr. Conley's testimony relating to conception, reduction to practice, and priority are vague, unsupported, and contradicted by his testimony, as well as other evidence of record. CX-2951.0157. Mr. Conley was able to confirm that he did improve upon the prior art to develop a novel e-cigarette, including a novel arrangement of components that resulted in an improved device. Mr. Conley also testified that his invention, which is described in the patent, addressed shortcomings over the prior art to achieve a "balanced system" with bigger airflow and more vapor that provided a better vaping experience. *See* CX-1377C.0028 (02/29/2024 Conley) at 109:6-21, 110:14-111:2, 117:5-20, 119:15-25; CX-1378C (03/01/2024 Conley) at 317:16-22, 321:11-19. Mr. Conley also described numerous activities that support the inventors' possession of the claimed invention prior to the filing date of the asserted patents. For example, Mr. Conley testified about the development of the patented design and Fuma E-Cigarette, obtaining the Fuma prototype devices in August 2009, and beginning to sell the Fuma E-Cigarette after obtaining the prototype devices in 2009. *See, e.g.*, CX-1377C (02/29/2024 Conley) at 39:17-40:19, 41:14-43:12, 44:15-45:22, 68:7-21, 125:22-127:20, 131:3-132:20, 144:17-22, 145:5-146:8, 157:9-159:19, 204:5-9, 231:18-232:7, 235:25-236:3; CX-1378C (03/01/2024 Conley) at 271:19-272:19, 273:8-275:12, 275:21-276:25, 308:1-11, 421:3-422:4. Further, evidence of the inventors' possession of the claimed invention is corroborated by the Conception Sketch, the Tolerance Drawings, and the first commercial run of the Fuma E-Cigarette, as set forth above. Moreover, the

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[redacted]

asserted claims of the asserted patents are entitled to a priority date of July 27, 2010, as described below. *See* Sections IV.D.

Respondent contends that "Mr. Conley's declaration is also, necessarily, silent as to the claims of the '864 Patent, and does not provide support for any of NJOY's contentions that the invention of the '864 Patent was conceived or reduced to practice in 2009." CX-2951.0158. Mr. Conley, however, submitted 131 Declarations to the PTO in relation to both of the asserted patents. JX-0543; JX-0545. Respondent's contentions regarding Mr. Conley's testimony relating to the 131 Declarations are vague, unsupported, and contradicted by his testimony. CX-2951.0158-.0159. Mr. Conley testified that he reviewed the 131 Declarations, believed the 131 Declarations were true and accurate when he signed them, and continues to believe the 131 Declarations are true and accurate. *See, e.g.*, CX-1377C (02/29/2024 Conley) at 231:18-233:5 ("Q. Did you believe it was true and accurate when you signed it and submitted it to the Patent Office that declaration in the '881 application? A. I do. Q. So you still think it's accurate that declaration you submitted? A. I do"); CX-1378C (03/01/2024 Conley) at 421:7-422:4 ("Q. All right. And do you recall testifying that for this declaration [for the '881 Patent], you reviewed and believed the statements were accurate before it was submitted to the Patent Office? A. Yes, I do. Q. And do you recall testifying that your understanding of its accuracy was based in part on conversations with your attorney? …A. Yes, I do. Q. And is that also true for the other affidavit that was submitted to the Patent Office [for the '864 Patent] which has been marked as Exhibit 12? … A. Yes, I do."). The 131 Declarations corroborate the inventors' conception and reduction to practice of the claimed invention.

Respondent also points to testimony from William Steiger as being inconsistent with the evidence of the inventors' conception and reduction to practice. CX-2951.0159-.0160. Mr.

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[redacted]

Steiger's recollections are neither reliable nor credible. Mr. Steiger did not join Fuma until 2010. RX-1135C (03/05/2024 Steiger) at 14:1-2, 141:17-19. Mr. Steiger therefore was not involved with the conception or reduction to practice of the patented inventions in 2009. Accordingly, it is not surprising that Mr. Steiger's attempt to recollect information and events is inconsistent with multiple pieces of corroborating evidence. For example, Respondent points to Mr. Steiger's belief that Fuma "never had a prototype device" and "Jasmin Guo was simply asked to change the exterior of the Smoke Fifty-One Duo device for Fuma." CX-2951.0160. Mr. Steiger, however, joined Fuma in 2010 and was not involved with the conception of the patented inventions in July 2009 and the reduction to practice of the Fuma E-Cigarette, including Fuma ordering its prototype device from its Chinese suppler in August 2009 and the first commercial run of the Fuma E-Cigarette in September 2009. *See, e.g.*, CX-1377C (02/29/2024 Conley) at 39:17-42:21, 67:3-68:21, 69:10-14; CX-2117C (02/13/2024 Hillenbrandt) at 280:2-9; JX-0548 (12/04/2019 Conley) at 23:23-24:1, 285:23-286:2; JX-0549 (12/05/2019 Hillenbrandt) at 103:22-23, 143:16-20; JX-0507; JX-0502; CX-2163; CX-2160; CX-2179; CX-2164; JX-0504; JX-0508C.0004-0010; CX-2161C; CX-2168; CX-2178. Additionally, Mr. Steiger testified that he never interacted with Jasmine Guo, other than one email. RX-1135C (03/05/2024 Steiger) at 83:11-19.

With respect to Mr. Conley's testimony regarding the Smoke51 Duo device, that product does not disclose the novel combination of claim limitations in the asserted patents, including a transverse heating element in an airflow path surrounded by a solution holding medium. Mr. Conley testified that he disclosed his knowledge about existing devices and provided samples of devices to Fuma's patent attorneys. CX-1378C.0033 (03/01/3024 Conley) at 375:18-377:10, 385:17-23, 387:16-388:2, 417:5-13; JX-0548 (12/04/2019 Conley) at 22:14-25:25, 38:1-23,

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62:13-16, 111:22-112:15, 113:16-20, 114:10-115:9, 116:1-24, 137:25-138:20, 174:24-175:6, 182:2-8, 193:10-17, 194:5-14. Mr. Conley also testified that the Smoke 51 Duo device he was aware of had the same internal structure as all of the other two-piece e-cigarettes that he had investigated at that point in time. CX-1378C (03/01/3024 Conley) at 375:18-377:10, 385:17-23; JX-0548 (12/04/2019 Conley) at 25:11-20, 27:7-19, 30:15-25, 31:1-32:6, 39:10-40:14, 43:15-20, 48:20-49:25, 50:19-51:9, 71:3-72:13, 76:21-78:13, 112:9-15, 268:10-22). Moreover, Mr. Conley testified that he disclosed "everything we knew to our patent [] prosecution attorney," which included the Smoke 51 Duo device or an e-cigarette with the same structure as the Smoke 51 Duo device. *See* CX-1378C (03/01/2024 Conley) at 375:18-377:10, 387:16-388:2, 417:5-13.

Respondent contends that Mr. Hillenbrandt testified that Fuma's products sold in September 2009 were manufactured *based on* designs "prior to Mr. Hillenbrandt's proffered conception date of the idea underlying the asserted patents." CX-2951.0161. Mr. Hillenbrandt, however, never testified that he or Mr. Conley conceived of the complete invention prior to July 28, 2009.

With respect to Respondent's arguments regarding the Fuma prototype, there is corroborating evidence to support that the Fuma prototype device was delivered to Fuma's facility and demonstrated at the Tri-State Tobacco and Candy Convention in August 2009. CX-2951.0162. *See, e.g.*, CX-1377C (02/29/2024 Conley) at 39:17-42:21, 67:3-68:21, 69:10-14; CX-2117C (02/13/2024 Hillenbrandt) at 280:2-9; JX-0548 (12/04/2019 Conley) at 23:23-24:1, 285:23-286:2; JX-0549 (12/05/2019 Hillenbrandt) at 103:22-23, 143:16-20; JX-0502; CX-2163; CX-2160; CX-2179; CX-2164; JX-0504. Additionally, testimony from the named inventors supports that there are no differences between the patented design of the Fuma prototype devices demonstrated in August 2009 and the Fuma E-Cigarettes from the first commercial production run

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in September 2009. *See* CX-1377C (02/29/2024 Conley) at 47:4-8; 47:16-48:2; CX-2117C (02/13/2024 Hillenbrandt) at 283:4-7; JX-0549 (12/05/2019 Hillenbrandt) at 145:8-22.

With respect to Respondent's arguments regarding the devices depicted in the 131 Declarations, there is no evidence to suggest that these devices are not from the first commercial run. CX-2951.0162. In fact, Dan Hillenbrandt confirmed that the depicted devices were on sale on or around September 2009. CX-2217C (2/13/2024 Hillenbrandt) at 279:9-280:1; *see also* CX-1378C (03/01/2024 Conley) at 276:17-25; CX-2168; CX-2178; CX-2161C.

Regarding Respondent's arguments about evidence corroborating conception date, as set forth above, the documentation supports that Mr. Conley and Mr. Hillenbrandt conceived of the claimed inventions by July 28, 2009 and reduced them to practice by August 12, 2009. CX-2951.0162-.0163. The evidence sufficiently supports conception and reduction to practice on these dates.

With respect to Respondent's allegations that Complainant and Mr. Conley have not put forth evidence of how the asserted claims correspond to the evidence of conception or reduction to practice or how the asserted claims are entitled to a priority date of July 27, 2010 based on the 917 Application, this is addressed below in Section IV.D. CX-2951.0163-.0164.

a) Structure of Means-Plus-Function Terms

Respondent asserts that Complainant has failed to allege and meet its burden of showing prior conception and reduction to practice in 2009 of each of the proposed structures of the parties' proposed means-plus-function terms, including the structures of the "heating element" and "solution holding medium" terms. The term "heating element" has been construed to not be subject to § 112, ¶ 6, while the term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 33-50. As set forth above, and as will be

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demonstrated at the hearing, there is ample evidence that supports that these claim terms were conceived of by July 28, 2009, reduced to practice by August 12, 2009, and commercialized and sold by September 2009.

b) Aperture/Airflow Paths Being Proximate to Cartridge Ends

Respondent asserts that Complainant has not met its burden of showing prior conception and reduction to practice with respect to apertures and airflow paths being "proximate" to cartridge ends. CX-2951.0169.

The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

As set forth above, and as will be demonstrated at the hearing, there is ample evidence that supports that the inventors conceived by July 28, 2009, reduced to practice by August 12, 2009, and commercialized and sold by September 2009 the claimed apertures and airflow paths as being proximate to the cartridge ends.

c) Heating Element Location With Respect to Airflow

Respondent asserts that Complainant has not met its burden of showing prior conception and reduction to practice of the following "heating element" terms:

- 881 Patent, Claim 16: a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium, the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture, the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

- 864 Patent, Claim 1: the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the

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airflow, the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow,

- 864 Patent, Claim 9: the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow,

- 864 Patent, Claim 25: the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer, the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, … wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing.

CX-2951.0171-.0172.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21. The terms "the portion of the solution," "electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture," and "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" have been construed as having their "plain and ordinary meaning, that is, the language of the claims." CC Order at 21-33.

The parties have agreed that the term "electrically conductive portion" means "a portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

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As set forth above, and as will be demonstrated at the hearing, there is ample evidence that supports that the inventors conceived by July 28, 2009, reduced to practice by August 12, 2009, and commercialized and sold by September 2009 the claimed solution holding medium and heating element terms.

d) Heating Element Details and Wicking Material

Respondent asserts that Complainant "does not allege, and the documents do not show, prior conception or diligent reduction to practice of a heating element including and/or comprising a wicking material." CX-2951.0174. Specifically, Respondent alleges that "[t]o the extent the alleged Fuma Prototype contains a coil with a wick structure through the center, and extending into the batting, Fuma did not disclose such a structure in the specification of the Asserted Patents." CX-2951.0175. However, as set forth above, and as will be demonstrated at the hearing, the August 2009 Fuma prototype device and September 2009 commercialized version clearly support an e-cigarette having a coil with a wick structure through the center and extending into the batting. In fact, the Conception Sketch and the Tolerance Drawings depict an e-cigarette cartridge, wherein the heating element is in an airflow passageway surrounded by a solution holding medium. Accordingly, the solution in the solution holding medium would have to get to the heating element in the airflow passageway, and a wick was a common means of conveying solution to a heating element. *See* CX-1377C.0046 (02/29/2024 Conley) at 182:10-183:2. Moreover, the Asserted Patents disclose that the heating element may comprise a wicking material. *See, e.g.*, JX-0001 (864 Patent) at 6:46-49.

e) Nichrome

Respondent asserts that:

> To the extent the alleged heating element of the Fuma Prototype comprises nichrome (also known as nickel-chromium or chromium-nickel), Fuma Prototype would not be entitled to any conception

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> and/or reduction to practice date until August 25, 2012, when inventors of U.S. Application No. 13/594,813 added disclosure of 'a heating element made from metallic substance such as nichrome, nickel chromium, …' *See* '628 Patent, at 16:19-25; File history of the '628 Patent, 08-25-2012 Specification, at 22-23.

CX-2951.0176. However, as set forth above, and as will be demonstrated at the hearing, the August 2009 Fuma prototype device supports an earlier invention date for heating elements comprising nichrome. Moreover, the evidence will show a POSITA would have understood that nichrome heating wires were very common and the predominant material used in electronic cigarettes. CX-2157C (Vallee Opening Report) ¶ 631. For example, the inventors of the Asserted Patents filed an IDS on July 27, 2010 with the 917 Application that disclosed U.S. Patent Publication No. 2006/0196518 to Lik ("Lik 518"). Lik 518 has an April 29, 2003 foreign application date and March 8, 2004 PCT filing date, and discloses an "electric heating element" that may be made "of wires of nickel chromium alloy" and "may be in the shape of … single spiral…" CX-2252 (Lik 518) at [0020]. Moreover, Respondent's argument misses the mark, as the Asserted Claims do not require a nichrome heating element as properly construed.

f) Airflow Passageway

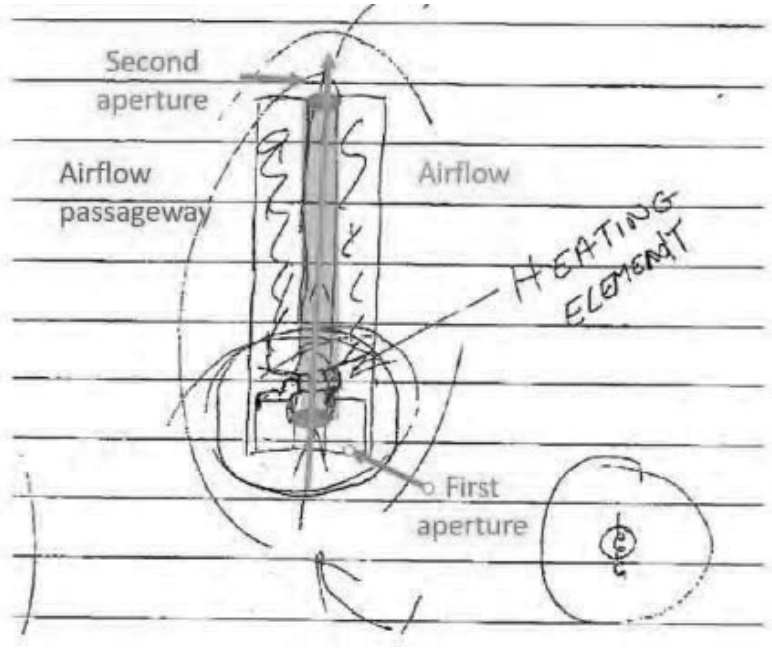
Respondent asserts that Complainant "does not allege, and the documents do not show, prior conception or diligent reduction to practice of the airflow passageway as defined in the Asserted Claims." CX-2951.0177. As set forth above, and as will be demonstrated at the hearing, the inventors conceived by July 28, 2009, reduced to practice by August 12, 2009, and commercialized and sold in September 2009 the airflow passageway as defined in the asserted claims of the Asserted Patents.

Respondent further alleges that Complainant "admits that the alleged airflow passageway in the Fuma Prototype product is the blue region shown below, beginning above the alleged heating element, and terminating at the alleged second aperture." CX-2951.0179. However,

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Respondent cites to an older version of Complainant's contentions, and does not address the updated annotated version of the Conception Sketch included in Complainant's supplemental contentions:



JX-0507.0003 (annotated)

As clearly shown in this above figure, the airflow passageway extends from the first aperture to the second aperture, and shows the inventors conceived by July 28, 2009 the claim limitations requiring an airflow passageway extending from the first aperture to the second aperture.

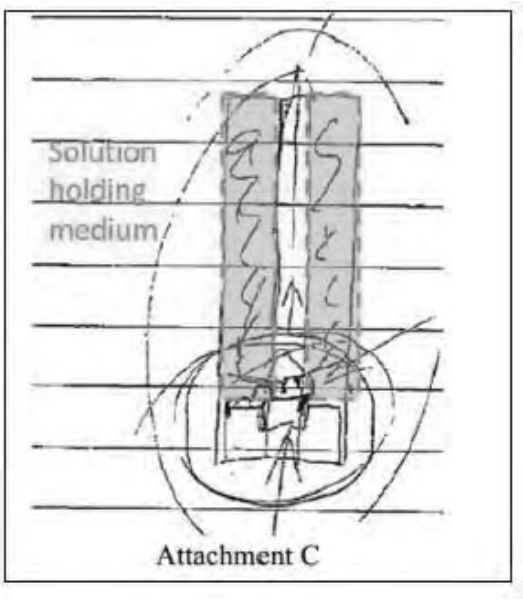
g) Airflow Passageway / Heating Element Surrounded by a Solution Holding Medium

Respondent asserts that Complainant "does not allege, and the documents do not show, prior conception or diligent reduction to practice of solution holding mediums surrounding the airflow passageway and the heating element in the housing intermediate the first and second ends as defined in the Asserted Claims." CX-2951.0180. Respondent further alleges that Complainant

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"fails to show that the batting material surrounds the coil, wick, and the alleged passageway of the Fuma Prototype device." For example, Respondent contends that the figure below fails "to show the wick, or the batting material surrounding the coil or wicking material":

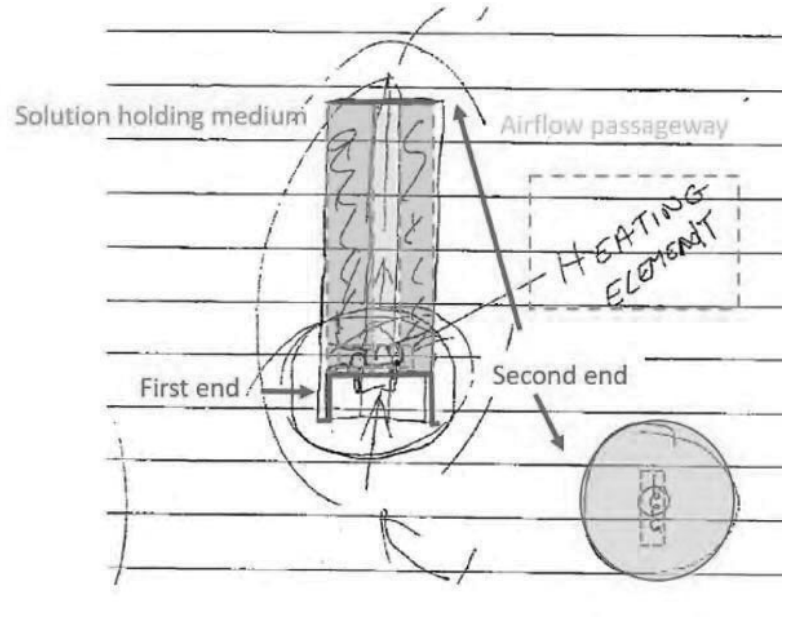


JX-0507.0003 (annotated)

However, as set forth above, and as will be demonstrated at the hearing, the evidence supports that the inventors conceived by July 28, 2009, reduced to practice by August 12, 2009, and commercialized and sold by September 2009 a cartridge having a solution holding medium, wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end, as shown in the annotated figure below:

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JX-0507.0003 (annotated)

Respondent also contends that the figure below fails "to show how the batting material fits in the cartridge relative to the airflow passageway and heating element."



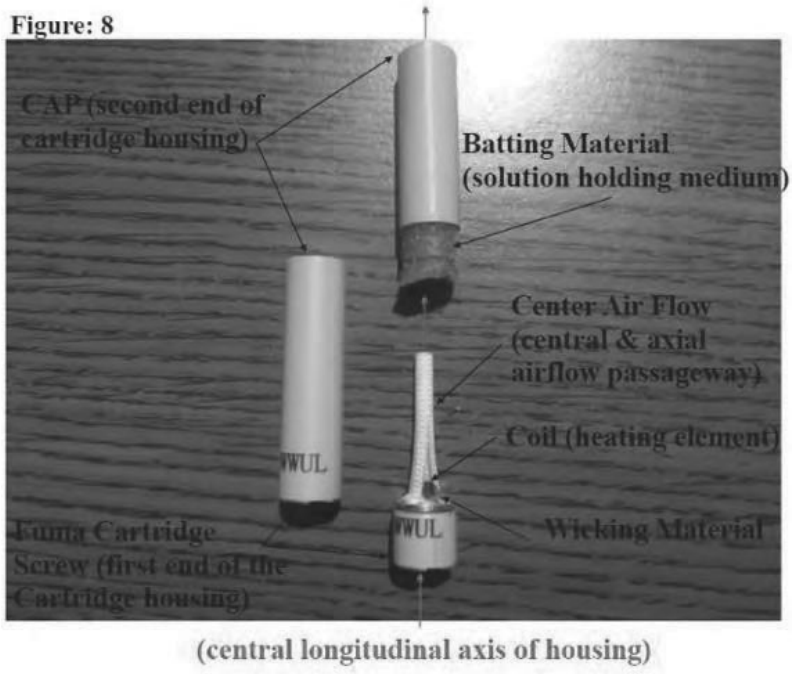
JX-0543 at Fig. 7

However, the figure above clearly shows the batting material would surround the airflow passageway. Moreover, Respondent ignores other evidence showing how the batting material is positioned in the cartridge. As set forth above, and as will be demonstrated at the hearing, the evidence shows the inventors reduced to practice by August 12, 2009 and commercialized and

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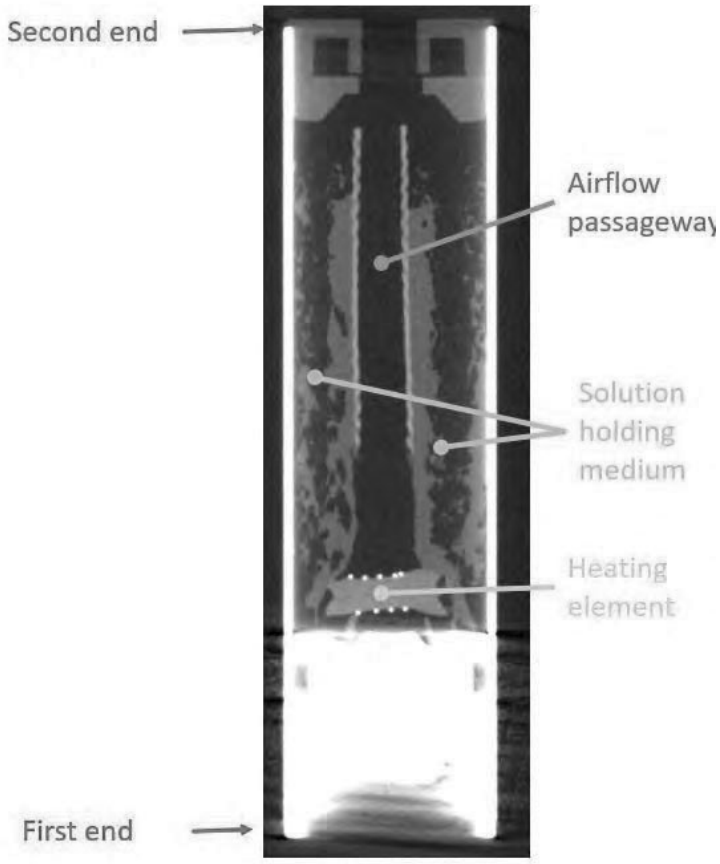
sold by September 2009 a cartridge having a solution holding medium, wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end, as shown below:



JX-0543 at Fig. 8; *see also id.* ¶ 5

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CX-2758.0078 (annotated)

h) Heating Element Extends Transversely, Both Transverse Sides, Plane Perpendicular to Longitudinal Axis

Respondent asserts that Complainant "does not allege, and the documents do not show, prior conception or diligent reduction to practice of (a) a transverse heating element extending across the airflow passageway or transversely across a central longitudinal axis of the housing, (b) airflow through the passageway passes on both transverse sides of the heating element, or (c) a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and a solution holding medium as defined in the Asserted Claims." CX-2951.0181-.0182. Respondent further contends that because the "terms 'transversely,' 'across,' 'transversely

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across,' 'transverse,' 'sides,' and 'transverse sides' are not used in the disclosure of the '819 Provisional Application or even the '917 Application" that Complainant "fails to show that the 'transversely across' and 'transverse sides' limitations are entitled to the priority date of July 27, 2009, August 12, 2009, or July 27, 2010." CX-2951.0183. Not so.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

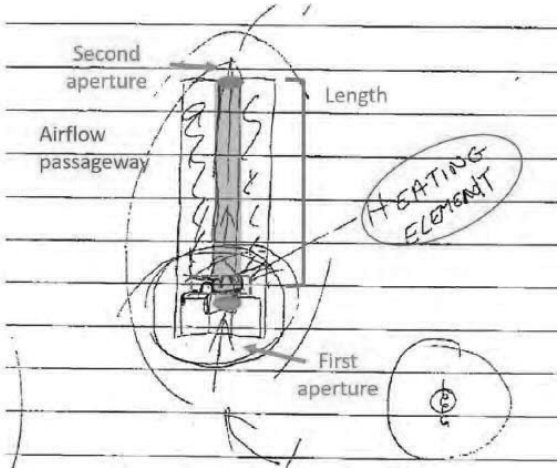
The evidence will show a POSITA would have understood that the claim limitations reciting "transversely" and fully supported by the disclosure of the 917 Application, filed on July 27, 2010. *See* CX-2157C (Vallee Opening Report) ¶ 639. For example, the 917 Application discloses "[t]he cartridge 200 … comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the housing 202 by way of conductive lines 224 and 226. The heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222." JX-0520 (917 Application) ¶ 31; *see also id.* ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. the heating element 222 can be helical in nature …. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."). The cartridge shown in Figure 2 also provides support and discloses the "transverse" limitations.

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Moreover, as set forth above, and as will be demonstrated at the hearing, there is ample evidence that supports that the inventors conceived by July 28, 2009, reduced to practice by August 12, 2009, and commercialized and sold in September 2009, the claimed (a) a transverse heating element extending across the airflow passageway or transversely across a central longitudinal axis of the housing, (b) airflow through the passageway passes on both transverse sides of the heating element, and (c) a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and a solution holding medium as defined in the Asserted Claims.

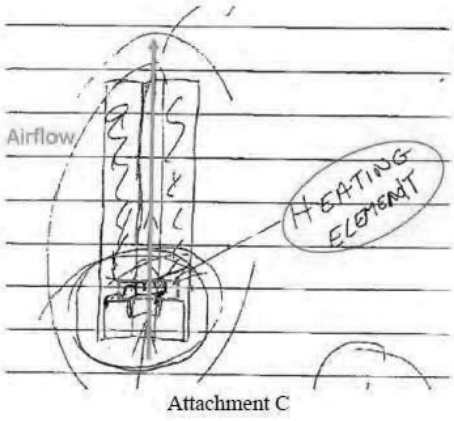
Respondent further alleges that Complainant "does not allege, and the documents do not show, prior conception or diligent reduction to practice of airflow passing on both transverse sides of the heating element. NJOY provides no evidence, for example, of how airflow passes through the Fuma Prototype, including showing how air would flow on transverse sides of the heating coil." CX-2951.0184. Not so. In fact, Complainant included several additional annotated figures in its contentions showing that the inventors conceived of a transverse heating element that extends transversely across an airflow passageway, and shows airflow would pass on both transverse sides of the heating element. For example:



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JX-0507.0003 (annotated)



Attachment C

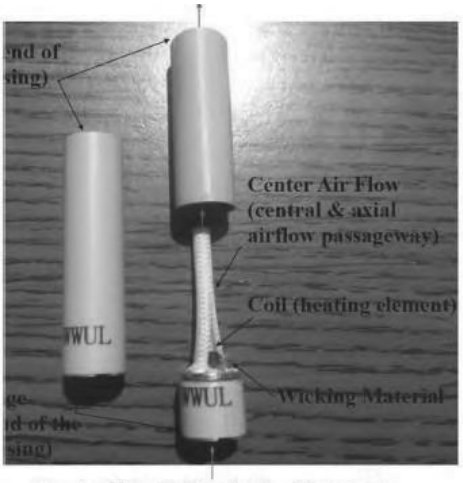


JX-0507.0003 (annotated)

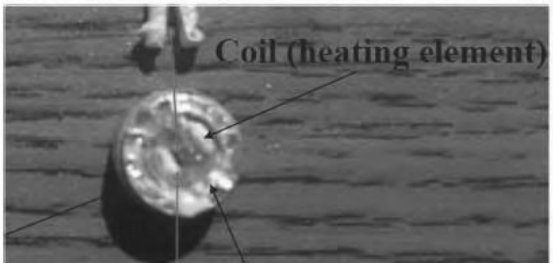
As set forth above, and as will be demonstrated at the hearing, the evidence, including the first commercial run Fuma E-Cigarette, also shows that the inventors reduced to practice by August 12, 2009 a device having airflow passing on both transverse sides of the heating element.

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Attachment D at Fig. 6



JX-0543 at Figs. 6, 13; see *also* JX-0545 at Figs. 6, 13; *see also id.* ¶ 5

Therefore, the conception evidence, the August 2009 Fuma prototype device, and the 917 Application each clearly support an e-cigarette having a transverse heating element that extends transversely across an airflow passageway, and airflow passing on both transverse sides of the heating element.

i) Vaporization

Respondent asserts that Complainant "does not allege, and the documents do not show, prior conception or diligent reduction to practice of vaporization, including how and/or where vaporization occurs, as recited in the Asserted Claims." CX-2951.0185. As set forth above, and as will be demonstrated at the hearing, the evidence shows that the inventors conceived by July 28, 2009 and reduced to practice by August 12, 2009 a cartridge including a heating element

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configured to vaporize a solution, which was commercialized and sold in September 2009. The evidence will show a POSITA would have understood and have been well aware, and as was common with e-cigarettes at the time, that power applied to the heating element would cause the heating element to heat up and vaporize e-liquid, which mixes with air to form an aerosol. *See* CX-2157C (Vallee Opening Report) ¶ 643.

D. Priority Date

As explained in this section, and as will be shown as the hearing, each of the asserted claims of the Asserted Patents are entitled to a priority date of July 27, 2010, when U.S. Application No. 12/843,917 ("the 917 Application") was filed.

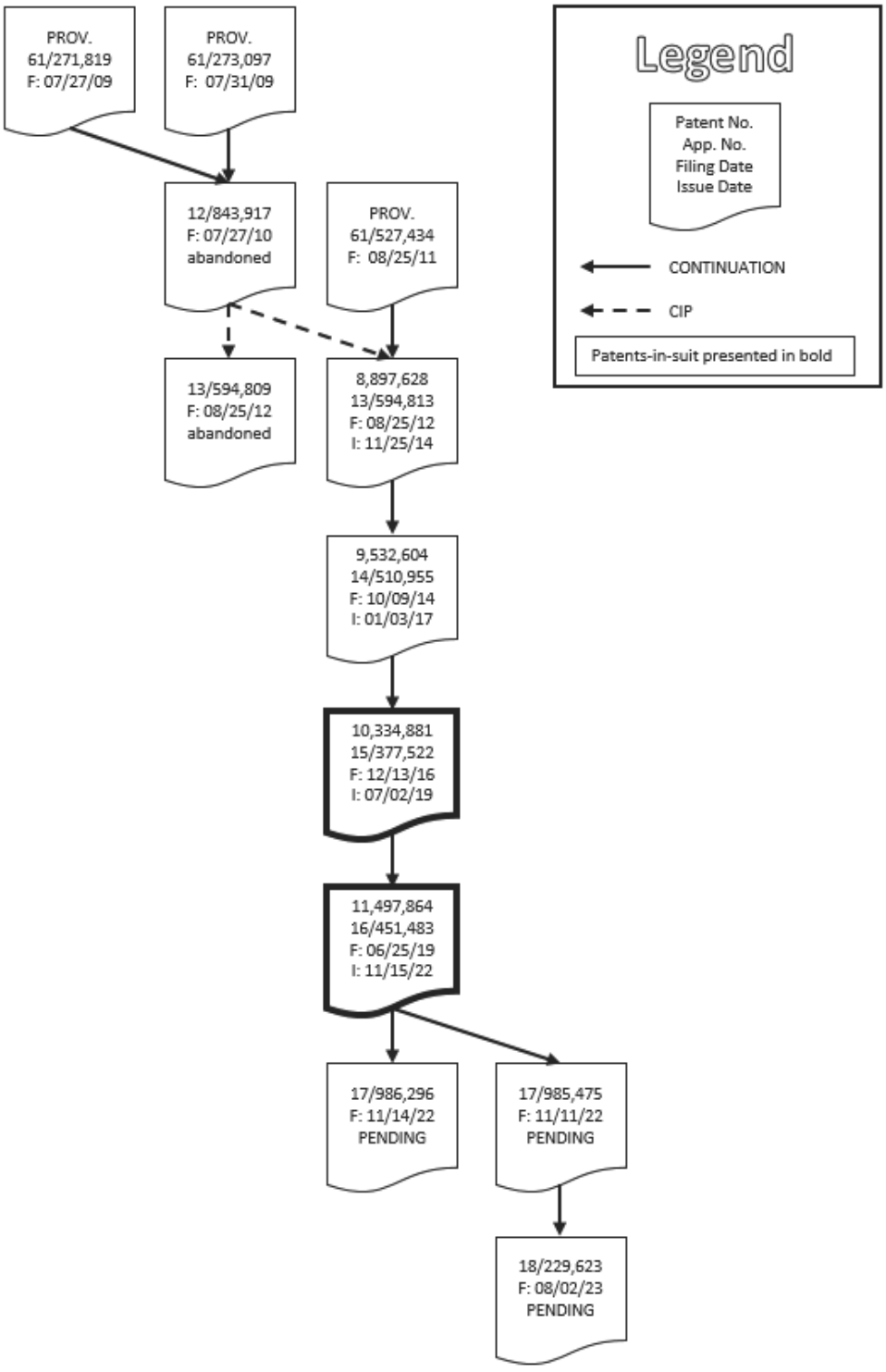
1. Relevant Patent Family History

a) Early Provisional Applications

Although the 881 and 864 Patents have filing dates of December 13, 2016 and June 25, 2019, respectively, they claim priority to three provisional applications from 2009 and 2011, as well as being a continuations or continuations-in-part of earlier applications dating back as far as July 27, 2010. Below is a depiction of the patent family tree:

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CX-2157C (Vallee Opening Report) ¶ 590

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The earliest provisional application—U.S. Provisional No. 61/271,819—consists of one page of text and a drawing. The text includes a description of an adapter that was intended to provide interoperability between different manufacturers' cartridges and power sources and "allow for airflow through the connector and or electrical connection from any power source to the attach [sic] to any nicotine cartridge or atomizer/heating element." CX-2302.0005. The illustrated adapter shows threaded connectors and the accompanying text notes that different connector types, including threaded connectors, are contemplated. CX-2302.0005-0006. The second provisional application—U.S. Provisional No. 61/273,097—(filed 4 days later) includes a lengthier description (just over 2 pages) of elements of the asserted patent claims – a power source with a connection to a housing for a cartridge with an axial airflow passage through a solution holding medium that can be heated. The second provisional application discloses an axial passage as "a path way to allow the air to follow [sic] through and/or around the suspension medium, thus providing the user with the optimum transfer of vapor." JX-0556.0006.

b) The 917 Application

A non-provisional application—U.S. Patent Application No. 12/843,917 ("917 Application")—explicitly incorporating by reference the provisional applications was filed on June 27, 2010. The first eight of nine figures of the Asserted Patents were included with the filing with the 917 Application. The 917 Application describes the claimed inventions of the asserted claims, as set forth further below in Sections IV.D.2. through IV.D.18.

The pending claims of the 917 Application were rejected in the first office action dated July 16, 2013 in which the patent examiner applied three prior art references. JX-0520.0059-.0067.

The first prior art reference is a patent application publication with a foreign priority date of April 30, 2008 and a U.S. filing date of April 29, 2009, Pub. No. US 2009/0272379 to Thorens et al. ("Thorens," CX-2246). As noted by the applicants, an axial passageway would be

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impracticable in the Thorens embodiments because they have a wick/heater cap/coil arrangement that would block a central airflow passageway.

The second prior art reference applied by the patent examiner is U.S. Patent No. 4,284,089 to Ray ("Ray," CX-2276). Ray discloses a simulated smoking device, which, importantly, does not heat the solution but rather uses a constricted passageway "to promote effective vaporization of the nicotine mixture without combustion or heating." CX-2276 at 6:35-37. Ray relies upon the Venturi effect (a reduction in pressure (and corresponding increase in velocity) when a fluid (*e.g.*, vapor) flows through a constricted section of pipe). According to Ray, "[t]he reduced pressure will allow any liquid exposed to the low pressure area to more readily transfer to the vapor or gaseous phase and be absorbed into the gas." *Id.* at 6:42-44. Not only is there no reason to combine the axial passageway of Ray with the vaporizer of Thorens, but Ray actually teaches away from using a heating element in a vaporizer (and thus a combination with Thorens).

The third prior art reference applied by the patent examiner is U.S. Patent No. 5,249,586 to Morgan et al. ("Morgan," CX-2251). Morgan discloses a two-part electrical cigarette ("e-cig"). Morgan, like Thorens, does not disclose or suggest an axial air passageway. The patent examiner relied on Morgan for a disclosure of a heating element around an air passageway (albeit an annular passageway and not a central axial passageway). JX-0520.0066.

The patent applicants responded to the first office action on October 16, 2013 and amended the pending claims to include an axial passageway limitation. JX-0520.0085-.0103. These amendments did not persuade the patent examiner and he reiterated his rejections based on the Thorens, Ray and Morgan references in a final office action dated December 4, 2013. JX-0520.0107-.0116.

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The applicants filed a response after final action on February 3, 2014 in which they added limitations to a power source and a threaded coupling between the power source housing and the heating element housing. JX-0520.0124-.0138. The applicants argued that none of the applied prior art disclosed a cartridge with a solution and a heating element that is coupled via threads to a power source and, furthermore, did not disclose or suggest any apparent reason to use a threaded coupling. *Id.*

In a non-final rejection dated May 6, 2014, the patent examiner dismissed the patent applicants argument regarding threaded connections and asserted that threaded couplings are old and well-known, maintained his objections and applied a fourth prior art reference, U.S. Patent No. 7,412,259 to Yoo et al. ("Yoo," CX-2250), that discloses a mobile phone with a USB connector. JX-0520.0174-.0182. The applicants did not respond and the 917 Application was abandoned. JX-0520.0188-.0189.

c) The Continuation-in-Part Provisional and Application

Several years before the first office action for the 917 Application was received in 2013, the applicants filed a comprehensive provisional application—U.S. Provisional No. 61/527,434—on August 25, 2011 that was a complete continuation-in-part application adding new matter relating to a power harvesting device that could be added to the e-cigarette, if desired, and further describing the use of the new e-cigarette as a "metered dose inhaler," i.e. a way to limit the amount of vapor delivered to an e-cigarette user in a metered and controlled way. The new matter that describes the power harvester and the metered dose inhaler is not relevant to the claims of the 881 or 864 Patents, to the accused products, or the domestic industry products in this investigation. The provisional application became a non-provisional continuation-in-part application—U.S. Patent App. No. 13/594,813 ("CIP Application")—on August 25, 2012. All of the claims in the CIP Application included a "power harvesting device" limitation. Most of the pending "power

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harvester" claims were rejected in an office action on April 10, 2014 over Thorens and Pub No. US 2010/0288847 to Gruenbacher et al. ("Gruenbacher," CX-2319) and the combination of Thorens and Ray. Gruenbacher discloses a powered air freshener. The applicants amended the pending power harvester claims on July 7, 2014 to explicitly recite power generation from the airflow. The applicants also reiterated that Thorens does not disclose or suggest an axial airflow passageway and Ray teaches away from using combustion or heat. The patent examiner agreed that the power harvesting invention was patentable and U.S. Patent No. 8,897,628 with power harvester claims issued on November 25, 2014.

d) The 955 Application

U.S. Patent App. No. 14/510,955 ("the 955 Application") was filed on October 9, 2014, is a continuation of the CIP Application, and incorporated the entirety of the parent applications by reference. JX-.0521.0001-.0052. The first office action was mailed on January 15, 2016 and all but one of the pending claims were rejected as obvious over the combination of Thorens and Ray or Thorens, Ray and Morgan. JX-0521.0073-.0082. A dependent claim reciting additional limitations of a controller and airflow meter (which are claimed in issued claim 20) was objected to. *Id.*

The applicants responded to the office action on July 11, 2016, arguing that there was no question that Thorens does not disclose (1) a housing with a central axial airflow passageway, (2) a solution holding medium surrounding a portion of the central axial airflow passageway, and (3) a threaded electrical connection coupling a battery to a heating element in a cartridge. JX-0521.0106-.0130. Fuma argued that the patent examiner's proposed modifications of the devices described in the patents he cited would render Ray unsatisfactory for its intended purpose because Ray teaches away from a heating element and adding a heating element would impermissibly change the operating principles of Ray, which used a Venturi affect to vaporize the liquid and

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specifically avoided using any kind of heating element. JX-0521.0119-.0120. The applicants also again tried to argue that it would not have been obvious to use threaded connectors although the patent examiner had previously rejected that argument. JX-0521.0123-.0124. Further distinctions that appear in dependent claims were also highlighted, particularly with respect to the configuration of the heating element as claimed. JX-0521.0125-.0126. The patent examiner issued a Notice of Allowance on August 29, 2006. JX-0521.0137-.0138. U.S. Patent No. 9,532,604 issued on January 3, 2017.

e) The 881 Patent File History

The application of the 881 Patent—U.S. Patent App. No. 15/377,522—was filed on December 13, 2016, and is a continuation of the 955 Application. JX-0010.0003-.0063. The applicant, Fuma International, LLC ("Fuma"), amended the claims of the 881 Patent on November 2, 2018. *Id.* at .0335-.0344. The USPTO issued no rejection to the 881 Patent application and the patent examiner issued a notice of allowance on February 26, 2019. *Id.* at .0364-.0365. The 881 Patent issued thereafter on July 2, 2019.

f) The 864 Patent File History

The application of the 864 Patent—U.S. Patent App. No. 16/451,483—was filed on June 25, 2019, and is a continuation of the 881 Patent application. During the prosecution of the 864 Patent, the applicant (Fuma) submitted a swear-behind declaration stating that: "[p]rior to January 13, 2010…[applicant] reduced to practice in this country the invention as described." JX-0008.6452.

On March 14, 2022, Examiner issued a non-final rejection on the basis that U.S. Pub. No. 2009/0095311 to Han anticipated the proposed claims under AIA § 102. JX-0008.8884-.8892. In response, the applicant argued that: (1) Han does not disclose a "cartridge," and (2) Han does not

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disclose "wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture." *Id.* at .9008-9009.

The examiner subsequently issued a second non-final rejection on September 8, 2022 based on Thorens. *Id.* at .9010-.9017. The examiner stated that Thorens anticipated the proposed claims. The applicant responded that Thorens did not disclose a transverse heating element with respect to the central longitudinal axis of the housing. Following an Examiner Interview, the applicant amended the independent claims to include a "cartridge," "a transverse heating element," and an "airflow passageway [that] extends centrally and axially from the first aperture to the second aperture." *Id.* at. 9097. The Notice of Allowance issued following the amendment on October 5, 2022. *Id.* at .9114-.9118.

g) Rebuttal to Respondent's Description of the Patent Family and Prosecution History

Respondent, through its expert, Mr. Leinsing, contends that a "significant portion of the disclosure supporting some of the Asserted Claims was not included in a patent application until July 27, 2010, when [the 917 Application] was filed." JX-0632C (Leinsing Opening Report) ¶ 88. As set forth below, the 917 Application demonstrates that the inventors were in possession of the claimed inventions of the 881 and 864 Patents by July 27, 2010. Moreover, as set forth below, the 917 Application provides written description support for the claims of the 881 and 864 Patents.

Several years before the first office action for the 917 Application was received in 2013, the applicants filed a comprehensive provisional application—U.S. Provisional No. 61/527,434—on August 25, 2011 that was a continuation-in-part application adding new matter relating to a power harvesting device that could be added to the e-cigarette, if desired, and further describing the use of the new e-cigarette as a "metered dose inhaler," *i.e.* a way to limit the amount of vapor

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delivered to an e-cigarette user in a metered and controlled way. The new matter that describes the power harvester and the metered dose inhaler is not relevant to the claims of the Asserted Patents. The provisional application became a non-provisional continuation-in-part application—U.S. Patent App. No. 13/594,813 ("CIP Application")—on August 25, 2012. All of the claims in the CIP Application included a "power harvesting device" limitation. Most of the pending "power harvester" claims were rejected in an office action on April 10, 2014 over Thorens and Pub No. US 2010/0288847 to Gruenbacher et al ("Gruenbacher") and the combination of Thorens and Ray. Gruenbacher discloses a powered air freshener. The applicants amended the pending power harvester claims on July 7, 2014 to explicitly recite power generation from the airflow. The applicants also reiterated that Thorens does not disclose or suggest an axial airflow passageway and Ray teaches away from using combustion or heat. The patent examiner agreed that the power harvesting invention was patentable and U.S. Patent No. 8,897,628 ("the 628 Patent") with power harvester claims issued on November 25, 2014.

Mr. Leinsing opines that the 628 Patent recites additional exemplary structures for the solution holding medium such as pellets and capsules. JX-0632C (Leinsing Opening Report) ¶ 89. However, the pellets disclosed in the 628 Patent (or capsules as disclosed in column 7, lines 3-27 and column 15, line 64 through column 16, line 5 of the 628 Patent) are not to perform the function of holding a solution. The evidence will show that a POSITA would not have understood that the disclosure of pellets or such capsules as performing this function.

Pellets are disclosed in the following two instances:

> Also, an alternative embodiment of a cartridge (adapted to mount to the described power source) may be configured to receive one or more capsules or pellets. Such capsules or pellets may be comprised of one or more medicines, vitamins, a tobacco, and/or other chemical(s) that the end user may desire to taste/consume. In such an embodiment, when the cartridge with a capsules is mounted to a

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> power source (e.g. such as the power source 104 discussed above), the mechanical connection of the cartridge and power source may cause the capsule to open and release the contents therein. The end user may then provide a suction on the tip of the cartridge with his/her mouth in order to draw the released contents of the capsule into his/her mouth. In examples of this described embodiment, the capsule may be included in the cartridge during the manufacturing of the cartridge. However, it should be appreciated that in other embodiments, the cartridge may be designed to accept one or more capsules therein via a pharmacist and/or an end user prior to mounting the cartridge to a power source. Also it should be appreciated that this described example of the cartridge may also include a heating element therein that is configured to heat a capsule (or a pellet) to cause release of the contents of the capsule/pellet when the cartridge is mounted to the power source or when other actions are detected (e.g. a button press, suction through the cartridge).

CX-2247 (628 Patent) at 7:3-27.

> Further, it should be noted that any of the chemical delivery examples described herein (vaporizer, capsule, pellet, auto injector) may be operative to deliver any type of desirable substance to a user, including but not limited to: medications, antibiotics, pain killers, pharmaceuticals, narcotics, nicotine, tobacco, THC, marijuana, caffeine, vitamins, herbal substances, food, steroids, epinephrine, insulin, and/or any other substances that may be desirable by an end user of the described embodiments.

CX-2247 (628 Patent) at 15:64-16:5.

The evidence will show that a POSITA would not understand that the first passage at column 7, lines 3 through 27, discloses solution holding mediums. It does not mention a solution or liquid, and it does not use the words "holding medium" or similar language. Rather, the evidence will show that a POSITA would understand that this disclosure is more consistent with heating solids or powders, which may be found in capsules or compressed into pellets. *See, e.g.*, CX-2247 (628 Patent) at 16:13-19 (stating that the heating element may be used with "a solution, solid or powder."). Indeed, a pellet is a small, compressed solid. Also, this passage does not mention vaporization (which is the result of heating a solution), despite elsewhere throughout the patent

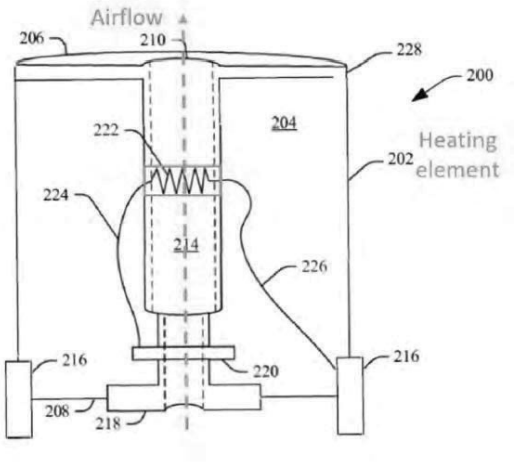
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discussing vaporization. The passage instead states that heating causes "contents" to be released. This passage therefore does not clearly link the structures described to the claimed function.

The second passage at column 15, line 64 through column 16, line 5, also separately lists a "vaporizer" and a "pellet" as chemical delivery examples, suggesting that a pellet does not hold any solution to be vaporized.

With respect to the 628 Patent (*i.e.*, the CIP Application), Respondent's expert, Mr. Leinsing, also opines that the Applicant amended the specification to recite a heating element "located in the center airflow." JX-0632C (Leinsing Opening Report) ¶ 89. However, the 917 Application discloses the heating element being "located in the center airflow." Figure 2 of the 917 Application discloses a cartridge with an airflow passageway 214 and a heating element 222 located in the center airflow, as shown below:



JX-0520 (917 Application), Fig. 2 (annotated)

The 917 Application also discloses "the heating element 222 is shown as residing solely in the airflow passageway 214." JX-0520 (917 Application) ¶ 32. The 917 Application also discloses the heating element in the airflow path, wherein the airflow passes on the transverse sides of the heating element. *See, e.g.*, JX-0520 (917 Application) ¶¶ 31, 32 ("While the heating element 222

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is shown as residing solely in the airflow passageway 214"), 32 ("airflow may pass directly over the heating element"), Fig. 2. Moreover, Complainant's expert's, Dr. Vallee's, opinions relating to "both transverse sides of the [heating] element" further support that the 917 Application discloses the heating element being "located in the center airflow." *See* Vallee CC Decl. ¶¶ 34-40.

Respondent's expert, Mr. Leinsing, opines that "[d]uring the prosecution of the '881 Patent, the Applicant added the labels for aperture 212 in Figs. 2 and 3 on February 26, 2019." JX-0632C (Leinsing Opening Report) ¶ 91. Although Figure 2 in the 917 Application does not label aperture 212, the evidence will show that a POSITA would have understood that the aperture at the bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See, e.g.*, JX-0520 (917 Application) ¶¶ 29-30 (describing "aperture 212").

***

As set forth below, the asserted claims of the Asserted Patents are fully supported by the 917 Application.

2. 881 Patent, Claim 1

a) [1.1] An apparatus comprising

The 917 Application discloses an apparatus.

The 917 Application discloses "various aspects generally pertaining to electronic vaporizers, and more particularly pertaining to cartridges that comprise heating elements configured to vaporize a solution." JX-0520 (917 Application) ¶ 4; *see also id.*, Figs. 1-3.

b) [1.2] a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion; and

The 917 Application discloses a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion.

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The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[t]he heating element is configured to vaporize the solution responsive to receiving power from a power source (e.g., a battery)." JX-0520 (917 Application) ¶ 4. The 917 Application also discloses "[t]he cartridge 200 further comprises a conductive element 216, at least a portion of which resides in the interior of the housing 202. For instance, the conductive element may be metallic threads that facilitate mechanically and electrically coupling the cartridge 200 with a power source (battery)." *Id.* ¶ 30. Additionally, "[t]he cartridge 104 may comprise an electrically conductive threaded fastener, and the power source 102 may comprise an electrically conductive threaded receiver." *Id.* ¶ 18; *see also id.*, Figs. 1-3.

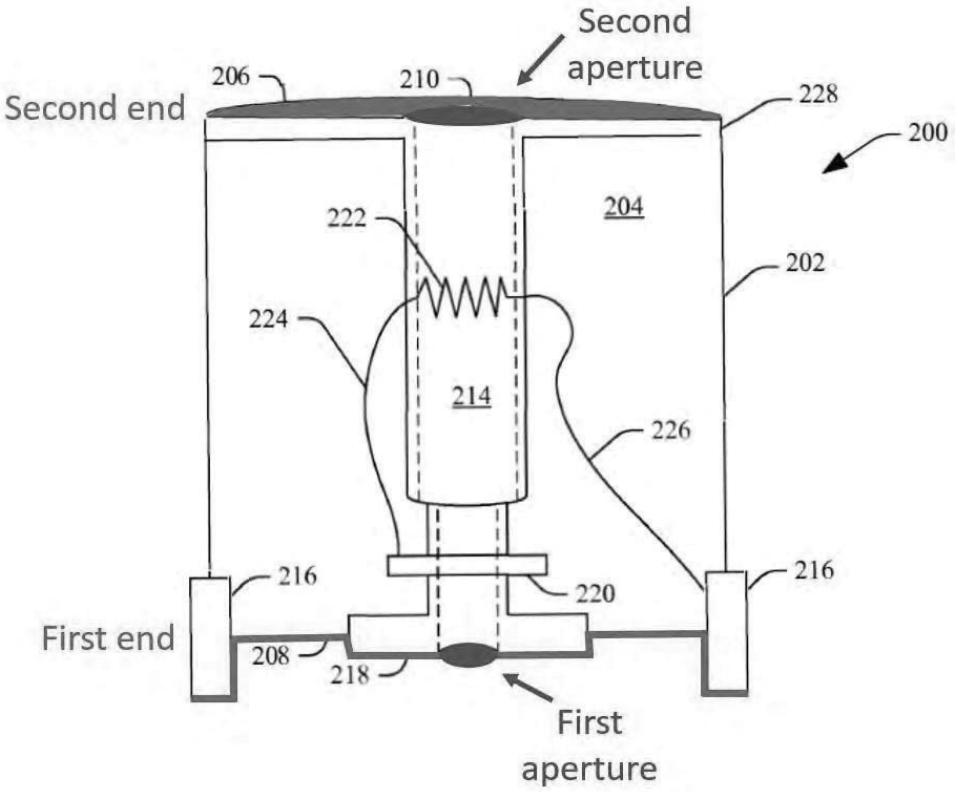
c) [1.3] a cartridge having a housing that comprises an interior, wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end

The 917 Application discloses a cartridge having a housing that comprises an interior, wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end.

The 917 Application discloses "[t]he cartridge 104 comprises a housing 120 that has an interior," and "[t]he first end 122 of the cartridge 104 comprises a first aperture 130 that is located at approximately the center of the first end 122 of the cartridge 104." JX-0520 (917 Application) ¶¶ 21, 24. The 917 Application also discloses "[t]he second end 124 comprises a second aperture 132 that is located at approximately the center of the second end 124 of the cartridge 104." *Id.* ¶ 24; *see also id.*, ¶¶ 28, 29, Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [1.3].

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***Id.*, Fig. 2 (annotated)**

d) [1.4] wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing,

The 917 Application discloses a cartridge having housing, which includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing.

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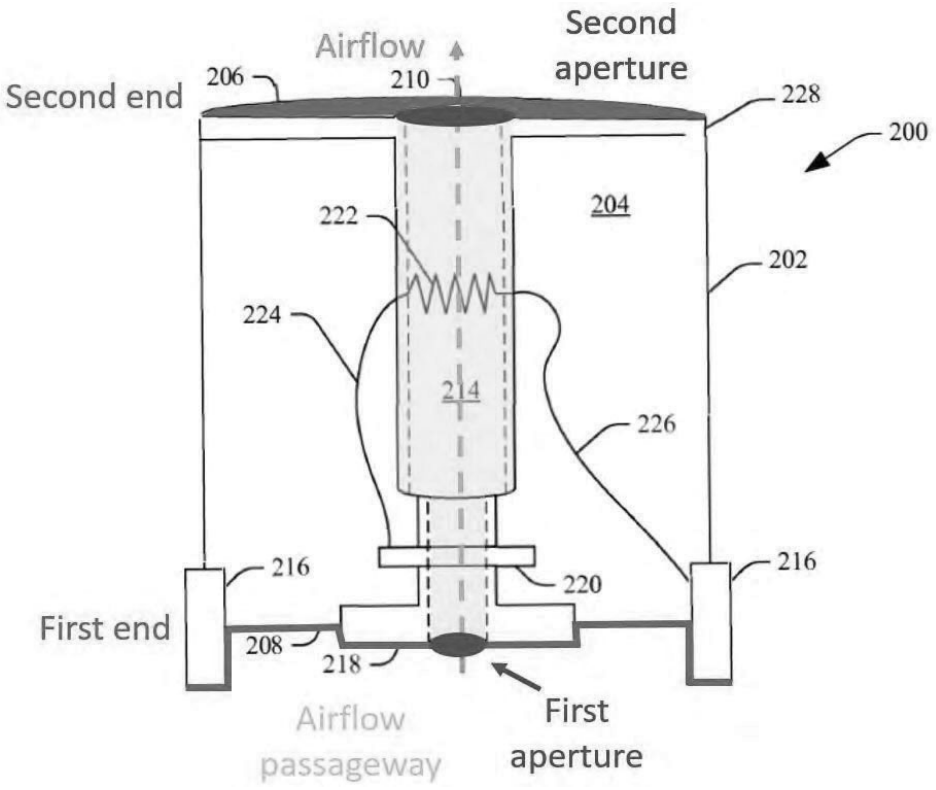
The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[a]n air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200." JX-0520 (917 Application) ¶ 29; *see also id.*, Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [1.4].

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***Id.*, Fig. 2 (annotated)**

e) [1.5] wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source,

The 917 Application discloses a cartridge having a housing wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[i]n operation, the user mechanically and electrically couples the power source 102 with the cartridge 104." JX-0520 (917 Application) ¶ 25. The 917

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Application also discloses "[t]he first end 122 and the second end 124 may be or include end caps, wherein such end caps may be constructed of the polymer. In an exemplary embodiment, an end cap coupled to the first end 122 may at least be partially constructed of a conductive material, such as a conductive metal or a conductive polymer." *Id.* ¶ 27; *see also id.*, ¶ 30 ("The cartridge 200 further comprises a conductive element 216, at least a portion of which resides in the interior of the housing 202. For instance, the conductive element may be metallic threads that facilitate mechanically and electrically coupling the cartridge 200 with a power source (battery)."), Figs. 1-3.

f) [1.6] wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing,

The 917 Application discloses a cartridge having a housing, wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing.

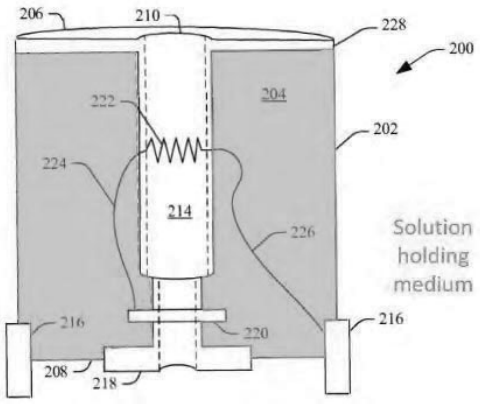
The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50.

The 917 Application discloses "[t]he cartridge 104 comprises a housing 120 that has an interior." JX-0520 (917 Application) ¶ 21. The 917 Application also discloses "[a] liquid, gelatin, frozen or solid solution (solution) 128 also resides in the interior of the housing 120, wherein the solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128." *Id.* ¶ 23. Additionally, "the solution 128 may be placed in an absorbent material, such as cotton, wool, polyester, a batting material, or some other suitable absorbent material." *Id.* ¶ 27; *see also id.*, Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [1.6].

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***Id.*, Fig. 2 (annotated)**

g) [1.7] wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element,

The 917 Application discloses a cartridge having a housing, wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element.

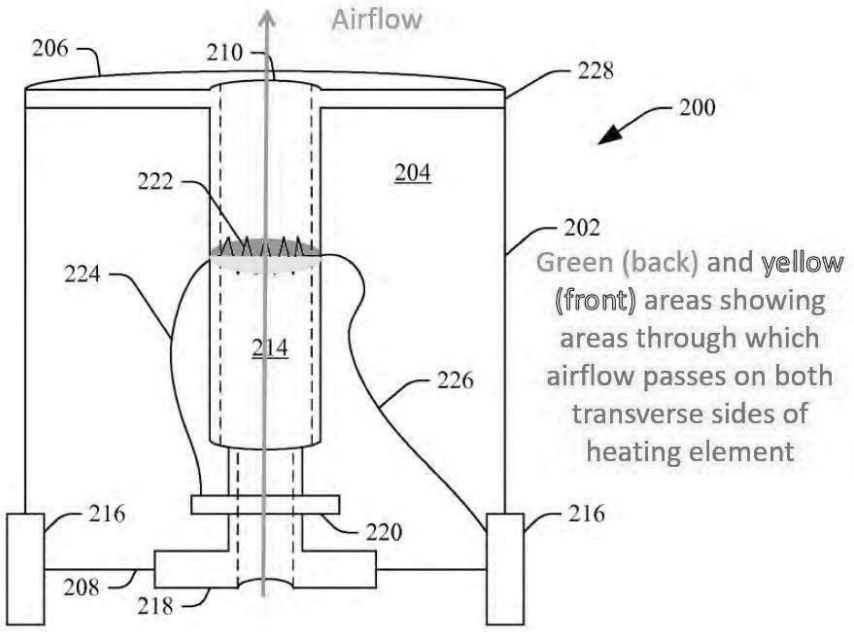
The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

The 917 Application discloses "[t]he cartridge 200 … comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the housing 202 by way of conductive lines 224 and 226. The heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222." JX-0520 (917 Application) ¶ 31. The 917 Application also discloses "[a] heating

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element 126 resides in the interior of the housing 120" and "[t]he heating element 222 is shown as residing solely in the airflow passageway 214. . . ." *Id.* ¶¶ 22, 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. the heating element 222 can be helical in nature …. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."); *see also id.*, Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [1.7].



***Id.*, Fig. 2 (annotated)**

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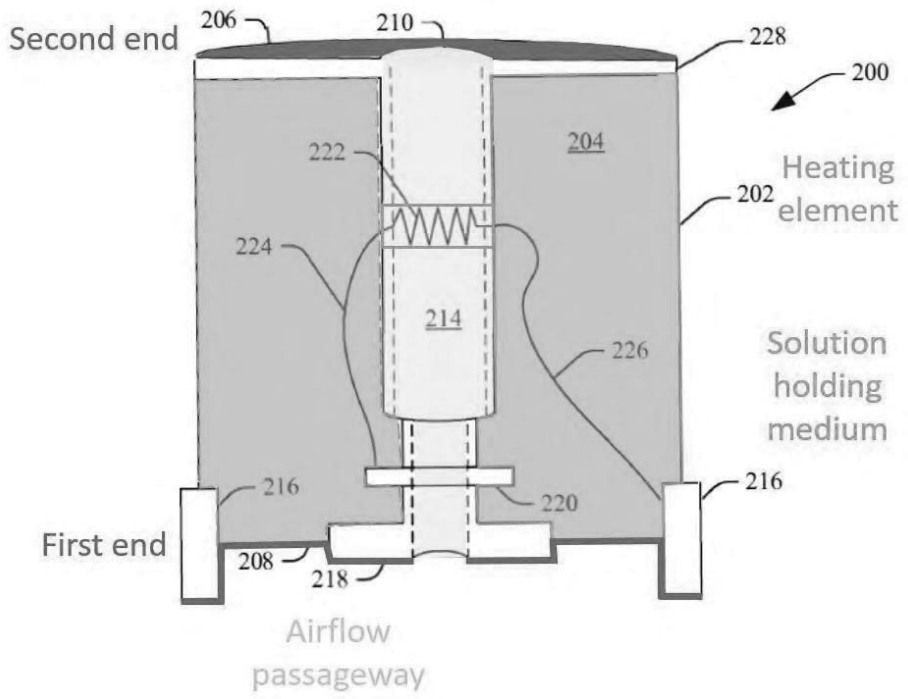
h) [1.8] wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end,

The 917 Application discloses a cartridge having a solution holding medium, wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[t]he heating element 222 is shown as residing solely in the airflow passageway 214. . . ." JX-0520 (917 Application) ¶ 32.

The cartridge shown in Figure 2 discloses claim limitation [1.8].



JX-0520 (917 Application) at Fig. 2 (annotated)

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i) [1.9] wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source.

The 917 Application discloses a cartridge having a heating element wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source.

The term "electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[t]he heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user," and "[w]hen the cartridge 200 is coupled to a power source, the conductive element 216 is electrically coupled to a negative terminal of the power source and the center post 218 (and thus the electrical isolator 220) is electrically coupled to a positive terminal of the power source. When a user draws a breath

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[redacted]

by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222." JX-0520 (917 Application) ¶ 31. The 917 Application also discloses "[t]he user places the second end 124 of the cartridge 104 in her mouth, and draws air through the airflow passageway 134." *Id.* ¶ 25; *see also id.*, Figs. 1-3.

3. 881 Patent, Claim 16

a) [16.1] A cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer, the cartridge comprising:

The 917 Application discloses a cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer.

The 917 Application discloses "various aspects generally pertaining to electronic vaporizers, and more particularly pertaining to cartridges that comprise heating elements configured to vaporize a solution," and "[t]he power source 102 and the cartridge 104 are configured to be mechanically and electrically coupled to one another." JX-0520 (917 Application) ¶¶ 4, 18; *see also id.*, ¶ 30 ("The cartridge 200 further comprises a conductive element 216, at least a portion of which resides in the interior of the housing 202. For instance, the conductive element may be metallic threads that facilitate mechanically and electrically coupling the cartridge 200 with a power source (battery)."), Figs. 1-3.

b) [16.2] a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing

The 917 Application discloses a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing.

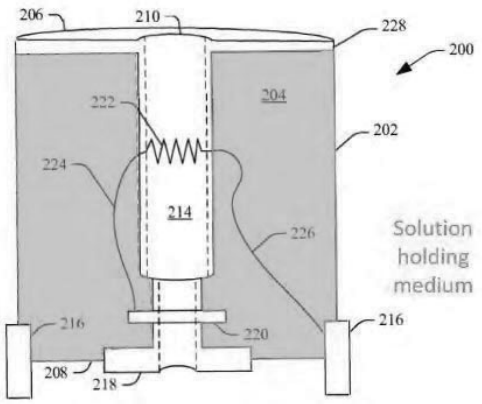
The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50.

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[redacted]

The 917 Application discloses "[t]he cartridge 104 comprises a housing 120 that has an interior." JX-0520 (917 Application) ¶ 21. The 917 Application also discloses "[a] liquid, gelatin, frozen or solid solution (solution) 128 also resides in the interior of the housing 120, wherein the solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128." *Id.* ¶ 23. Additionally, "the solution 128 may be placed in an absorbent material, such as cotton, wool, polyester, a batting material, or some other suitable absorbent material." *Id.* ¶ 27; *see also id.*, Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [16.2].



JX-0520 (917 Application) at Fig. 2 (annotated)

c) [16.3] the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end

The 917 Application discloses a cartridge having a housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end.

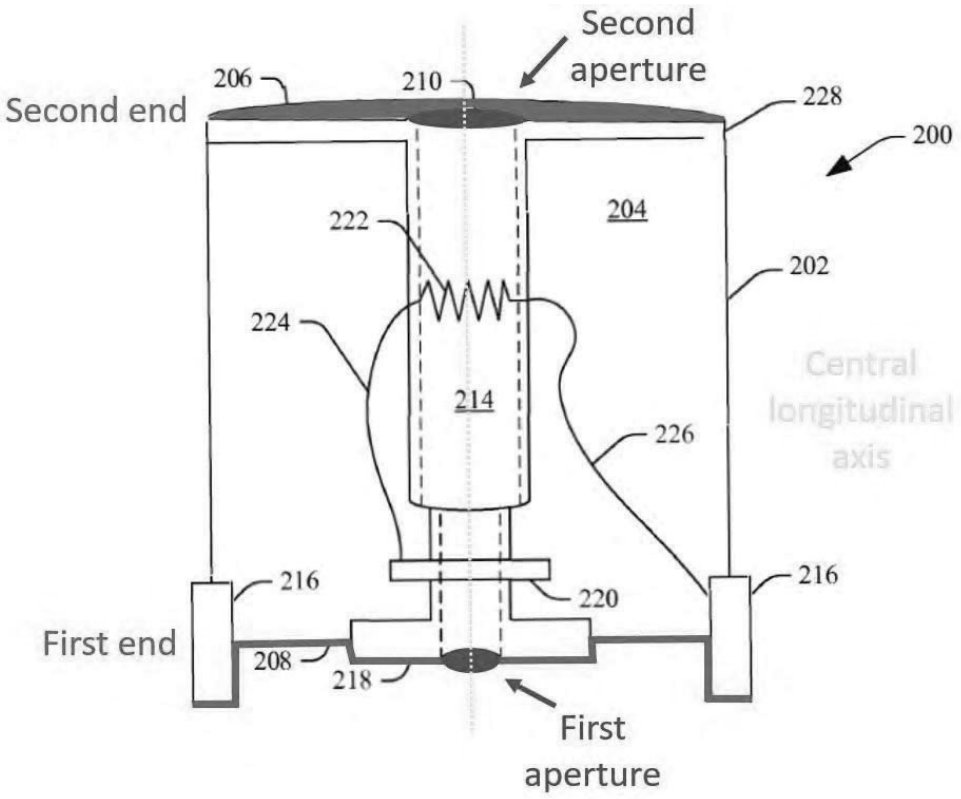
The 917 Application discloses "[t]he cartridge 104 comprises a housing 120 that has an interior" and "[t]he first end 122 of the cartridge 104 comprises a first aperture 130 that is located at approximately the center of the first end 122 of the cartridge 104." JX-0520 (917 Application)

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¶¶ 21, 24. The 917 Application also discloses "[t]he second end 124 comprises a second aperture 132 that is located at approximately the center of the second end 124 of the cartridge 104." *Id.* ¶ 24; *see also id.*, ¶¶ 28, 29, Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [16.3].



JX-0520 (917 Application) at Fig. 2 (annotated)

d) [16.4] the housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing

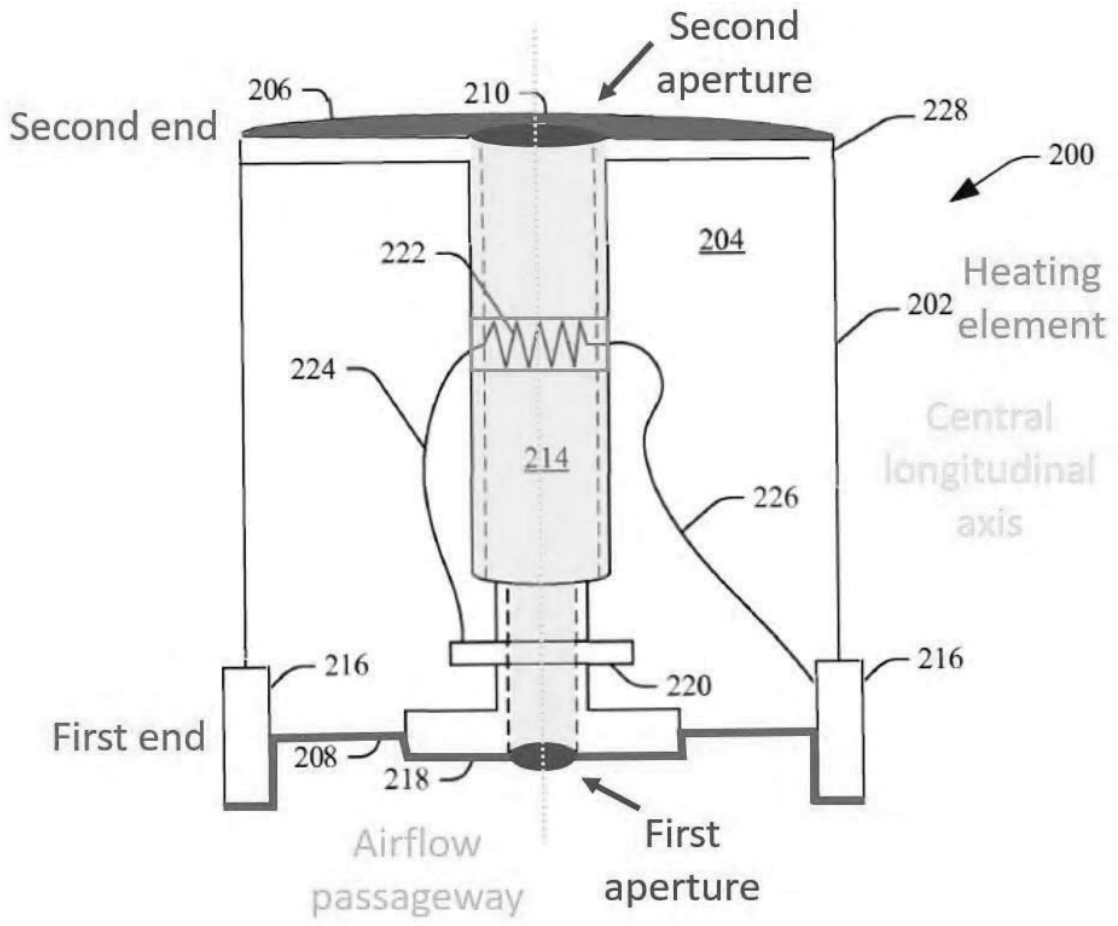
The 917 Application discloses a cartridge having a housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing.

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[redacted]

The 917 Application discloses "[t]he first end 122 of the cartridge 104 comprises a first aperture 130 that is located at approximately the center of the first end 122 of the cartridge 104." JX-0520 (917 Application) ¶ 24. The 917 Application also discloses "[t]he second end 124 comprises a second aperture 132 that is located at approximately the center of the second end 124 of the cartridge 104." *Id.* ¶ 24; *see also id.*, ¶¶ 28, 29, Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [16.4].



JX-0520 (917 Application) at Fig. 2 (annotated)

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[redacted]

e) [16.5] the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source

The 917 Application discloses a cartridge having a housing wherein the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[i]n operation, the user mechanically and electrically couples the power source 102 with the cartridge 104." JX-0520 (917 Application) ¶ 25. The 917 Application also discloses "[t]he first end 122 and the second end 124 may be or include end caps, wherein such end caps may be constructed of the polymer. In an exemplary embodiment, an end cap coupled to the first end 122 may at least be partially constructed of a conductive material, such as a conductive metal or a conductive polymer." *Id.* ¶ 27; *see also id.*, ¶ 30 ("The cartridge 200 further comprises a conductive element 216, at least a portion of which resides in the interior of the housing 202. For instance, the conductive element may be metallic threads that facilitate mechanically and electrically coupling the cartridge 200 with a power source (battery)."), Figs. 1-3.

f) [16.6] an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing

The 917 Application discloses a cartridge having housing, which includes an airflow passageway in the interior of the housing, the airflow passageway having a length extending

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[redacted]

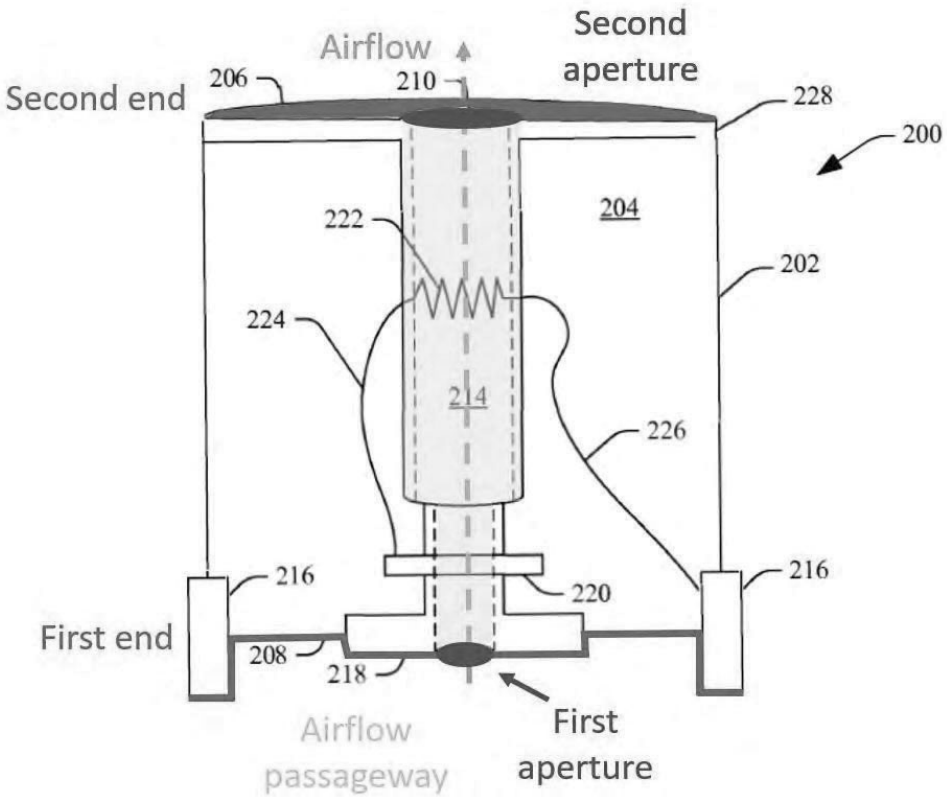
centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing.

The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The 917 Application discloses "[a]n air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200." JX-0520 (917 Application) ¶ 29; *see also id.*, Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [16.6].

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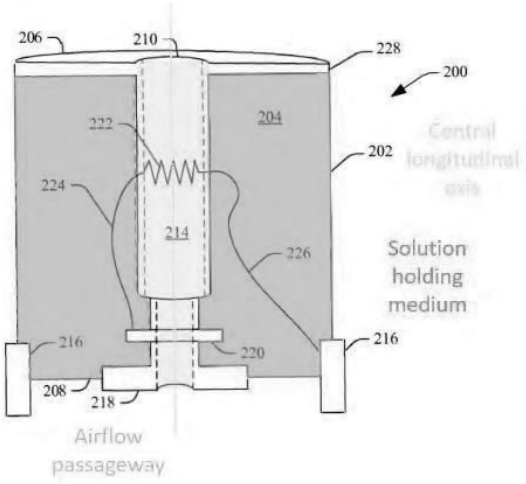
JX-0520 (917 Application) at Fig. 2 (annotated)

g) [16.7] the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway; and

The 917 Application discloses a cartridge having an airflow passageway, wherein the airflow passageway has an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway.

The cartridge shown in Figure 2 discloses claim limitation [16.7].

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***Id.*, Fig. 2 (annotated)**

h) [16.8] a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium

The 917 Application discloses a cartridge having a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

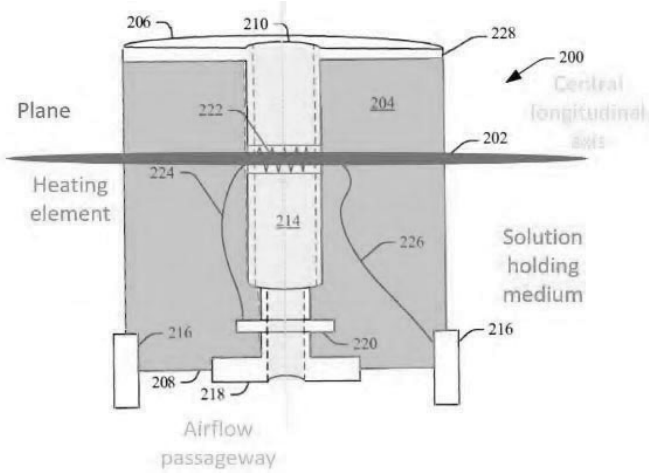
The 917 Application discloses "[t]he cartridge 200 … comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the

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housing 202 by way of conductive lines 224 and 226. The heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222." JX-0520 (917 Application) ¶ 31. The 917 Application also discloses "[a] heating element 126 resides in the interior of the housing 120" and "[t]he heating element 222 is shown as residing solely in the airflow passageway 214. . . ." *Id.* ¶¶ 22, 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."); *see also id.*, Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [16.8].



JX-0520 (917 Application) at Fig. 2 (annotated)

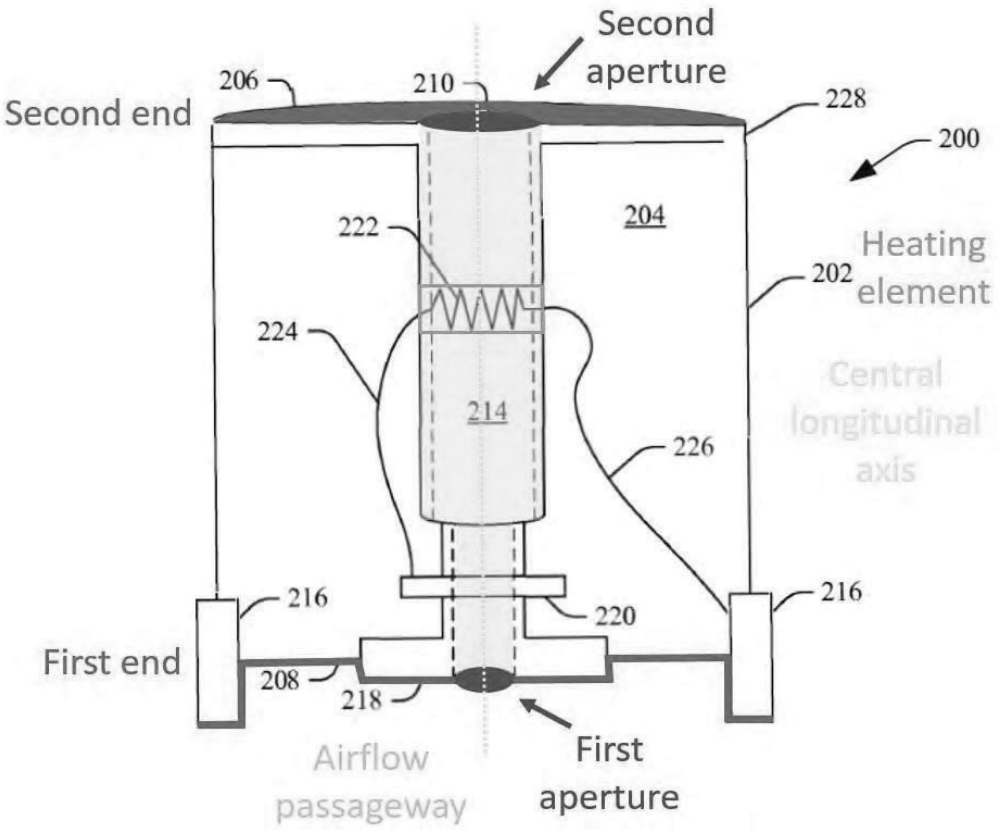
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i) [16.9] the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture

The 917 Application discloses a cartridge comprising the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture.

The cartridge shown in Figure 2 discloses claim limitation [16.9].



JX-0520 (917 Application) at Fig. 2 (annotated)

j) [16.10] the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture

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responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

The 917 Application discloses the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

The term "electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

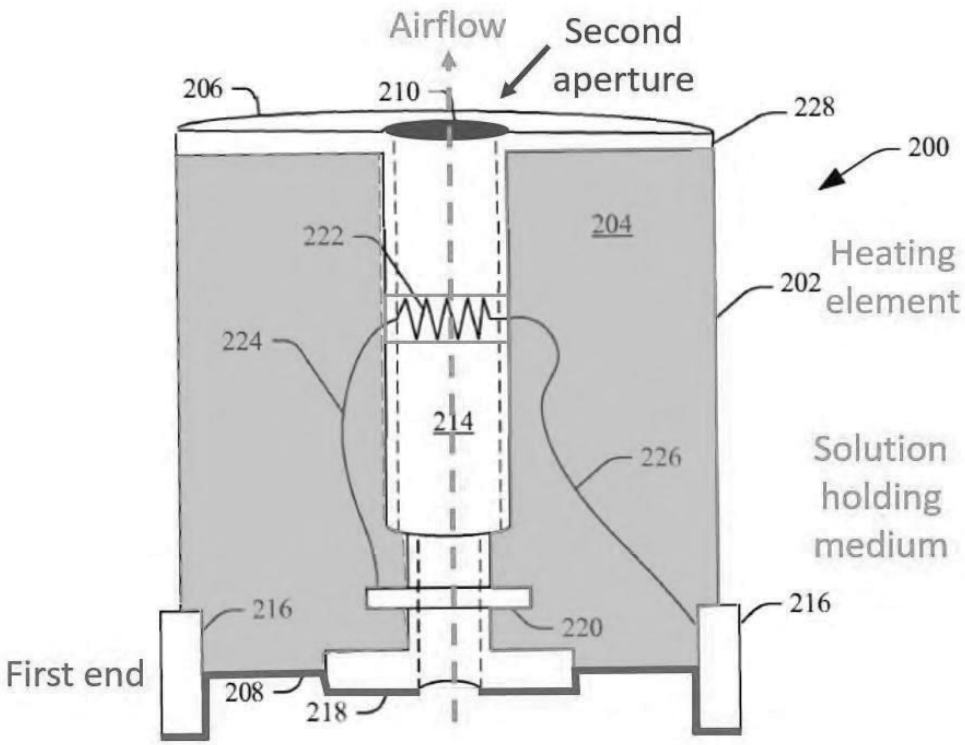
The 917 Application discloses "[t]he user places the second end 124 of the cartridge 104 in her mouth, and draws air through the airflow passageway 134." JX-0520 (917 Application) ¶ 25. The 917 Application also discloses "[t]he cartridge 200 further comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the housing 202 by way of conductive lines 224 and 226 . . . When the cartridge 200 is coupled to a power source, the conductive element 216 is electrically coupled to a negative terminal of the power source and the center post 218 (and thus the electrical isolator 220) is electrically coupled

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to a positive terminal of the power source. When a user draws a breath by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222. The heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user." *Id.* ¶ 31; *see also id.*, ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, …. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."), Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [16.10].



***Id.*, Fig. 2 (annotated)**

4. 881 Patent, Claim 18

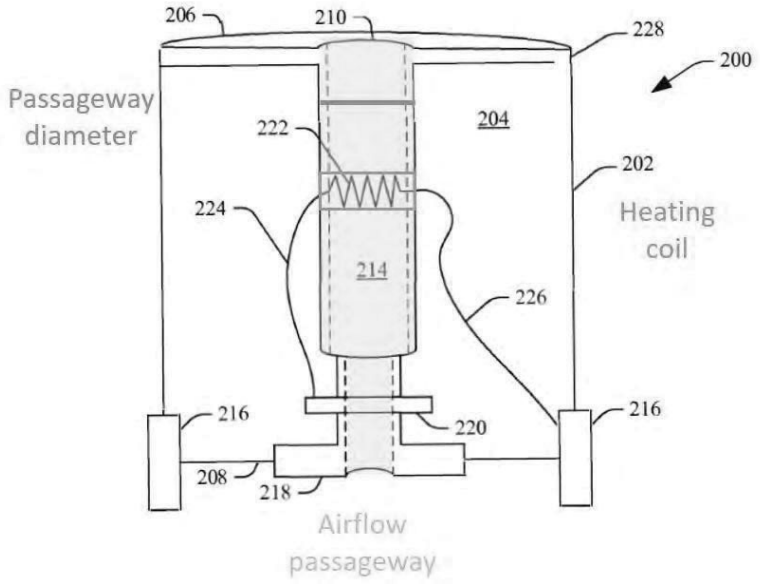
The 917 Application discloses "[t]he cartridge of claim 16, wherein the heating element is a coil having a maximum diameter and the uniform cross-sectional area of the airflow passageway

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is a circle having a diameter, the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway."

The cartridge shown in Figure 2 discloses claim 18. *See* JX-0520 (917 Application) ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. the heating element 222 can be helical in nature ….").



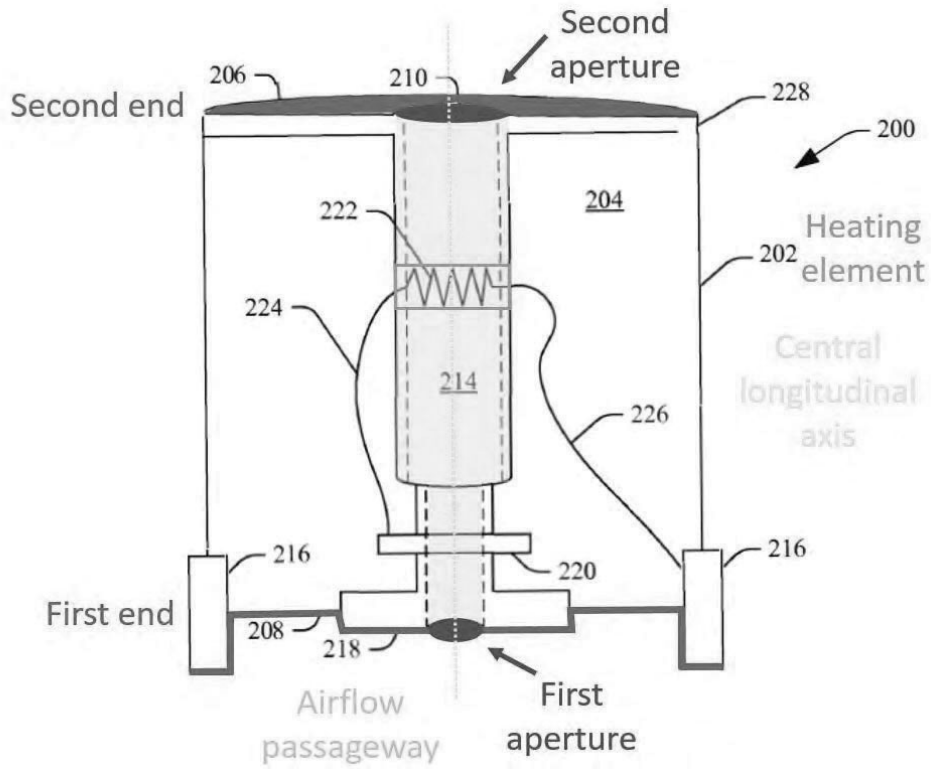
***Id.*, Fig. 2 (annotated)**

5. 881 Patent, Claim 19

The 917 Application discloses "[t]he cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing."

The cartridge shown in Figure 2 discloses claim 19.

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JX-0520 (917 Application) at Fig. 2 (annotated)

6. 881 Patent, Claim 26

The 917 Application discloses "[t]he cartridge of claim 16, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element."

The 917 Application discloses "[t]he heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222." JX-0520 (917 Application) ¶ 31; *see also id.*, Figs. 1-3.

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7. 864 Patent, Claim 1

a) [1.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:

The 917 Application discloses a cartridge configured to couple to a power source of an electronic vaporizer.

The 917 Application discloses "various aspects generally pertaining to electronic vaporizers, and more particularly pertaining to cartridges that comprise heating elements configured to vaporize a solution." JX-0520 (917 Application) ¶ 4. The 917 Application also discloses "[t]he power source 102 and the cartridge 104 are configured to be mechanically and electrically coupled to one another." *Id.* ¶ 18; *see also id.*, Figs. 1-3.

b) [1.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end

The 917 Application discloses a cartridge comprising a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end.

The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50. The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The 917 Application discloses "[t]he cartridge 104 comprises a housing 120 that has an interior." JX-0520 (917 Application) ¶ 21. The "first end 122 of the cartridge 104 comprises a first

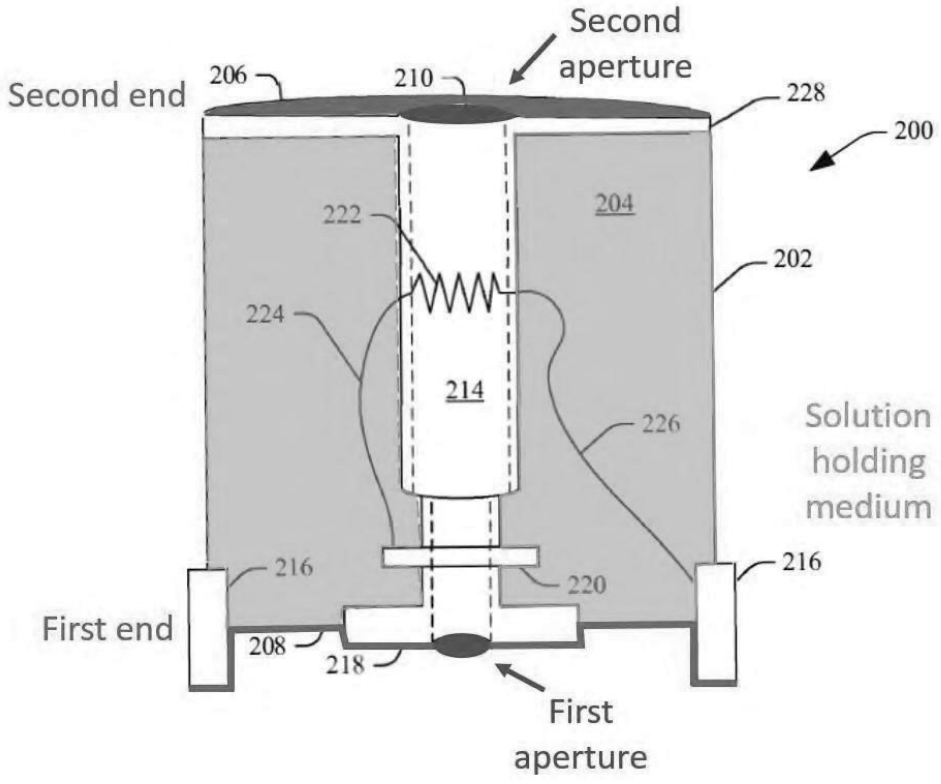
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aperture 130 that is located at approximately the center of the first end 122 of the cartridge 104. The second end 124 comprises a second aperture 132 that is located at approximately the center of the second end 124 of the cartridge 104." *Id.* ¶ 24; *see also id.*, ¶¶ 28, 29, Figs. 1-3.

The 917 Application also discloses "[a] liquid, gelatin, frozen or solid solution (solution) 128 also resides in the interior of the housing 120, wherein the solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128." JX-0520 (917 Application) ¶ 23. Additionally, "the solution 128 may be placed in an absorbent material, such as cotton, wool, polyester, a batting material, or some other suitable absorbent material." *Id.* ¶ 27.

The cartridge shown in Figure 2 discloses claim limitation [1.2].



JX-0520 (917 Application) at Fig. 2 (annotated)

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[redacted]

c) [1.3] the first end of the housing being adapted to electrically couple to the power source

The 917 Application discloses a cartridge which has the first end of the housing being adapted to electrically couple to the power source.

The 917 Application discloses "[i]n operation, the user mechanically and electrically couples the power source 102 with the cartridge 104." JX-0520 (917 Application) ¶ 25. The 917 Application also discloses "[t]he first end 122 and the second end 124 may be or include end caps, wherein such end caps may be constructed of the polymer. In an exemplary embodiment, an end cap coupled to the first end 122 may at least be partially constructed of a conductive material, such as a conductive metal or a conductive polymer." *Id.*, ¶ 27; *see also id.*, ¶ 27 ("The cartridge 200 further comprises a conductive element 216, at least a portion of which resides in the interior of the housing 202. For instance, the conductive element may be metallic threads that facilitate mechanically and electrically coupling the cartridge 200 with a power source (battery)…. In an example, the center post 218 can be formed of a conductive material, and may be constructed as being a portion of an end cap."), 31 ("When the cartridge 200 is coupled to a power source, the conductive element 216 is electrically coupled to a negative terminal of the power source and the center post 218 (and thus the electrical isolator 220) is electrically coupled to a positive terminal of the power source."), Figs. 1-3.

d) [1.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture

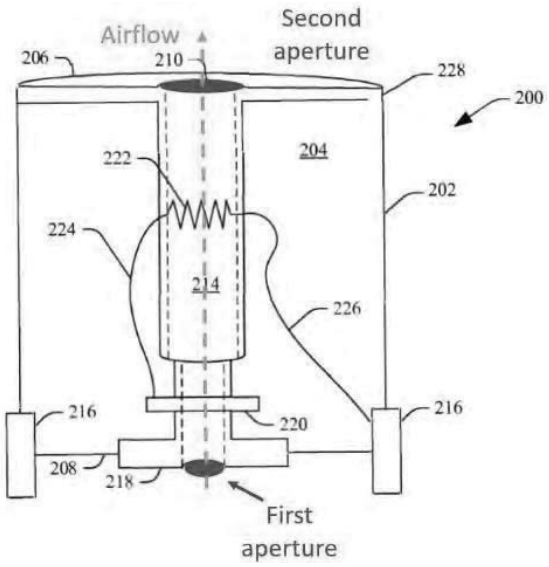
The 917 Application discloses a cartridge which has the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture.

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The 917 Application discloses "[a]n airflow passageway 134 extends between the first aperture 130 and the second aperture 132 axially proximate to the center of the housing 120." JX-0520 (917 Application) ¶ 24; *see also id.*, ¶ 29 ("An air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."), Figs. 1-3.

The cartridge shown in Figure 2 discloses claim limitation [1.4].



JX-0520 (917 Application) at Fig. 2 (annotated)

e) [1.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow

The 917 Application discloses a cartridge which has a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow.

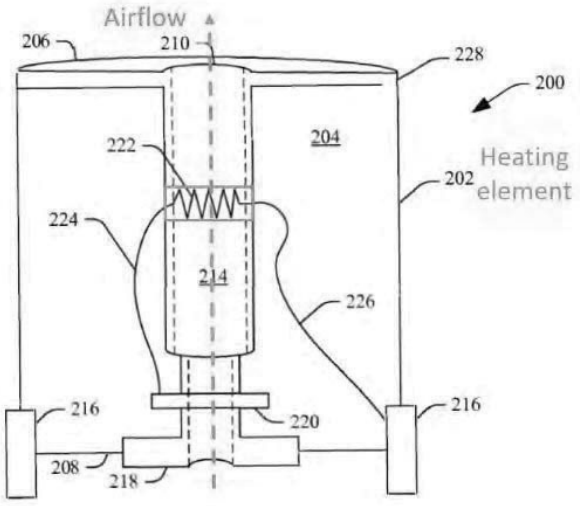
The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17.

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The 917 Application discloses "[t]he cartridge 200 … comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the housing 202 by way of conductive lines 224 and 226. The heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222." JX-0520 (917 Application) ¶ 31; *see also id.* ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. the heating element 222 can be helical in nature …. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration.").

The cartridge shown in Figure 2 discloses claim limitation [1.5].



JX-0520 (917 Application) at Fig. 2 (annotated)

f) [1.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the

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[redacted]

airflow, the heating element being responsive to electrical power received from the power source; and

The 917 Application discloses a cartridge having a heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source.

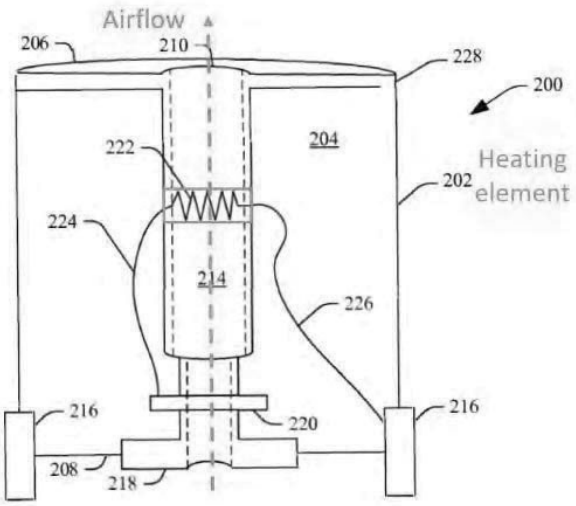
The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The 917 Application discloses "[w]hen the cartridge 200 is coupled to a power source, the conductive element 216 is electrically coupled to a negative terminal of the power source and the center post 218 (and thus the electrical isolator 220) is electrically coupled to a positive terminal of the power source. When a user draws a breath by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222," and "[t]he heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user." JX-0520 (917 Application) ¶ 31; *see also id.* ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."). The 917 Application also

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[redacted]

discloses "[t]he user places the second end 124 of the cartridge 104 in her mouth, and draws air through the airflow passageway 134." *Id.* ¶ 25; *see also id.*, Figs. 1-3.



***Id.*, Fig. 2 (annotated)**

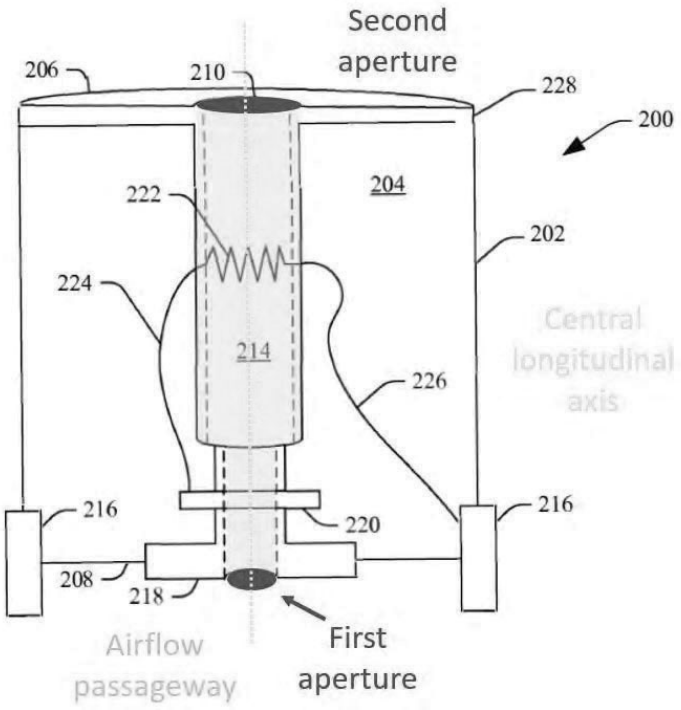
g) [1.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture.

The 917 Application discloses a cartridge having an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture.

The 917 Application discloses "[a]n air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200." JX-0520 (917 Application) ¶ 29; *see also id.*, Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [1.7].

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JX-0520 (917 Application) at Fig. 2 (annotated)

8. 864 Patent, Claim 2

The 917 Application discloses "[t]he cartridge of claim 1, further in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery."

The 917 Application discloses "[t]he cartridge 200 further comprises a conductive element 216, at least a portion of which resides in the interior of the housing 202. For instance, the conductive element may be metallic threads that facilitate mechanically and electrically coupling the cartridge 200 with a power source (battery)." JX-0520 (917 Application) ¶ 30; *see also id.*, Figs. 1-3.

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9. 864 Patent, Claim 9

a) [9.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.1] above.

b) [9.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.2] above.

c) [9.3] the first end of the housing being adapted to electrically couple to the power source

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.3] above.

d) [9.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.4] above.

e) [9.5] a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.5] above.

f) [9.6] the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the

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[redacted]

airflow, the heating element being responsive to electrical power received from the power source

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.6] above.

g) [9.7] wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

The 917 Application discloses a cartridge wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

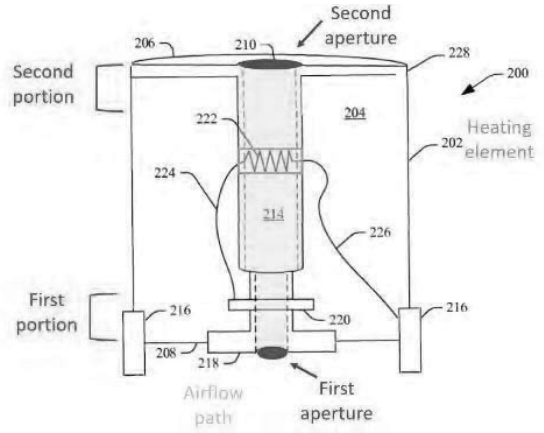
The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The 917 Application discloses "[a]n air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200." JX-0520 (917 Application) ¶ 29; *see also id.*, Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [9.7].

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JX-0520 (917 Application) at Fig. 2 (annotated)

10. 864 Patent, Claim 10

As will be demonstrated at the hearing, the 917 Application discloses this claim. *See* Claim 2 above.

11. 864 Patent, Claim 12

The 917 Application discloses "[t]he cartridge of claim 9, wherein the heating element includes a wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized."

The 917 Application discloses "[t]he heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222." JX-0520 (917 Application) ¶ 31; *see also id.*, Figs. 1-3.

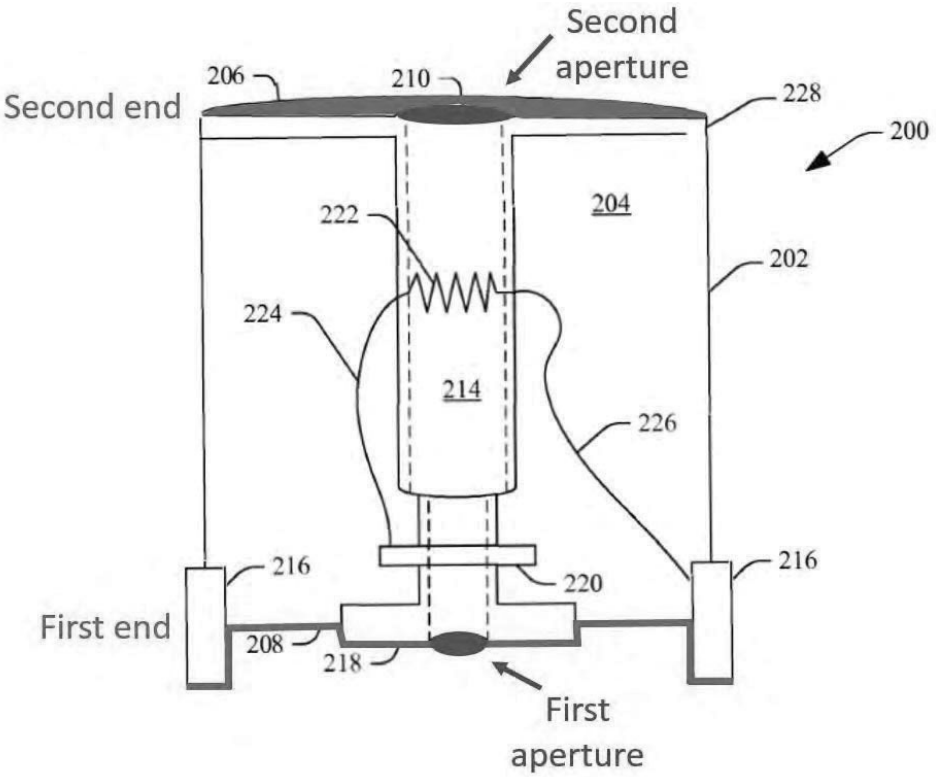
12. 864 Patent, Claim 13

The 917 Application discloses "[t]he cartridge of claim 9, wherein the first aperture proximate the first end is smaller than the second aperture proximate the second end."

The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The cartridge shown in Figure 2 discloses claim 13.

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JX-0520 (917 Application) at Fig. 2 (annotated)

13. 864 Patent, Claim 15

As will be demonstrated at the hearing, the 917 Application discloses this claim. *See* Limitation [1.7] above.

14. 864 Patent, Claim 16

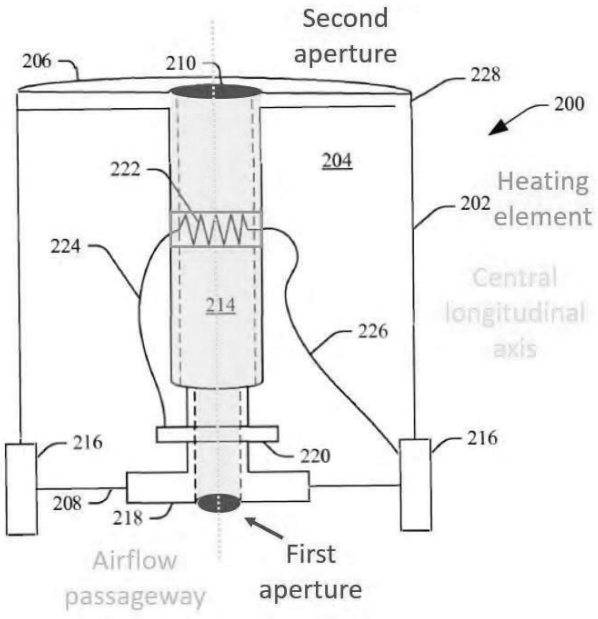
The 917 Application discloses "[t]he cartridge of claim 15, wherein a majority of the portion of the airflow passageway has a substantially uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing between the heating element and the second aperture."

The 917 Application discloses "[a]n airflow passageway 134 extends between the first aperture 130 and the second aperture 132 axially proximate to the center of the housing 120." JX-0520 (917 Application) ¶ 24; *see also id.*, Figs. 1-3.

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[redacted]

The cartridge shown in Figure 2 discloses claim 16.



JX-0520 (917 Application) at Fig. 2 (annotated)

15. 864 Patent, Claim 20

The 917 Application discloses "[t]he cartridge of claim 9, wherein the heating element includes a material that when powered by the power source is adapted to vaporize the solution brought into contact with the heating element."

The 917 Application discloses "[t]he heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user." JX-0520 (917 Application) ¶ 31; *see also id.*, Figs. 1-3.

16. 864 Patent, Claim 25

a) [25.1] A cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising:

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.1] above.

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b) [25.2] a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end

The 917 Application discloses a cartridge comprising a housing having an interior and a solution holding medium adapted to hold a solution, the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end.

The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50. The term "proximate" has been construed "as meaning at, near, or close to, which in the context of the '864 patent claims identifies relative positioning." CC Order at 6-13.

The 917 Application discloses "[t]he cartridge 104 comprises a housing 120 that has an interior." JX-0520 (917 Application) ¶ 21. The "first end 122 of the cartridge 104 comprises a first aperture 130 that is located at approximately the center of the first end 122 of the cartridge 104. The second end 124 comprises a second aperture 132 that is located at approximately the center of the second end 124 of the cartridge 104." *Id.* ¶ 24; *see also id.*, ¶¶ 28, 29, Figs. 1-3.

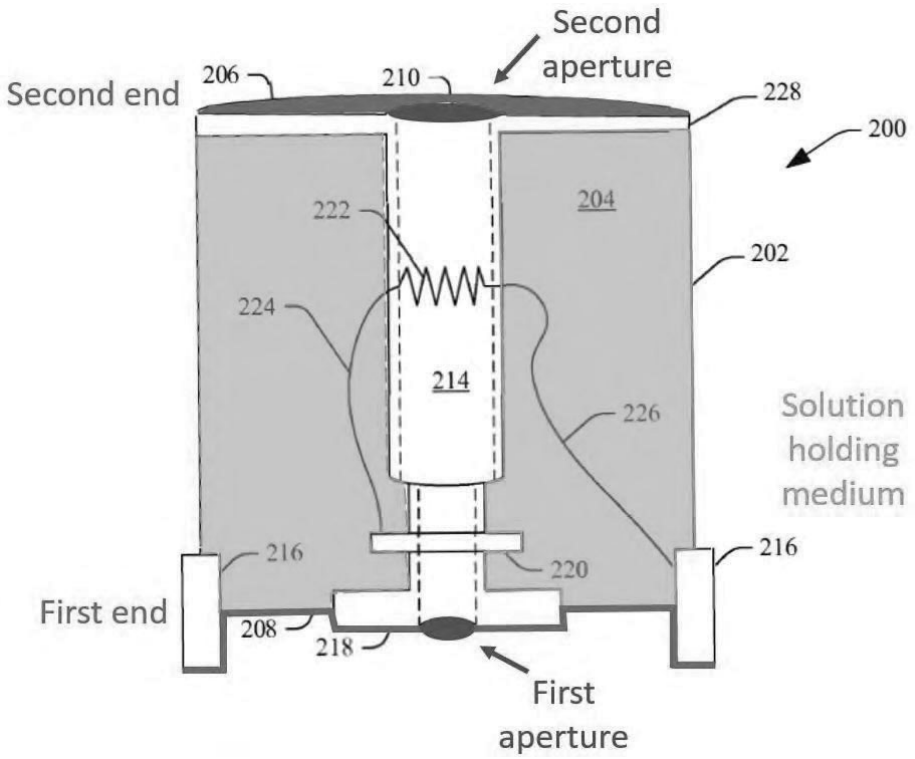
The 917 Application also discloses "[a] liquid, gelatin, frozen or solid solution (solution) 128 also resides in the interior of the housing 120, wherein the solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128." JX-0520 (917 Application) ¶ 23. Additionally, "the solution 128 may be placed

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in an absorbent material, such as cotton, wool, polyester, a batting material, or some other suitable absorbent material." *Id.* ¶ 27.

The cartridge shown in Figure 2 discloses claim limitation [25.2].



JX-052- (917 Application) at Fig. 2 (annotated)

c) [25.3] the first end of the housing being adapted to electrically couple to the power source

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.3] above.

d) [25.4] the first aperture and the second aperture being in communication with one another to permit an airflow through the housing

As will be demonstrated at the hearing, the 917 Application discloses this limitation. *See* Limitation [1.4] above.

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[redacted]

e) [25.5] a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer

The 917 Application discloses a cartridge comprising a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

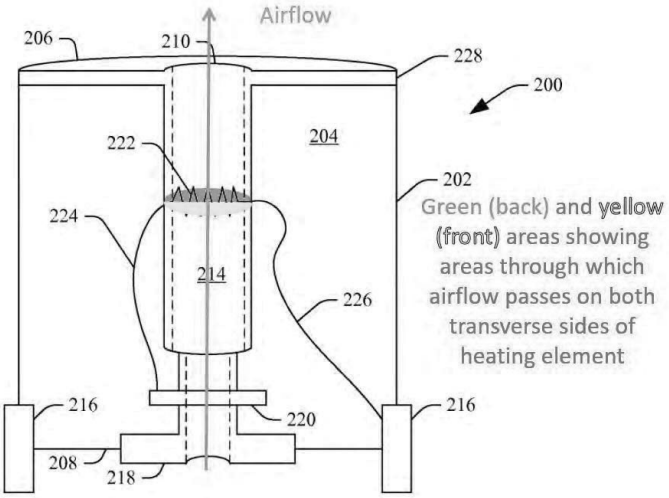
The 917 Application discloses "[a] heating element 126 resides in the interior of the housing 120," and "the heating element 222 is shown as residing solely in the airflow passageway 214. . . ." JX-0520 (917 Application) ¶¶ 22, 32; *see also id.*, ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."), ¶ 31 ("[t]he cartridge 200 … comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the housing 202 by way of conductive lines 224 and 226. The heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222."), ¶ 32 ("While the heating element 222 is shown

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as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. the heating element 222 can be helical in nature ….”), Figs. 1, 3.

The cartridge shown in Figure 2 discloses claim limitation [25.5].



***Id.*, Fig. 2 (annotated)**

f) [25.6] the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and

The 917 Application discloses a cartridge comprising the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source.

The term “the portion of the solution” has been construed “as having its plain and ordinary meaning, that is, the words of the claims.” CC Order at 21-25. The term “configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an

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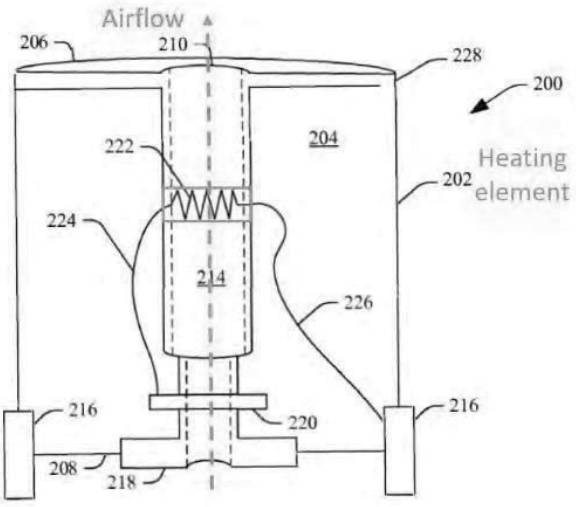
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individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The 917 Application discloses "[w]hen the cartridge 200 is coupled to a power source, the conductive element 216 is electrically coupled to a negative terminal of the power source and the center post 218 (and thus the electrical isolator 220) is electrically coupled to a positive terminal of the power source. When a user draws a breath by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222," and "[t]he heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user." JX-0520 (917 Application) ¶ 31; *see also id.* ¶ 32 ("While the heating element 222 is shown as residing solely in the airflow passageway 214, it is to be understood that various other configurations of the heating element 222 with respect to the airflow passageway are contemplated and are intended to fall under the scope of the hereto-appended claims…. Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration."). The 917 Application also discloses "[t]he user places the second end 124 of the cartridge 104 in her mouth, and draws air through the airflow passageway 134." *Id.* ¶ 25; *see also id.*, Figs. 1-3.

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***Id.*, Fig. 2 (annotated)**

g) [25.7] an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing.

The 917 Application discloses a cartridge comprising an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing.

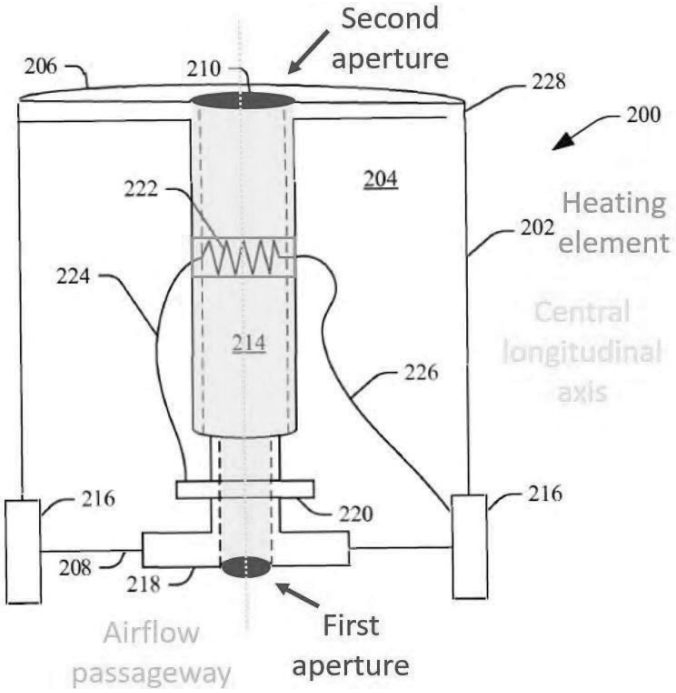
The 917 Application discloses "[a]n air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200." JX-0520 (917 Application) ¶ 29. Additionally, "[a] heating element 126 resides in the interior of the housing 120," and "[t]he heating element 222 is shown as residing solely in the airflow passageway 214. . . ." *Id.* ¶¶ 22, 32; *see also id.*, Figs. 1, 3. The 917 Application also discloses

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"[a]n electrical isolator 220 is coupled to the center post 218 and extends outward from the center post 218. For instance, the electrical isolator 220 may be an O-ring or other suitable isolator." *Id.* ¶ 30.

The cartridge shown in Figure 2 discloses claim limitation [25.7].



***Id.*, Fig. 2 (annotated)**

17. 864 Patent, Claim 26

As will be demonstrated at the hearing, the 917 Application discloses this claim. *See* Claim 2 above.

18. Respondent's Contentions Will Not Demonstrate a Lack of Priority

As set forth above, and as will be explained at the hearing, the 917 Application provides written description support for the asserted claims of the Asserted Patents. Respondent will be unable to demonstrate that any of the elements of the claimed inventions of the Asserted Patents are not supported by the disclosure in the 917 Application. Each of Respondent's contentions and

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the opinions of its expert, Mr. Leinsing, opinions are addressed below. Moreover, as will be demonstrated at the hearing, Respondent's contentions and Mr. Leinsing's opinions regarding the 819 Provisional and the 097 Provisional are incorrect to the extent they are inconsistent with the analysis of the 819 Provisional and the 097 Provisional set forth above. *See* CX-2951.0189. The asserted claims of the Asserted Patents are fully supported in the 917 Application.

Respondent's expert, Mr. Leinsing, contends that "each and every claim that includes one or more of [the following] elements cannot properly claim priority to the '917 Application.:" (1) "a first aperture proximate the first end of the housing;" (2) "a second aperture proximate the second end of the housing;" (3) "a first portion of the airflow path proximate the first aperture;" (4) "a second portion of the airflow path proximate to the second aperture;" (5) "a heating element;" (6) "the heating element extending transversely to a central longitudinal axis of the housing;" (7) "the heating element extends transversely across the airflow passageway;" (8) "the airflow through the passageway passes on both transverse sides of the heating element;" (9) "the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture;" (10) "the heating element being configured to vaporize at least a portion of the solution held in the solution holding medium for oral provision to an individual in the airflow from the first aperture to the second aperture;" (11) "solution holding medium;" (12) "solution holding medium reservoir;" (13) "airflow passageway;" and (14) "cross-section area and exterior adjacent to the solution holding medium." JX-0632C (Leinsing Opening Report) ¶ 103. Other than in paragraphs 105 – 161 of his report, Mr. Leinsing provides no explanation for why the elements his lists in paragraph 103 purportedly do not have adequate written description support in the 917

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Application. Respondent reserves the right to supplement its contentions if Mr. Leinsing identifies any additional reasoning outside of paragraph 105 – 161.

a) Cross-Sectional Area and Exterior Adjacent to Solution-Holding Medium

Respondent contends that the 917 Application does not support the limitations of claim 16 of the 881 Patent regarding "cross-sectional areas and/or the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway." CX-2951.0192; JX-0632C (Leinsing Opening Report) ¶ 105. Specifically, Respondent identifies the following limitations:

- 881 Patent, [16.4]: … the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing, …
- 881 Patent, [16.7]: the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway;
- 881 Patent, [16.9]: the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture,

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations. Respondent's basis for saying there is not disclosure is that the "'917 Application is completely silent as to cross-sectional areas, airflow passageway being adjacent to a solution holding medium, and sizing of the second aperture." CX-2951.0192; *see also* JX-0632C (Leinsing Opening Report) ¶ 108. But Respondent ignores the written description evidence set forth above, including that the Figure 2, which shows an airflow passageway 214 extending between apertures 212 and 214, which correspond to the first and second apertures. The evidence will show a POSITA would understand that the depicted airflow

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passageway and apertures would have cross-sectional areas measured perpendicular to the longitudinal axis. *See* CX-2157C (Vallee Opening Report) ¶ 648. The airflow passageway 214 has an exterior adjacent to the solution holding medium 204 along a majority of the length of the airflow passageway. The airflow passageway 214 is shown with two diameters, and the larger diameter corresponds to the majority of the length of the airflow passageway 214. Also, the diameter (and thus the cross-sectional area) of the airflow passageway 214 between the heating element 222 and aperture 210 (which corresponds to the claimed second aperture) is larger than the diameter (and thus the cross-sectional area) of aperture 212 (which corresponds to the claimed first aperture.

Respondent also contends, through its expert Mr. Leinsing, that because "a label for the second aperture 212 in Figure 2 was added on February 25, 2019, there is insufficient written description until at least February 26, 2019." CX-2811C (Leinsing Rebuttal Report) ¶ 221. Although Figure 2 in the 917 Application does not label aperture 212, the evidence will show that a POSITA would have understood that the aperture at the bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See* CX-2157C (Vallee Opening Report) ¶ 681. Aside from aperture 210 in Figure 2, the only other aperture in the airflow passageway is the aperture in center post 218—this aperture is described by the 917 Application as aperture 212. JX-0520 (917 Application) ¶ 29 ("An airflow passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."). In support of his incorrect opinion, Mr. Leinsing applies an incorrect interpretation of the 917 Application's disclosure, saying "that the cartridge 200 includes a center post that *extends out* from the second end 208 of the cartridge 200." CX-2811C (Leinsing Rebuttal Report) ¶ 221. In actuality, the 917 Application discloses that the center post 218 begins

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at the second end 208 (meaning that the bottom surface of the center post 218 is part of the second end 208) and extends upward to the wider portion of the airflow passageway 214: "The cartridge further comprises ***a center post 218 that extends from the second end 208 of the cartridge 202 to the airflow passageway 214***, wherein the center post 218 is hollow to allow the airflow passageway 214 to extend through the center post 218 to the second aperture 212." JX-0520 (917 Application) ¶ 30 (emphasis added). The remainder of the sentence confirms this correct interpretation, signaling that the hollow portion of the center post 218 extends all the way to the bottom surface of the center post 218 to the second aperture 212. Heating Element Extends Transversely, Both Transverse Sides, Plane Perpendicular to Longitudinal Axis

Respondent contends that the 917 Application does not support the limitations concerning "(a) a transverse heating element extending across the airflow passageway or transversely across a central longitudinal axis of the housing, (b) airflow through the passageway passes on both transverse sides of the heating element, or (c) a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and a solution holding medium." CX-2951.0193. Specifically, Respondent identifies the following limitations:

- 881 Patent, [16.8]: a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium
- 864 Patent, [1.5]: … the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow
- 864 Patent, [9.5]: … the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow
- 864 Patent, [25.5]: … the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely

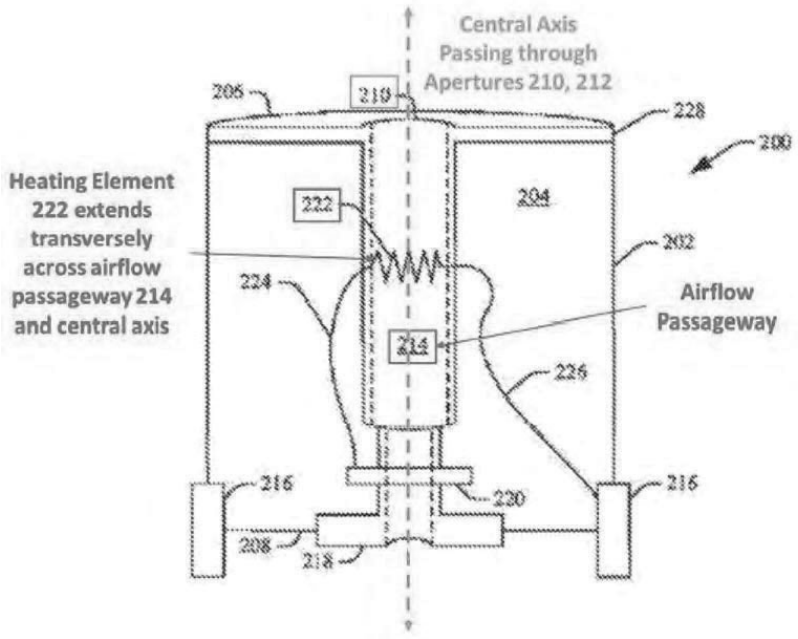
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[redacted]

to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations.

This configuration of the heating element relative to the airflow passageway or longitudinal axis of the housing is described and illustrated in the specification of the 917 Application. In particular, the specification describes that the cartridge can comprise a housing 202, apertures 210 and 212, and "that a central axis of the cartridge 200 passes through both apertures 210 and 212." JX-0520 (917 Application) ¶ 29. The specification of the 917 Application further describes that "an air passageway 214 begins at the first aperture 210 and extends to the second aperture 212." JX-0520 ¶ 29. As shown below, Figure 2 of the 917 Application illustrates that the heating element 222 extends crosswise or side to side (*i.e.*, transversely) relative to the central axis and the airflow passageway 214:



JX-0520 (917 Application) at Fig. 2 (annotations in color)

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As shown above, the heating element 222 is oriented substantially perpendicular to the central axis. One can see this by drawing a line through the points where the connecting leads 224 and 226 attach to the heating element 222 and observing the orthogonal nature of that line relative to the central axis. Although Respondent contends that "there is no disclosure of … a central axis," the evidence will show a POSITA would understand that the central axis runs up the center of the cartridge (depicted in blue, above). *See, e.g.*, JX-0520 (917 Application) ¶ 29 ("the first aperture 210 and the second aperture 212 are positioned at approximately the centers of the first and second ends 206 and 208, respectively, ***such that a central axis of the cartridge 200 passes through both apertures 210 and 212***.") (emphasis added); *see also* CX-2157C (Vallee Opening Report) ¶ 653.

In view of these disclosures, a POSITA would have readily recognized that the resistive heating element 222 is extending transversely across the airflow passageway 224, which supports the aforementioned claim limitations. *See* CX-2157C (Vallee Opening Report) ¶ 654. Therefore, the 917 Application provides support for a transverse heating element.

In view of the 917 Application's teachings of a transverse heating element, when airflow in the Figure 2 embodiment passes from the first aperture 212 to the second aperture 210 encounters the heating element, a POSITA would understand that the airflow would separate and pass on either transverse side of the heating element (*i.e.*, the sides that extend crosswise relative to the airflow passageway). *See* CX-2157C (Vallee Opening Report) ¶ 655. Specifically, in the orientation of Figure 2 of the 917 Application, the evidence will show a POSITA would recognize that the airflow would pass over the transverse side in front of heating element 222, as well as the transverse side behind heating element 222 (which is not visible in Figure 2). If one were to take a top down view of the configuration in Figure 2 (*i.e.*, looking from one aperture 210 toward the

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other aperture 212 for example), the transverse sides of the heating element would be positioned as shown below:



The 917 Application also explains that "the heating element 22 is shown as residing ***solely in the airflow passageway 214*** …." JX-0520 (917 Application) ¶ 32. It also says: "it is readily recognized that airflow may pass directly over the heating element …." JX-0520 (917 Application) ¶ 32. In view of these disclosures and Figure 2, a POSITA would have understood that the resistive heating element 222 extends transversely across the airflow passageway (as shown) and that it is solely within the passageway such that airflow passes over the heating element. The air would have to pass on the front and back transverse sides. *See* CX-2157C (Vallee Opening Report) ¶ 656.

Respondent contends that "[n]othing in the original disclosure would inform a POSITA how to identify transverse sides of the disclosed heating element or sides air passes over." CX-2951.0197. This is not true, as set forth above. Respondent also contends that "a POSITA would be unable to understand how to identify sides of a helical coil as a helical coil does not have sides," "a POSITA would not be able to identify any particular portions of a helical coil that air passes

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over," and that "[a]ir would pass over almost all portions of a helical coil because it is hollow and has gaps." *Id.*[6] Respondent ignores the 917 Application's teaching that "[t]he heating element 222 can comprise wicking material …." JX-0520 (917 Application) ¶ 31. The evidence will show a POSITA would have understood that such a wick and coil arrangement would eliminate the gaps and hollow nature of the heating element. *See* CX-2157C (Vallee Opening Report) ¶ 657. Furthermore, a POSITA, as set forth above, would understand both transverse sides to mean two sides of the heating element over which the air flows, regardless if the heating element is cylindrical. *See id.*

Respondent also cites the prosecution history of the 296 Application and 927 Application in support of its arguments. CX-2951.0197-.0198. The evidence will show that these cited papers support Respondent's position. First, the prosecution for these applications is ongoing, and the Examiner may retract his positions. Second, the Examiner for the 296 Application stated that "the drawings show a heating element generally transversely mounted …." CX-2840.0235. This shows that the Examiner understood transversely and that it is described in Figure 2. And lastly, while the Examiner currently questions support for a heating element that is exactly "perpendicular to the longitudinal axis of the housing," or support for airflow that "splits into at least two airflow paths," the patent office did not question the support for a transversely oriented heating element, airflow passing on both transverse sides, or a heating coil, as recited in the issued, asserted claims.

Respondent also contends, through its expert Mr. Leinsing, that because "there is no disclosure of such a central axis until the label for the second aperture 212 in Figure 2 was added, which occurred on February 26, 2019." CX-2811C (Leinsing Rebuttal Report) ¶ 69. Although

[6] The 917 Application provides support for a heating coil, or that heating element 222 is not a coil. *See, e.g.*, JX-0520 (917 Application) ¶ 32 ("… the heating element 222 can be helical in nature ….").

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Figure 2 in the 917 Application does not label aperture 212, the evidence will show that a POSITA would have understood that the aperture at the bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See* CX-2157C (Vallee Opening Report) ¶ 681. Aside from aperture 210 in Figure 2, the only other aperture in the airflow passageway is the aperture in center post 218—this aperture is described by the 917 Application as aperture 212, and the same sentence also describes the central axis of the cartridge 200. JX-0520 (917 Application) ¶ 29 ("An airflow passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."). In support of his incorrect opinion, Mr. Leinsing applies an incorrect interpretation of the 917 Application's disclosure, saying "that the cartridge 200 includes a center post that *extends out* from the second end 208 of the cartridge 200." CX-2811C (Leinsing Rebuttal Report) ¶ 221. In actuality, the 917 Application discloses that the center post 218 begins at the second end 208 (meaning that the bottom surface of the center post 218 is part of the second end 208) and extends upward to the wider portion of the airflow passageway 214: "The cartridge further comprises ***a center post 218 that extends from the second end 208 of the cartridge 202 to the airflow passageway 214***, wherein the center post 218 is hollow to allow the airflow passageway 214 to extend through the center post 218 to the second aperture 212." JX-0520 (917 Application) ¶ 30 (emphasis added). The remainder of the sentence confirms this correct interpretation, signaling that the hollow portion of the center post 218 extends all the way to the bottom surface of the center post 218 to the second aperture 212.

Respondent, through its expert, also contends that the 917 Application does not provide written description support for a plane passing through the solution holding medium and heating element, simply the 917 Application does not describe a literal plane or depict one. CX-2811C

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(Leinsing Rebuttal Report) ¶¶ 91-98. As the evidence will show, however, a POSITA understands what a plane is and what it means to have the solution holding medium and heating element existing in the same plane perpendicular to the central longitudinal axis of a housing. As explained above, Figure 2 depicts this configuration. *See* Section IV.D.3.h).

b) Transversely, Both Transverse Sides, Plane Perpendicular To Longitudinal Axis

Respondent contends that the 917 Application does not support the limitations concerning: "(a) a transverse heating element extending across the airflow passageway or transversely across a central longitudinal axis of the housing, (b) airflow through the passageway pass[ing] on both transverse sides of the heating element, or (c) a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and a solution holding medium." CX-2951.0181-.0182; *see also* JX-0632C (Leinsing Opening Report) ¶ 109. Specifically, Respondent identifies the following limitations:

- 881 Patent, [1.7]: wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element
- 881 Patent, [16.8]: a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium
- 864 Patent, [1.5]: … the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow
- 864 Patent, [9.5]: … the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow
- 864 Patent, [25.5]: … the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely

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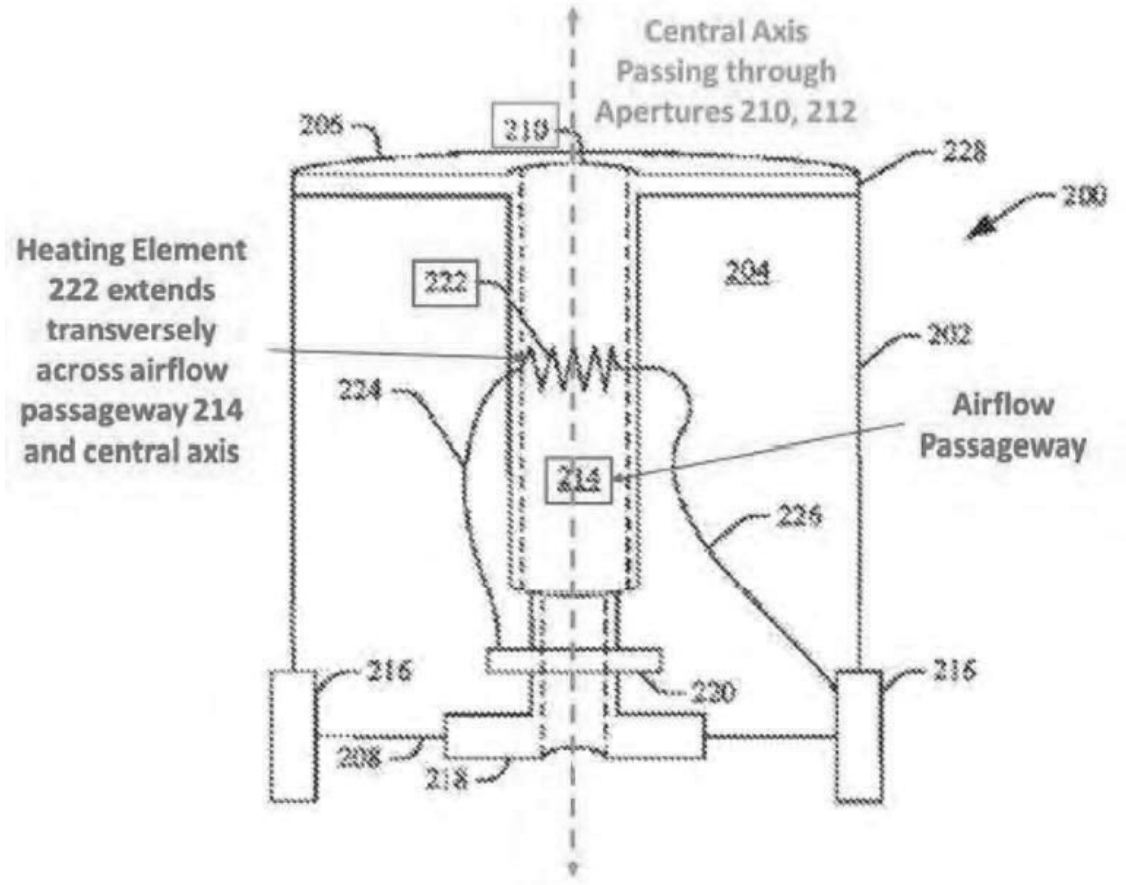
to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse dies of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

The evidence will show that in the context of the claims "transversely" can include a heating element that is crosswise, or substantially perpendicular to the central longitudinal axis or airflow passageway. This configuration of the heating element relative to the airflow passageway or longitudinal axis of the housing is described and illustrated in the specification of the 917 Application. In particular, the specification describes that the cartridge can comprise a housing 202, apertures 210 and 212, and "that a central axis of the cartridge 200 passes through both apertures 210 and 212." JX-0520 (917 Application) ¶ 29. The specification of the 917 Application further describes that "[a]n air passageway 214 begins at the first aperture 210 and extends to the second aperture 212." As shown below, Figure 2 of the 917 Application illustrates that the heating element 222 extends crosswise or side to side (*i.e.*, transversely) relative to the central axis and the airflow passageway 214:

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JX-0520 (917 Application) at Fig. 2 (annotations in color)

As shown above, the heating element 222 is oriented crosswise, or substantially perpendicular to the central axis. One can see this by drawing a line through the points where the connecting leads 224 and 226 attach to the heating element 222 and observing the orthogonal nature of that line relative to the central axis. Although Respondent contends that "there is no disclosure of … a central axis," the evidence will show that a POSITA would understand that the central axis runs up the center of the cartridge as depicted in blue above. *See, e.g.*, JX-0520 (917 Application) ¶ 29 ("the first aperture 210 and the second aperture 212 are positioned at

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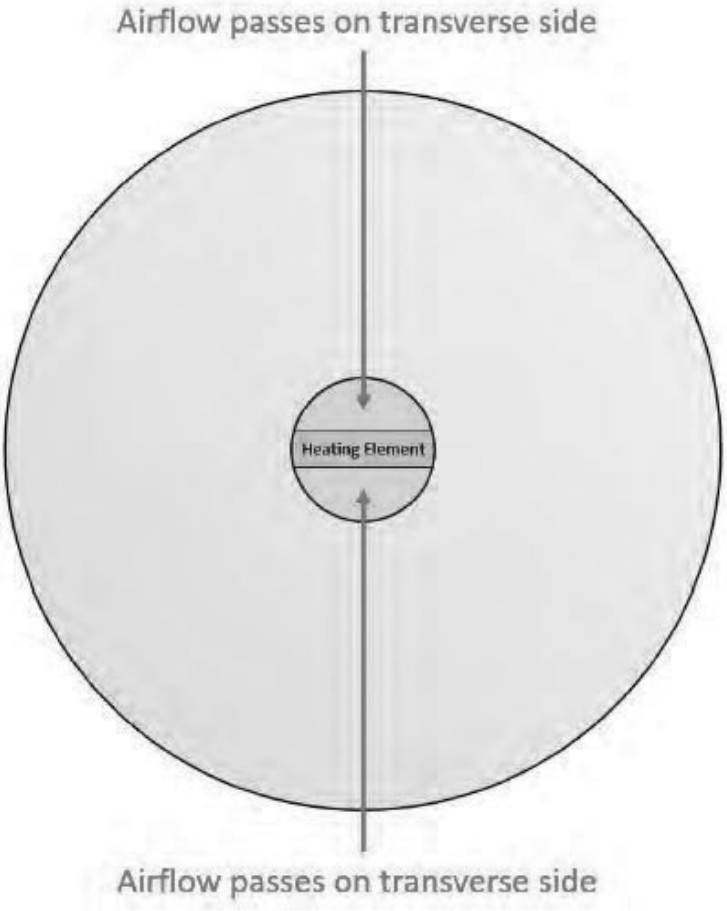
approximately the centers of the first and second ends 206 and 208, respectively, ***such that a central axis of the cartridge 200 passes through both apertures 210 and 212***.").

In view of these disclosures, the evidence will show that a POSITA would have readily recognized that the resistive heating element 222 is extending transversely across the airflow passageway 224, which supports the aforementioned claim limitations. Therefore, Respondent's contentions that the 917 Application does not provide support for a transverse heating element is incorrect.

The evidence will show that the plain meaning of "both transverse sides of the [heating] element" is sides of the [heating] element that extend transversely and over which airflow passes. CX-0217.0017-.0020. In view of the 917 Application's teachings of a transverse heating element, when airflow in the Figure 2 embodiment passes from the first aperture 212 to the second aperture 210 encounters the heating element, the evidence will show that a POSITA would understand that the airflow would separate and pass on either transverse side of the heating element (*i.e.*, the sides that extend crosswise relative to the airflow passageway). Specifically, in the orientation of Figure 2 of the 917 Application, the evidence will show that a POSITA would recognize that the airflow would pass over the transverse side in front of heating element 222, as well as the transverse side behind heating element 222 (which is not visible in Figure 2). If one were to take a top down view of the configuration in Figure 2 (*i.e.*, looking from one aperture 210 toward the other aperture 212 for example), the transverse sides of the heating element would be positioned as shown below:

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CX-0217.0020

The 917 Application also explains that "the heating element 222 is shown as residing ***solely in the airflow passageway 214*** …." JX-0520 (917 Application) ¶ 32. It also says: "it is readily recognized that airflow may pass directly over the heating element …." *Id.* In view of these disclosures and Figure 2, the evidence will show that a POSITA would have understood that the resistive heating element 222 extends transversely across the airflow passageway (as shown) and that it is solely within the passageway such that airflow passes over the heating element. The air would have to pass on the front and back transverse sides.

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Respondent contends that "[n]othing in the original disclosure would inform a POSITA how to identify transverse sides of the disclosed heating element or sides air passes over." CX-2951.0197; *see also* JX-0632C (Leinsing Opening Report) ¶ 118. This is not true, as explained above. Respondent also contends that "a POSITA would be unable to understand how to identify sides of a helical coil as a helical coil does not have sides," "a POSITA would not be able to identify any particular portions of a helical coil that air passes over," and that "[a]ir would pass over almost all portions of a helical coil because it is hollow and has gaps." CX-2951.0197; *see also* JX-0632C (Leinsing Opening Report) ¶ 118.[7] Respondent ignores the 917 Application's teaching that "[t]he heating element 222 can comprise wicking material …." JX-0520 (917 Application) ¶ 31. The evidence will show that a POSITA would have understood that such a wick and coil arrangement would eliminate the gaps and hollow nature of the heating element. Furthermore, the evidence will show that a POSITA, as explained above, would understand both transverse sides to mean two sides of the heating element over which the air flows, regardless if the heating element is cylindrical.

Respondent also cites the prosecution history of the 296 Application and 927 Application in support of its arguments. CX-2951.0197-.0198; *see also* JX-0632C (Leinsing Opening Report) ¶ 120. However, the cited papers do not support Respondent's position. First, the prosecution for these applications is ongoing, and the Examiner may retract his positions. Second, the Examiner for the 296 Application stated that "the drawings show a heating element generally transversely mounted …." CX-2840.0235. This shows that the Examiner understood transversely and that it is described in Figure 2. And lastly, while the Examiner currently questions support for a heating

[7] The 917 Application provides support for a heating coil, or that heating element 222 is not a coil. *See, e.g.*, JX-0520 (917 Application) ¶ 32 ("… the heating element 222 can be helical in nature ….").

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element that is exactly "perpendicular to the longitudinal axis of the housing," or support for airflow that "split[s] into at least two airflow paths," the patent office did not question the support for a transversely oriented heating element, airflow passing on both transverse sides, or a heating coil, as recited in the issued, asserted claims of the Asserted Patents.

c) Proximate

Respondent contends that the 917 Application does not support the limitations concerning "apertures and airflow paths as being 'proximate' to cartridge ends." CX-2951.0198-.0202; *see also* JX-0632C (Leinsing Opening Report) ¶ 121. Specifically, Respondent identifies the following limitations:

- 864 Patent, [1.2]: … the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end
- 864 Patent, [9.2]: … the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,
- 864 Patent, [9.7]: … a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.
- 864 Patent, [25.2]: … the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations.

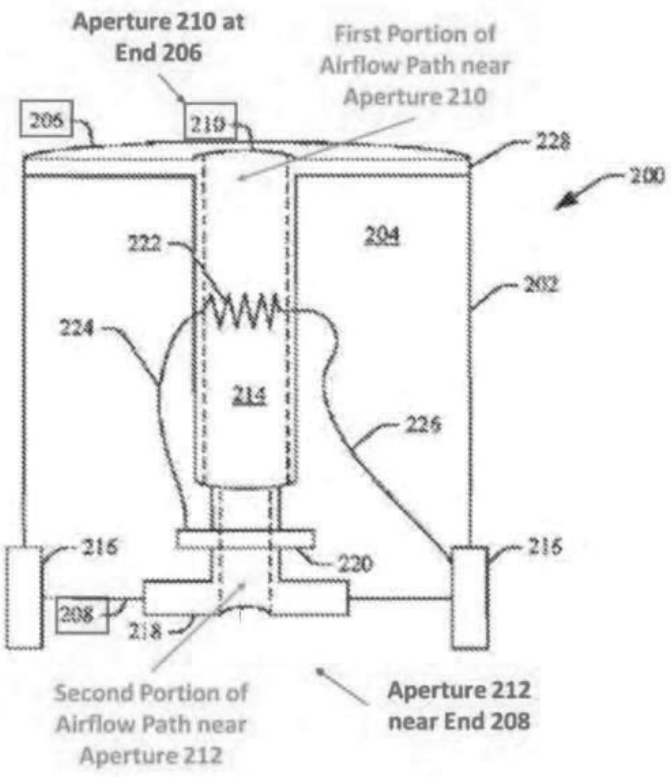
The claims of the 864 Patent use the term "proximate" in two contexts. First, the claims describe that the first and second apertures are proximate the first and second ends of the cartridge,

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respectively. Second, the claims describe that first and second portions of the airflow path are proximate the first and second apertures, respectively.

The specification of the 917 Application illustrates an exemplary embodiment having first and second apertures proximate first and second ends, as well as portions of the airflow path proximate the apertures. Figure 2 illustrates an aperture 210 that is positioned at a top end (as oriented in the figure), and an aperture 212 that is both at and near a bottom end (as oriented in the figure) opposite the top end. In particular, top end is formed by a planar surface labeled 206 and the aperture 210 is shown as flush with that surface. This demonstrates that the inventors were in possession of an aperture that is at a respective end.



JX-0520 (917 Application) at Fig. 2 (annotated)

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Furthermore, Figure 2 illustrates that the housing has a bottom end that is opposite end 206. The label 208 points to a surface of the bottom end, but a POSITA would understand that the bottom end of the housing encompasses additional surfaces as annotated below. The aperture 212 is positioned slightly lower than the plane of a surface labeled 208 that makes part of the bottom end, but is also positioned in the same plane as another surface that also makes up part of the bottom end. This demonstrates that the inventors were in possession of an aperture that is at or close to a respective end.

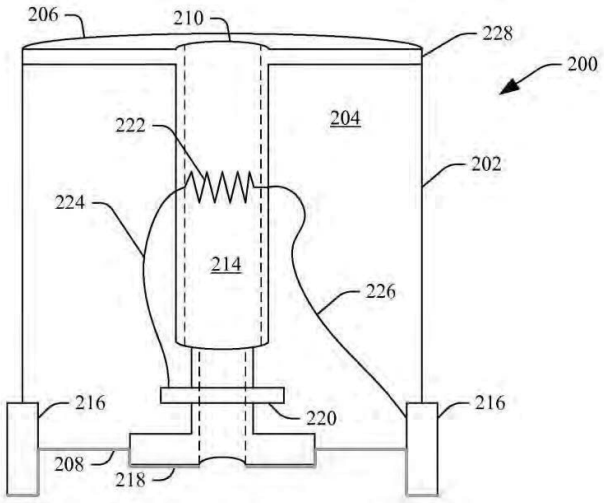


FIG. 2

JX-0520 (917 Application) at Fig. 2 (annotated)

Similarly, Figure 2 illustrates that the first and second portions of the airflow path are near apertures 210 and 212 (*i.e.*, the bottom aperture), respectively. Thus, use of the term "proximate" in the claims of the 864 Patent conveys that certain structures (*e.g.*, the apertures) need not be located at another structure (*e.g.*, at an end), and instead can be located near or close to other structures, and the 917 Application fully supports this.

Furthermore, the evidence will show a POSITA would understand from the context of the 864 Patent claims that the term "proximate" is not intended to convey a precise numerical distance between two structures, but instead is intended to convey the relative positioning of certain

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structures (*i.e.*, that certain structures are closest to other structures). *See* CX-2157C (Vallee Opening Report) ¶ 665. As set forth above, the claims require, for example, "a first aperture proximate the first end and a second aperture proximate the second end." JX-0001 at Claim 9. This language conveys to a POSITA that one aperture corresponds to one end and the other aperture corresponds to the other end, *i.e.*, that the first aperture is closer to the first end than the second end, while the second aperture is closer to the second end than the first end. *See* CX-2157C (Vallee Opening Report) ¶ 665. Similarly, the claims require a "***first portion of the airflow path proximate the first aperture…***and ***a second portion of the airflow path proximate to the second aperture***." *See* JX-0001 at Claim 9 (emphasis added). This language conveys to a POSITA that the first portion of the airflow path is closer to the first aperture, while the second portion of the airflow path is closer to the second aperture. *See* CX-2157C (Vallee Opening Report) ¶ 665. This is consistent with the exemplary embodiment in Figure 2 of the 917 Application, described above.

Respondent also contends that the 917 Application does not include the words "airflow path," but Respondent does acknowledge that it does describe a path for air to flow—*e.g.*, through an airflow passageway. CX-2951.0201 (stating that the 917 Application "does not describe a path for air to flow other than the airflow passageway); *see also* JX-0632C (Leinsing Opening Report) ¶ 126 (same).The evidence will show that a POSITA would have understood that the 917 Application provides support for an airflow path, and a POSITA would have understood the use of the word "proximate" with respect to airflow path and how it is described in the 917 Application. *See* CX-2157C (Vallee Opening Report) ¶ 667.

Respondent also points out that "labels for the second aperture 212 in Figs. 2 and 3 were added on February 26, 2019." CX-2951.0202; *see also* JX-0632C (Leinsing Opening Report) ¶ 128. Although Figure 2 in the 917 Application does not label aperture 212, the evidence will show

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that a POSITA would have understood that the aperture at the bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See* CX-2157C (Vallee Opening Report) ¶ 681. Aside from aperture 210 in Figure 2, the only other aperture in the airflow passageway is the aperture in center post 218—this aperture is described by the 917 Application as aperture 212. JX-0520 (917 Application) ¶ 29 ("An airflow passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."). In support of his incorrect opinion, Mr. Leinsing applies an incorrect interpretation of the 917 Application's disclosure, saying "that the cartridge 200 includes a center post that *extends out* from the second end 208 of the cartridge 200." CX-2811C (Leinsing Rebuttal Report) ¶ 116. In actuality, the 917 Application discloses that the center post 218 begins at the second end 208 (meaning that the bottom surface of the center post 218 is part of the second end 208) and extends upward to the wider portion of the airflow passageway 214: "The cartridge further comprises ***a center post 218 that extends from the second end 208 of the cartridge 202 to the airflow passageway 214***, wherein the center post 218 is hollow to allow the airflow passageway 214 to extend through the center post 218 to the second aperture 212." JX-0520 (917 Application) ¶ 30 (emphasis added). The remainder of the sentence confirms this correct interpretation, signaling that the hollow portion of the center post 218 extends all the way to the bottom surface of the center post 218 to the second aperture 212.

d) Airflow Path, Airflow Chamber

Respondent contends that the 917 Application does not support the limitations concerning "an 'airflow path' or 'an airflow chamber' separate from an airflow passageway." CX-2951.0202-.0207; *see also* JX-0632C (Leinsing Opening Report) ¶ 129. Specifically, Respondent identifies the following limitations:

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- 864 Patent, [9.7]: wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations.

Respondent contends that the "'917 Application's original disclosure fails to disclose an 'airflow path' ***separate or distinct from*** an airflow passageway or airflow generally."[8] CX-2951.0205; *see also* JX-0632C (Leinsing Opening Report) ¶ 132. This is incorrect. To the extent Respondent characterizes the airflow passageway as just the tubular portions in the solution holding medium 204 and center post 218 as shown in Figure 2, the 917 Application, for instance, discloses gap 228 (which also appears in Figure 2) "to mix air and the vaporized liquid solution …" JX-0520 (917 Application) ¶ 31. Thus, the evidence will show that a POSITA would have understood that the path air may flow includes the space within that gap, and that such airflow would not be confined to the central, axial tube portion of airflow passageway 214. *See also id.* ¶ 34 (describing an embodiment where an airflow passageway 214 may have apertures therein, which would facilitate air travelling in or out of an airflow passageway), 38 (referencing air flow through more than a single airflow passageway—*e.g.*, multiple passageways), Fig. 4 (not depicting a specific passageway); *see also* CX-2157C (Vallee Opening Report) ¶ 671.

Also, as the court in *Fuma Int'l v. R.J. Reynolds Vapor Co.*, Case No. 1:19-cv-260 (M.D.N.C.), recognized for certain claims of the 881 Patent that require a central and axial airflow

[8] Respondent does not seems to contend that an "airflow path" is not described in the 917 Application—indeed, it is at least described as being the path air travels through the airflow passageway 214.

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passageway from one aperture to another, "airflow may travel around or through obstacles—such as the heating element of the preferred embodiment—while the airflow passageway containing those obstacles extends in a straight path." CX-2315.0015. In other words, an airflow path is not necessarily the same thing as an airflow passageway.

With respect to "airflow chamber," Respondent contends that an airflow chamber is not described with respect to Figure 2, and that the 917 Application "does not disclosure, in the specification or figures, an airflow chamber that is not, itself, the airflow passageway." CX-2951.0206; *see also* JX-0632C (Leinsing Opening Report) ¶¶ 136-138. This is incorrect. For example, before addressing Figure 3, the specification of the 917 Application states that "it is readily recognized that airflow may pass directly over the heating element, ***through a chamber that is proximate the heating element***, or other suitable configuration." JX-0520 (917 Application) ¶ 32 (emphasis added). Notably, this disclosure does not equate the chamber with the airflow passageway, but rather states that the chamber is a portion proximate the heating element and the evidence will show a POSITA would have understood in the context of Figure 2 is in the airflow passageway. *See* CX-2157C (Vallee Opening Report) ¶ 673.Thus, the 917 Application supports claim requiring, for example, that the chamber is the portion of the airflow passageway between the heating element 222 and the aperture 210 (which corresponds to the claimed second aperture).

Respondent's expert, Mr. Leinsing, also references that second aperture 212 was not added to Figure 2 until an amendment during prosecution on February 26, 2019, and thus "[t]o the extent NJOY points to FIG. 2 in order to demonstrate the location of the second aperture 212 in the claimed cartridge, I believe this disclosure should be afforded the date of the Amendment (i.e., February 26, 2019)." JX-0632C (Leinsing Opening Report) ¶ 139. This is incorrect. As explained elsewhere, the evidence will show that a POSITA would have understood that the aperture at the

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bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See, e.g.*, JX-0520 (917 Application) ¶¶ 29-30 (describing "aperture 212").

e) Airflow Between First and Second Apertures

Respondent contends that the 917 Application does not support the limitations concerning an "airflow passageway that extends centrally and axially with respect to the housing from the first aperture to the second aperture and/or an airflow passageway in the housing where at least a portion of the airflow passageway extends centrally and axially with respect to the housing or an airflow between the first and second apertures" CX-2951.0207-.0208; *see also* JX-0632C (Leinsing Opening Report) ¶ 140. Specifically, Respondent identifies the following limitations:

- 881 Patent, [16.6]: an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing
- 864 Patent, [1.7]: an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture
- 864 Patent, [25.7]: an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations and claims.

Respondent provides no support for its contention that the 917 Application fails to support these claim limitations. To the extent Respondent ever does, Complainant reserves the right to respond.

Respondent's expert, however, opines that the "'917 Application … fails to disclose these claim features." JX-0632C (Leinsing Opening Report) ¶ 143. This is incorrect. Figure 2 of the 917

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Application discloses an airflow passageway that carries air during inhalation from the aperture 212 (the claimed first aperture), through the airflow passageway 214 where the heating element vaporizes solution that mixes with the air, and out the aperture 210 (the claimed second aperture) for oral consumption by an adult consumer. It is the same airflow. *See, e.g.*, JX-0520 (917 Application) ¶ 29 ("An air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."), ¶ 31 ("When a user draws a breath by way of the airflow passageway 214 …"), ¶ 32 ("Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration").

Mr. Leinsing also contends that the 917 Application "fail[s] to disclose an airflow passageway that extends in a straight path with only the heating element obstructing airflow through the airflow passageway along the central longitudinal axis of the housing, centrally and axially from a first aperture to a second aperture, or even an airflow passageway." JX-0632C (Leinsing Opening Report) ¶ 144; *see also id.* ¶ 159. Not so. Figure 2 of the 917 Application, for instance, depicts a straight airflow passageway extending from an aperture (*i.e.*, aperture 212) to another aperture (*i.e.*, aperture 210), "such that a central axis of the cartridge 200 passes through both apertures 210 and 212." JX-0520 (917 Application) ¶ 29; *see also id.* ("An air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."). Figure 2 also depicts a heating element 222 (which may be a wick and coil) that obstructs the airflow in this airflow passageway. *See, e.g.*, JX-0520 (917 Application) ¶ 31 ("The heating element 22 can comprise wicking material"), ¶ 32 ("the heating element 222 is shown as residing solely in the airflow passageway 214") ("it is readily recognized

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that airflow may pass directly over the heating element"). Mr. Leinsing has not identified any other obstructions in the airflow.

Respondent's expert contends that "[t]he '917 Application also fails to disclose an airflow passageway" if an airflow passageway is not limited to a "separate physical structure from the other elements such as a housing, the solution holding medium, etc." CX-2811C (Leinsing Rebuttal Report) ¶ 143. The Asserted Patents, however, do not preclude an airflow passageway from sharing structure with other components. *See, e.g.*, JX-0003 (881 Patent) at Fig. 2 (depicting shared structure between the airflow passageway 214 and center post 218 and solution holding medium 204), 6:22-24. The 917 Application is consistent. JX-0520 (917 Application) ¶ 29, Fig. 2.

Respondent also contends that the 917 Application fails "to disclose an airflow passageway that extends in a straight path with only the heating element obstructing airflow through the airflow passageway along the central longitudinal axis of the housing, centrally and axially from a first aperture to a second aperture, or even an airflow passageway." CX-2951.0208-.0211; *see also* JX-0632C (Leinsing Opening Report) ¶ 144. Specifically, Respondent identifies the following limitations:

- 881 Patent, [16.6]: the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing,
- 864 Patent, [1.7]: an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture
- 864 Patent, [9.4] and [9.7]: the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture; and … wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second

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aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

- 864 Patent, [25.7]: an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations.

Respondent contends that the "'917 Application … fails to disclose an airflow from second aperture and/or an airflow between first and second apertures." CX-2951.0210; *see also* JX-0632C (Leinsing Opening Report) ¶ 147. This is incorrect. Figure 2 of the 917 Application discloses an airflow passageway that carries air during inhalation from the aperture 212 (the claimed first aperture), through the airflow passageway 214, and out the aperture 210 (the claimed second aperture) for oral consumption by an adult consumer. It is the same airflow. *See, e.g.*, JX-0520 (917 Application) ¶ 29 ("An air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."), ¶ 31 ("When a user draws a breath by way of the airflow passageway 214 …"), ¶ 32 ("Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration").

Respondent also vaguely contends that "elements claimed as occurring or present in those airflows [are never] described in the specification as occurring or present in those airflows." CX-2951.0210; *see also* JX-0632C (Leinsing Opening Report) ¶ 147; *see also* JX-0632C (Leinsing Opening Report) ¶ 143. Although it is unclear what Respondent is referring to, the asserted claims recite that vaporization happens in the airflow, which is the case in Figure 2 and discussions thereof. Indeed, that is where the heating element is located. *See, e.g.*, JX-0520 (917 Application)

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¶ 31 ("When a user draws a breath by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222. The heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user."), ¶ 31 ("While the heating element 222 is shown as residing solely in the airflow passageway 214 …."), Figure 2 (showing heating element 222 in the airflow passageway 214).

Moreover, as the ALJ recognized in the claim construction order, the claim language reciting these limitations is unambiguous—*e.g.*:

> The claim thus unambiguously recites an airflow passageway with an airflow from the first aperture to the second aperture of the housing, a heating element in the airflow passageway, and an airflow from the second aperture provided to the user. There is no "laundry list" of claim elements; it is not unclear what is in the airflow between the first and second apertures and what is in the airflow from the second aperture.

CC Order at 27.

> Claim 9 unambiguously recites an airflow through the housing from the first aperture to the second aperture, a heating element at least partially exposed to the airflow, a portion of the solution vaporized in the airflow, and a first portion of an airflow path proximate the first aperture and a second portion of the airflow path proximate the second aperture. There is no "laundry list" of elements; and it is clear what is in the airflow.

CC Order at 30. The ALJ's descriptions of these claim limitations correspond with the descriptions provided by the 917 Application, as explained above in Sections IV.D.2. – IV.D.17.

Respondent also points out that "labels for the second aperture 212 in Figs. 2 and 3 were added on February 26, 2019." CX-2951.0211; *see also* JX-0632C (Leinsing Opening Report) ¶¶ 143, 147. Although Figure 2 in the 917 Application does not label aperture 212, the evidence will show that a POSITA would have understood that the aperture at the bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See* CX-2157C (Vallee Opening Report) ¶ 681. Aside from aperture 210 in Figure 2,

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the only other aperture in the airflow passageway is the aperture in center post 218—this aperture is described by the 917 Application as aperture 212. JX-0520 (917 Application) ¶ 29 ("An airflow passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."). Moreover, the 917 Application discloses that the center post 218 begins at the second end 208 (meaning that the bottom surface of the center post 218 is part of the second end 208) and extends upward to the wider portion of the airflow passageway 214: "The cartridge further comprises ***a center post 218 that extends from the second end 208 of the cartridge 202 to the airflow passageway 214***, wherein the center post 218 is hollow to allow the airflow passageway 214 to extend through the center post 218 to the second aperture 212." JX-0520 (917 Application) ¶ 30 (emphasis added). The remainder of the sentence confirms this correct interpretation, signaling that the hollow portion of the center post 218 extends all the way to the bottom surface of the center post 218 to the second aperture 212.

Respondent also contends that to the extent that Complainant "alleges that the airflow passageway can be crooked, a crooked airflow within a straight passage is never described or depicted in any of these applications and the Asserted Patents." CX-2951.0211; *see also* JX-0632C (Leinsing Opening Report) ¶ 148. It is not clear what Respondent means by "crooked." Nonetheless, there are various configurations contemplated by the 917 Application, including airflows separate from airflow passageways.

f) Heating Element / Solution Holding Medium / Solution Holding Medium Reservoir

Respondent contends that the 917 Application does not "disclose structures of the means-plus-function terms, including structures of the 'heating element …' terms, 'solution holding medium …,' and 'solution holding medium reservoir ….'." CX-2951.0211-.0216; *see also* JX-

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0632C (Leinsing Opening Report) ¶ 149.Specifically, Respondent identifies the following limitations:

- 881 Patent, [16.2], [16.7]-[16.10]: a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing, … the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, … a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium, the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture, the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

- 881 Patent, [26]: The cartridge of claim 16, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element.

- 864 Patent, [1.2], [1.5]-[1.6]: a housing having an interior and a solution holding medium adapted to hold a solution, … a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and

- 864 Patent, [9.2], [9.5]-[9.6]: a housing having an interior and a solution holding medium adapted to hold a solution, … a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source,

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- 864 Patent, [12]: The cartridge of claim 9, wherein the heating element includes a wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized.

- 864 Patent, [13]: The cartridge of claim 9, wherein the first aperture proximate the first end is smaller than the second aperture proximate the second end.

- 864 Patent, [16]: The cartridge of claim 15, wherein a majority of the portion of the airflow passageway has a substantially uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing between the heating element and the second aperture.

- 864 Patent, [20]: The cartridge of claim 9, wherein the heating element includes a material that when powered by the power source is adapted to vaporize the solution brought into contact with the heating element.

- 864 Patent, [25.2], [25.5]-[25.7]: a housing having an interior and a solution holding medium adapted to hold a solution, … a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer, the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and … wherein the airflow passageway extends in a straight path from the first aperture to the second aperture with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations and claims. Respondent's contentions are all conclusory and all lack support, primarily because they are all premised on "heating element" being construed under § 112, ¶ 6. The ALJ has ordered, however, that "heating element" is not subject to § 112, ¶ 6. CC Order at 48. Nonetheless, each of Respondent's argument will be described below.

Regarding "heating element," Respondent contends that "there is insufficient written description support for this feature." CX-2951.0214; *see also* JX-0632C (Leinsing Opening

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Report) ¶ 150. However, item 222 in Figure 2 of the patents is identified as a "heating element." JX-0520 (917 Application) ¶ 31. Moreover, the specification clearly links the claimed function of vaporizing the portion of the solution for oral provision to the user to heating element 222. *Id.* ("The heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user."). Item 222 does not appear in any other figure, and it is not described in any other section of the specification except the ones identified above.

The evidence will show that a POSITA would have readily understood heating element 222 in Figure 2 to be a resistive heating element. As depicted, heating element 222 is a zig-zag line with "conductive lines 224 and 226" extending outwardly from either end. *Id.* In this context, the evidence will show that a POSITA would have understood this to represent a resistive heating element, such as a coil. *Id.* ¶ 32 ("heating element 222 can be helical in nature"). *See also* CX-2157C (Vallee Opening Report) ¶ 689.

The center post 218 is not the structure for the heating element and the evidence will show that a POSITA would not have interpreted Figure 2 in that way. *See also* CX-2157C (Vallee Opening Report) ¶ 690. There is no discussion of using center post 218 to vaporize liquid in the 917 Application description of Figure 2. Only the "heating element 222" is described as vaporizing liquid solution. And even if the "center post 218" could operate as a heating element, there is no discussion of using two different kinds of heating elements in the same cartridge. Moreover, as Complainant's expert, Dr. Vallee, will explain, it would be uncommon to use two different kinds of heating elements, back-to-back, in a single cartridge to vaporize liquid.

"[A] helical coil wrapped around a passageway" is not the structure for the claimed heating element. In fact, the claims require that the heating element "extend[] transversely across the airflow passageway" or "extend[] transversely to the central longitudinal axis of the housing." In

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contrast to the configuration of the heating element illustrated in Figure 2, the 917 Application discloses a different embodiment in which the heating element does not extend transversely across the airflow path or central axis. In Figure 3, in particular, the 917 Application illustrates a heating element 302 that may "wrap around the exterior of the airflow chamber 214." JX-0520 (917 Application) ¶ 35. In Figure 3, the heating element does not extend transversely across the airflow path or central axis.

Regarding "solution holding medium," Respondent contends that "there is insufficient written description [support] for this feature." CX-2951.0215; *see also* JX-0632C (Leinsing Opening Report) ¶ 151. This is incorrect, at least because Respondent's are all premised on "solution holding medium" being construed under § 112, ¶ 6. The ALJ has ordered, however, that "solution holding medium" is not subject to § 112, ¶ 6. CC Order at 50.

As the ALJ found, the term "solution holding medium" means "a location, container, or mechanism to hold the solution." CC Order at 50. The 917 Application discloses a "solution holding medium" as properly construed.

The 917 Application discloses: "liquid, gelatin, frozen or solid solution (solution) 128 also resides in the interior of the housing 120, wherein the solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128." JX-0520 (917 Application) ¶ 23. As set forth above, this passage states that "an absorbent material, capsule, or reservoir ... may act as the holding medium for the solution," which is the same as saying a "solution holding medium." These are descriptions of a location, a container, or mechanism to hold solution.

Other passages in the specification describe an absorbent material for holding solution. For example, the patents describe a cartridge embodiment with absorbent material to hold solution:

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"Additionally, as described above, the solution 128 may be placed in an absorbent material, such as cotton, wool, polyester, a batting material, or some other suitable absorbent material." JX-0520 (917 Application) ¶ 27. Moreover, Figure 2 discloses an absorbent material 204 to hold solution. *See also id.* ¶ 28.

Respondent points to the Asserted Patent's disclosure of "pellets" as being a required disclosure for the solution holding medium, which is not described the 917 Application. CX-2951.0215. This is incorrect. As the evidence at the hearing will show, a POSITA would not have understood that the disclosure of pellets or such capsules as being required disclosure for the solution holding medium, or that pellets are a solution holding medium. *See* CX-2157C (Vallee Opening Report) ¶ 695.

Pellets are disclosed in the following two instances of the Asserted Patents:

> Also, an alternative embodiment of a cartridge (adapted to mount to the described power source) may be configured to receive one or more capsules or pellets. Such capsules or pellets may be comprised of one or more medicines, vitamins, a tobacco, and/or other chemical(s) that the end user may desire to taste/consume. In such an embodiment, when the cartridge with a capsules is mounted to a power source (e.g. such as the power source 104 discussed above), the mechanical connection of the cartridge and power source may cause the capsule to open and release the contents therein. The end user may then provide a suction on the tip of the cartridge with his/her mouth in order to draw the released contents of the capsule into his/her mouth. In examples of this described embodiment, the capsule may be included in the cartridge during the manufacturing of the cartridge. However, it should be appreciated that in other embodiments, the cartridge may be designed to accept one or more capsules therein via a pharmacist and/or an end user prior to mounting the cartridge to a power source. Also it should be appreciated that this described example of the cartridge may also include a heating element therein that is configured to heat a capsule (or a pellet) to cause release of the contents of the capsule/pellet when the cartridge is mounted to the power source or when other actions are detected (e.g. a button press, suction through the cartridge).

JX-1003 (881 Patent) at 7:25-49.

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> Further, it should be noted that any of the chemical delivery examples described herein (vaporizer, capsule, **pellet**, auto injector) may be operative to deliver any type of desirable substance to a user, including but not limited to: medications, antibiotics, pain killers, pharmaceuticals, narcotics, nicotine, tobacco, THC, marijuana, caffeine, vitamins, herbal substances, food, steroids, epinephrine, insulin, and/or any other substances that may be desirable by an end user of the described embodiments.

JX-1003 (881 Patent) at 16:32-40 (emphasis added).

As the evidence at the hearing will show, a POSITA would not understand that the first passage at column 7, lines 25 through 49, discloses solution holding mediums. *See* CX-2157C (Vallee Opening Report) ¶ 697. It does not mention a solution or liquid, and it does not use the words "holding medium" or similar language. Rather, a POSITA would understand that this disclosure is more consistent with heating solids or powders, which may be found in capsules or compressed into pellets. *See, e.g.*, JX-1003 (881 Patent) at 16:48-55 (stating that the heating element may be used with "a solution, solid or powder."); *see also* CX-2157C (Vallee Opening Report) ¶ 697. Indeed, a pellet is a small, compressed solid. Also, this passage does not mention vaporization (which is the result of heating a solution), despite elsewhere throughout the patents discussing vaporization. The passage instead states that heating causes "contents" to be released. This passage therefore does not clearly link the structures described to the claimed function.

The second passage at column 16, lines 32 through 40, also separately lists a "vaporizer" and a "pellet" as chemical delivery examples, suggesting that a pellet does not hold any solution to be vaporized.

With respect to solution holding medium reservoir, Respondent also argues that the 917 Application does not "describe a reservoir comprising absorbent material." CX-2951.0215; *see also* JX-0632C (Leinsing Opening Report) ¶ 152. As noted above, the 917 Application discloses that the solution holding medium can be a reservoir. JX-0520 (917 Application) ¶ 23. Moreover,

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as the evidence will show it was well known in the field of e-cigarettes that a reservoir can be an absorbent material. *See, e.g.*, CX-2791 (claiming a liquid reservoir), CX-2252 (disclosing a liquid storage container for an e-cigarette), CX-2792 ¶ 82 (explaining that reservoir may be "non-woven layers of fibers rolled into the form of a tube that lines a portion of the inner surface of the cartridge shell," including "natural fibers, synthetic fibers, or combinations thereof.").

g) Housing Having Central Longitudinal Axis

Respondent contends that the 917 Application does not "disclose a housing having a central longitudinal axis extending from the first end to the second end." CX-2951.0216-.0218; *see also* JX-0632C (Leinsing Opening Report) ¶ 154. Specifically, Respondent identifies the following limitations:

- 881 Patent, [16.3]-[16.4], [16.6]-[16.10]: the housing having a central longitudinal axis extending through the first end and the second end, the housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing, … an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing, the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway; and a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium, the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture, the heating element being connected to the electrically conductive portion of the first end of the housing,

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- 881 Patent, [19]:The cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing

- 881 Patent, [22]: The cartridge of claim 16, wherein the first aperture on the first end is located centrally and axially with respect to the housing

- 864 Patent, [1.5] – [1.7]: a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow, the heating element being responsive to electrical power received from the power source; and an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing

- 864 Patent, [2]: The cartridge of claim 1, further in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery

- 864 Patent, [9.5], [9.7]: a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow, … wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

- 864 Patent, [15]: The cartridge of claim 9, further comprising an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing

- 864 Patent, [16]: The cartridge of claim 15, wherein a majority of the portion of the airflow passageway has a substantially uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing between the heating element and the second aperture

- 864 Patent, [25.2]: the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end

As set forth above, and as will be demonstrated at the hearing, the 917 Application provides written description support for these claim limitations and claims.

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Respondent's contention is that "labels for the second aperture 212 in Figs. 2 and 3 were added on February 26, 2019." CX-2951.0218; *see also* JX-0632C (Leinsing Opening Report) ¶ 157. Although Figure 2 in the 917 Application does not label aperture 212, the evidence will show that a POSITA would have understood that the aperture at the bottom of Figure 2 would correspond to aperture 212 based on the description of Figure 2 in the specification of the 917 Application. *See* CX-2157C (Vallee Opening Report) ¶ 681. Aside from aperture 210 in Figure 2, the only other aperture in the airflow passageway is the aperture in center post 218—this aperture is described by the 917 Application as aperture 212. JX-0520 (917 Application) ¶ 29 ("An airflow passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."). Moreover, the 917 Application discloses that the center post 218 begins at the second end 208 (meaning that the bottom surface of the center post 218 is part of the second end 208) and extends upward to the wider portion of the airflow passageway 214: "The cartridge further comprises ***a center post 218 that extends from the second end 208 of the cartridge 202 to the airflow passageway 214***, wherein the center post 218 is hollow to allow the airflow passageway 214 to extend through the center post 218 to the second aperture 212." JX-0520 (917 Application) ¶ 30 (emphasis added). The remainder of the sentence confirms this correct interpretation, signaling that the hollow portion of the center post 218 extends all the way to the bottom surface of the center post 218 to the second aperture 212.

h) Vaporization and Oral Provisioning

In his report, Respondent's expert, Mr. Leinsing, opines that the 917 Application "fail[s] to disclose (a) the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture or (b) the heating element being configured to vaporize at least a portion of the solution held in the solution holding medium for oral provision to an individual in

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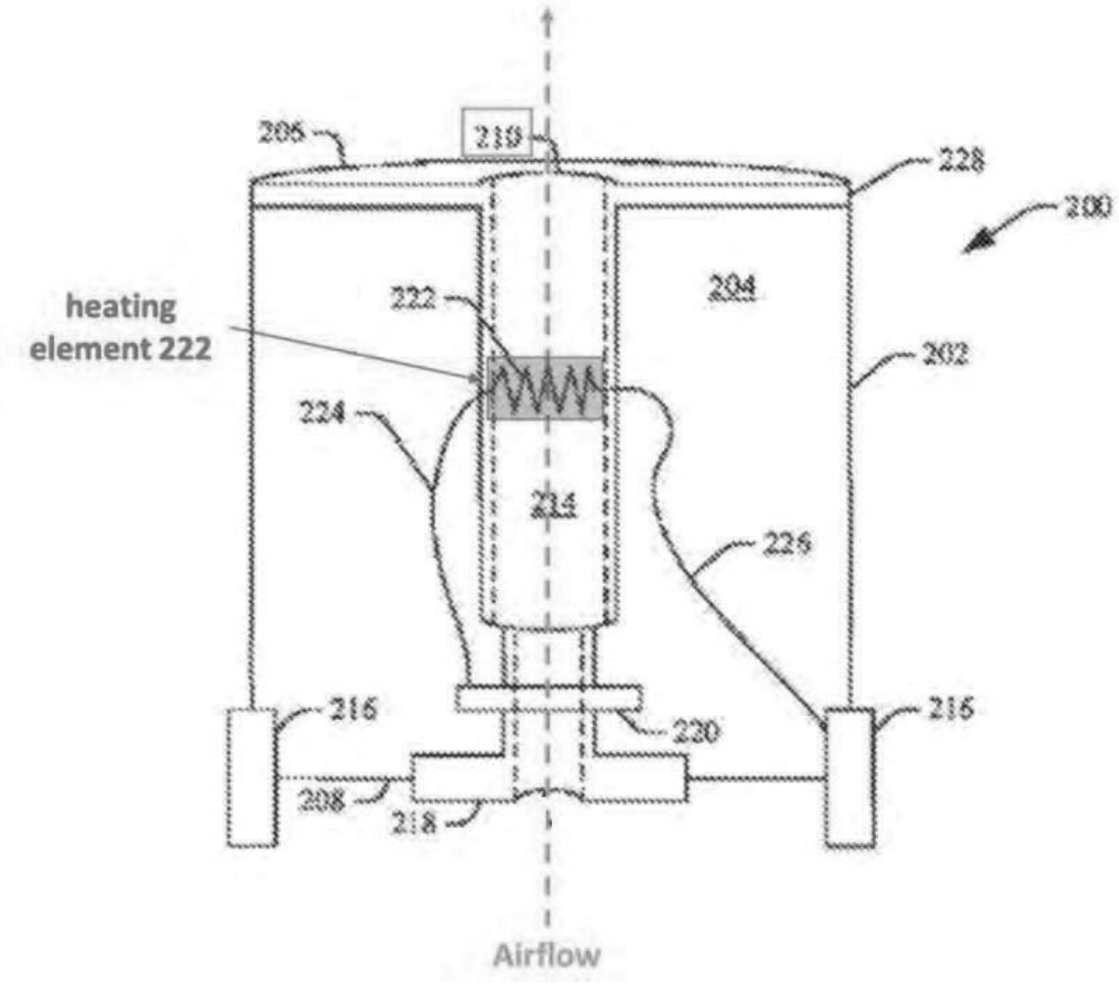
[redacted]

the airflow from the first aperture to the second aperture, as required by claims 1, 8, and 16 (and claims depending therefrom) of the '881 Patent and claims 1, 5, 9, 21, 25, 29, 38, and 45 (and claims depending therefrom) of the '864 Patent." JX-0632C (Leinsing Opening Report) ¶ 158. This is incorrect, as explained below. Further, this specific argument does not appear to be in JLI's March 12, 2024 Contentions.

Consistent with the claims of the Asserted Patents, Figure 2 of the 917 Application discloses an airflow passageway that carries air during inhalation from the aperture 212 (the claimed first aperture), through the airflow passageway 214 where the heating element vaporizes solution that mixes with the air, and out the aperture 210 (the claimed second aperture) for oral consumption by an adult consumer. It is the same airflow. *See, e.g.*, JX-0520 (917 Application) at Abstract ("the heating element is configured to vaporize a solution for oral provision to the individual"), ¶ 29 ("An air passageway 214 begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200."), ¶ 31 ("When a user draws a breath by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222. The heating element 222 acts to vaporize the liquid solution in the absorbent material 204, and the resulting vapor is received by the user."), ¶ 32 ("Accordingly, it is readily recognized that airflow may pass directly over the heating element, through a chamber that is proximate to the heating element, or other suitable configuration"), ¶ 34 ("Similar to the previously described exemplary cartridge 200 (Fig. 2), the gap 228 may exist to facilitate mixing of vaporized solution with air. This gap is optional, as other designs may call for the walls of the airflow passageway 214 to be permeable or have apertures therein, to allow for vaporized solution to mix with air in the airflow passageway 214."); *see also id.* at Fig. 2:

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[redacted]



i) Airflow Passageway

In his report, Respondent's expert, Mr. Leinsing, opines that the 917 Application "fail[s] to disclose an airflow passageway extending between apertures, as recited in each of the claims of the Asserted Patents." JX-0632C (Leinsing Opening Report) ¶ 160. This is incorrect, as explained below. Further, this specific argument does not appear to be in JLI's March 12, 2024 Contentions.

Specifically, Mr. Leinsing opines that the "'917 Application only describes the passageway as a physical structure, separate from the housing, which begins at the first aperture and extends all the way to the second aperture, forming a passageway for airflow between those two apertures"

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and that the "'917 Application provides no disclosure of a passageway that does not define a physical passageway of airflow between the first and second aperture." JX-0632C (Leinsing Opening Report) ¶ 161. It is not clear what Mr. Leinsing means by "define a physical passageway of airflow between the first and second aperture." However, the 917 Application describes Figure 2 as having an "air passageway 214 [that] begins at the first aperture 210 and extends to the second aperture 212 approximately along the central axis of the cartridge 200." JX-0520 (917 Application) ¶ 29. Regardless, the airflow passageway of the 917 Application has structure. Figure 2 of the 917 Application, for example, depicts the airflow passageway as a smaller-diameter tubular section in center post 218 and a larger-diameter tubular section in the solution holding medium 204. *See* JX-0520 (917 Application) ¶¶ 29-30. Moreover, certain embodiments include a gap 228 to facilitate mixing of air and vaporized solution. *See* JX-0520 (917 Application) ¶ 31. In these embodiments, such as the one shown in Figure 2, the airflow passageway comprises the gap to facilitate mixing of air and vaporized solution. Thus, Mr. Leinsing's opinion is incorrect to the extent his interpretation of an airflow passageway excludes the Figure 2 embodiment, because that interpretation would not be consistent with the patents.

E. The 881 Patent

1. Infringement

a) The JUUL System Infringes the Claims at Issue

(1) Claim 16[9]

As set forth below, the JUUL System practices every limitation of independent claim 16 of the 881 Patent.

[9] Claim 16 is not asserted against the JUUL System, but claim 19, which is asserted against the JUUL System, ultimately depends from claim 16.

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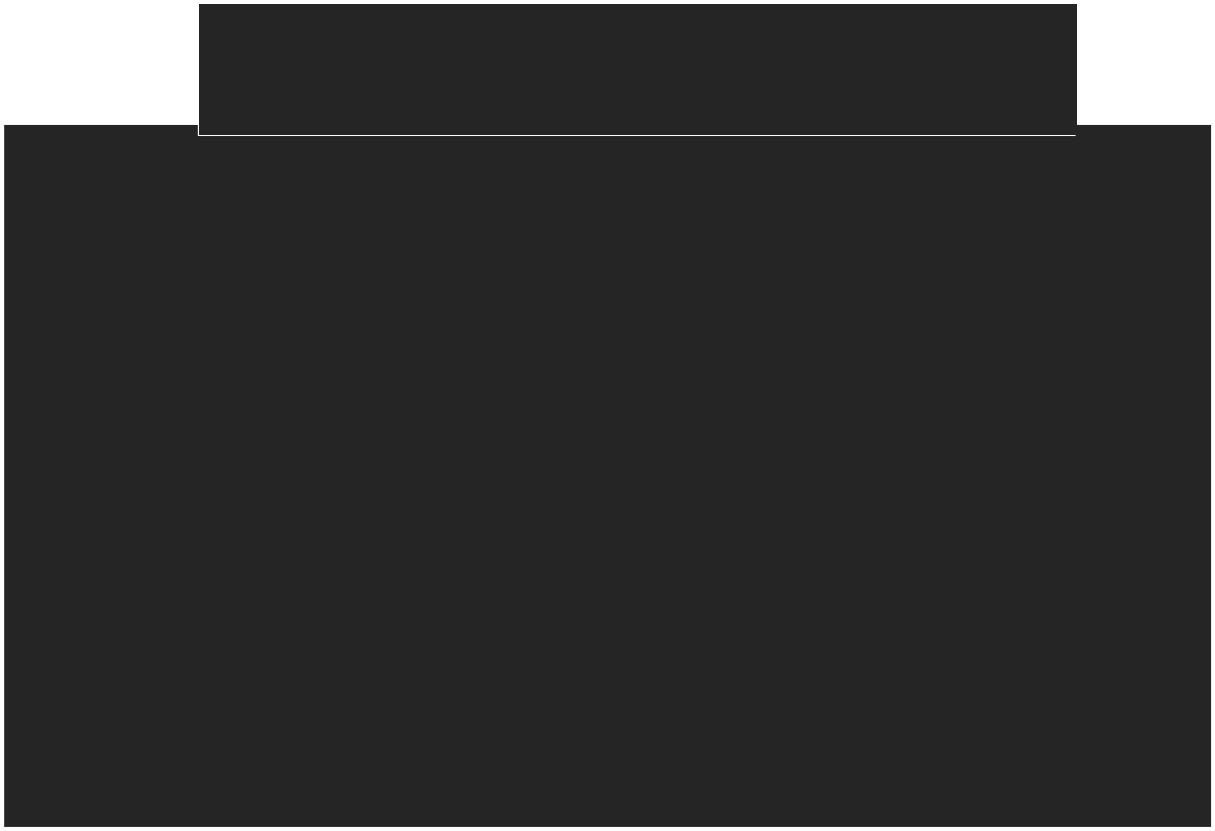
[redacted]

(a) [16.1] A cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer, the cartridge comprising:

It is undisputed that the JUUL System includes a cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer, the cartridge comprising. *See* CX-2951.0011.

The JUUL System is an electronic vaporizer. *See, e.g.,* CX-2220C.0001 ("The JUUL System is a closed, cartridge-based product that utilizes heating technology to aerosolize and deliver nicotine without combustion."). As shown below, the JUUL System comprises a JUULpod, which is a cartridge, configured to mechanically and electrically couple to the JUUL Device, which is a power source. [redacted]

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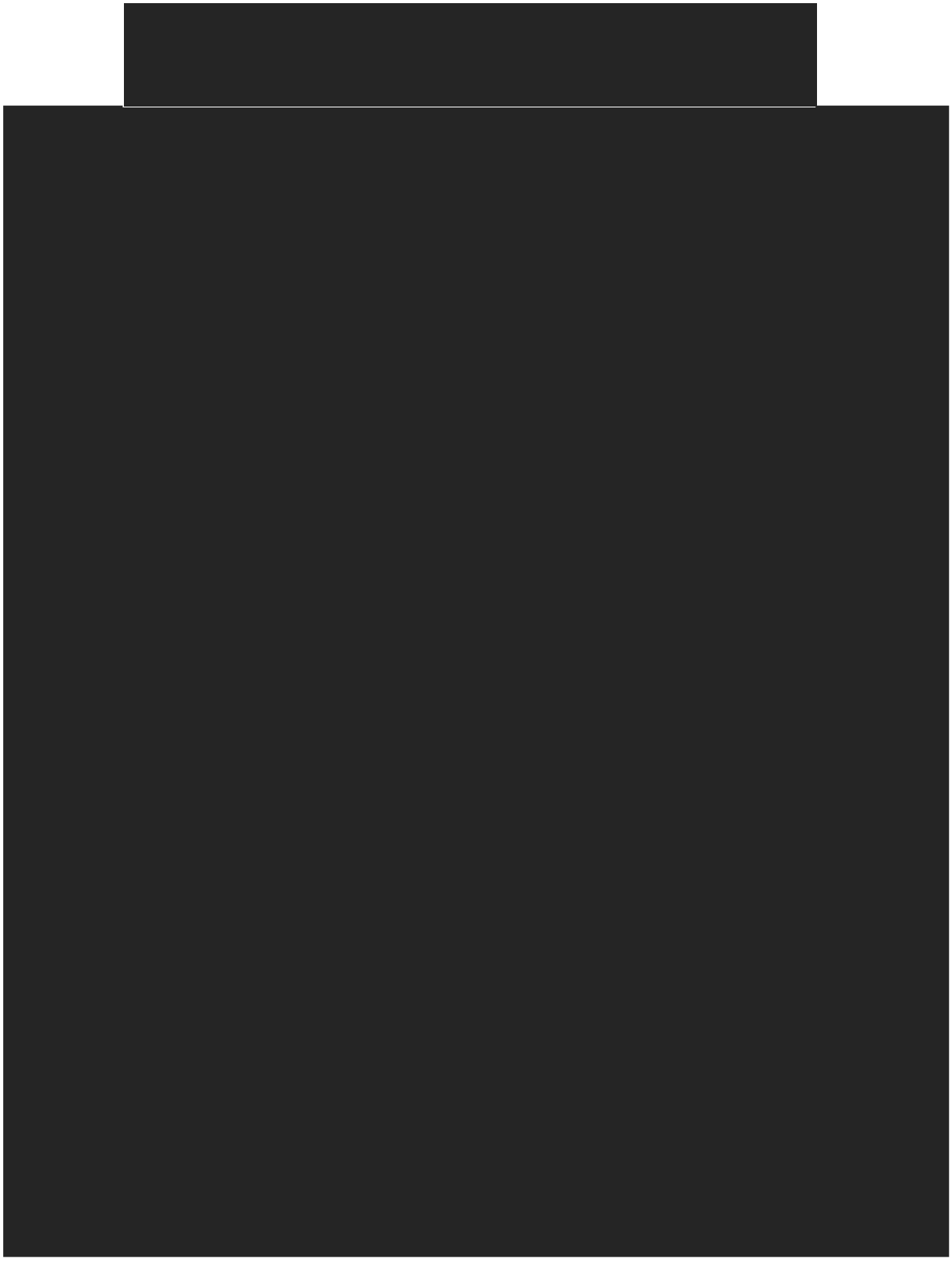
See also JX-0514C; JX-0519C; JX-0541C.

(b) [16.2] [the cartridge comprising:] a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing,

The JUUL System includes a cartridge that comprises a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing.

First, the JUUL System includes a cartridge (i.e., the JUULpod) that has a housing having an interior.

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[redacted]

As described in further detail below, the above identified housing includes an interior, a solution holding medium, first and second ends, a first and second aperture, an airflow passageway, and a heating element.

Complainant anticipates Respondent will argue that the [redacted]

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The claims do not require that the second end of the housing must also

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[redacted]

be the end of the cartridge. Moreover, the specification contemplates that an additional component such as a mouthpiece can be placed upon the "second end," and the second end of the housing need not be the end of the cartridge. For example, the specification explains that the "cartridge 104 also comprises a first end 122 and a second end 124, which may be considered as a portion of the housing 120 or apart from the housing 120." JX-0001 (864 Patent) at 3:46-49. The specification further contemplates an additional component such as a mouthpiece being placed upon the second end:

> Furthermore, ***a wood tip may be positioned upon the second end 124, wherein the wood tip is configured to be received orally by the user. In alternative embodiments, the second end 124 may include a tip comprised of a soft, malleable and/or a flexible polymer***. Also in alternative embodiments, the second end 124 may include a paper wrapping around the tip of the second end in order to more closely simulate the tip of a conventional cigarette. Such a paper wrapping may further include flavorings capable of being tasted by a user (e.g., mint, tobacco, candy, fruit, or any other types of flavorings and/or aromas).

JX-0001 (864 Patent) at 5:39-50 (emphasis added); *see also* [redacted]

Respondent's attempt to argue that the [redacted] is contrary to the plain language of the claim and the disclosure in the specification. Nothing in the claims preclude the addition of a mouthpiece on the second end of the housing, and as noted above, the specifications of the Asserted Patents contemplate that an additional component such as a mouthpiece can be placed upon the "second end," and the second end of the housing need not be the end of the cartridge.

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[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

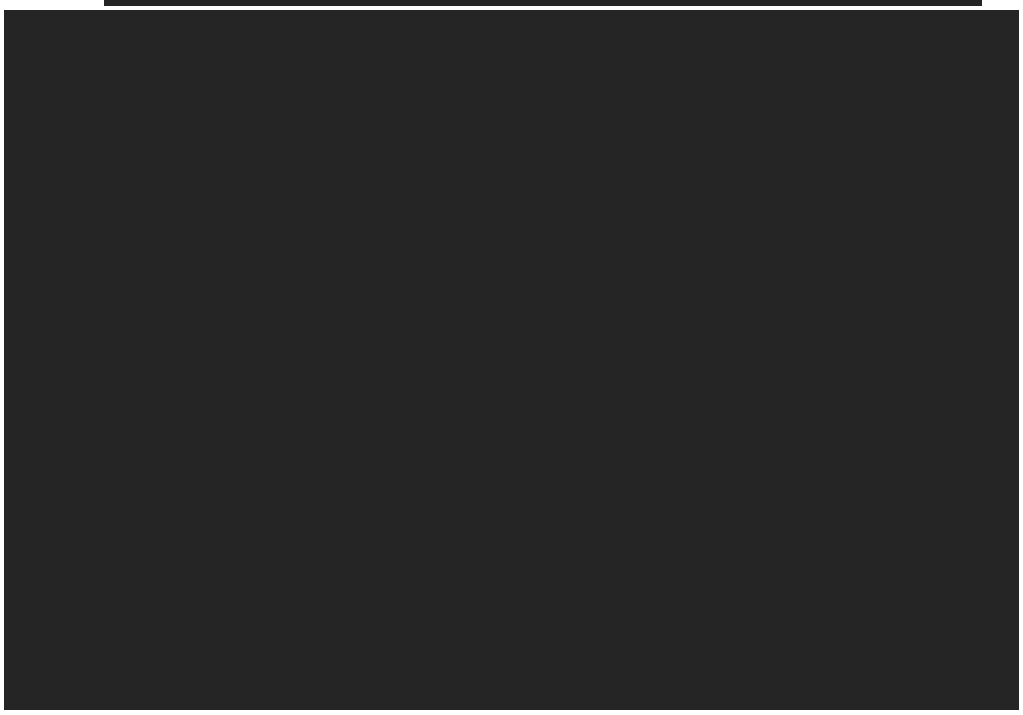
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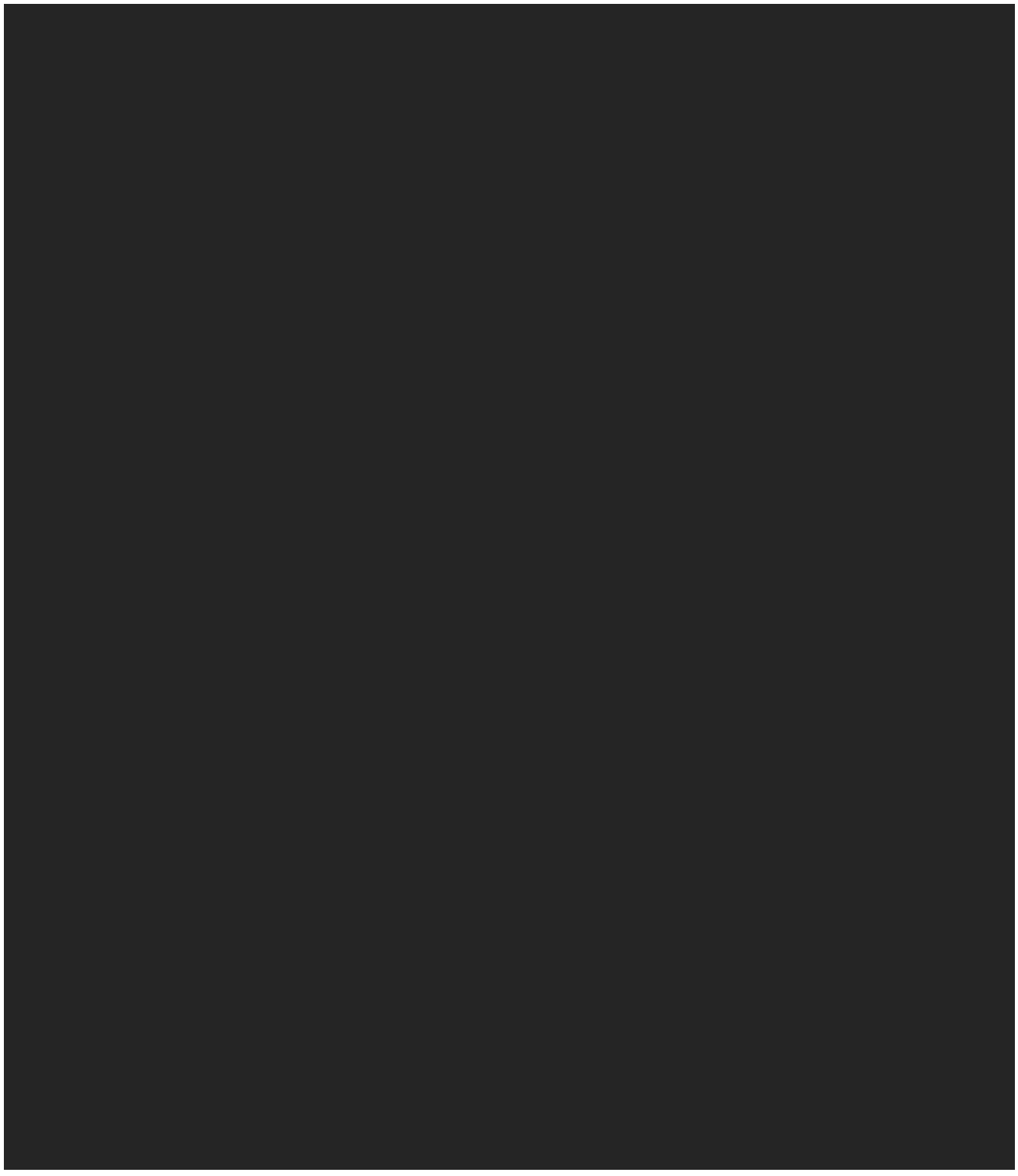
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[redacted]



Second, the JUUL System includes a cartridge (i.e., JUULpod) having a housing, wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing. The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50. The JUUL System includes a location, container, or mechanism to hold the solution. For example, [redacted]

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[redacted]

(c) [16.3] the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end,

The JUUL System includes a cartridge that comprises a housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end.

First, the JUULpod comprises housing having a first end and a second end that is opposite the first end, as shown below. [redacted]

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[redacted]

Complainant anticipates that Respondent will argue that the [redacted] Respondent may also argue that the [redacted] The evidence will show that Respondent's assertions are merely conclusory, unsupported, and contradicted by Respondent's own experts. For example, Respondent's expert, Mr. Leinsing, contends that the [redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

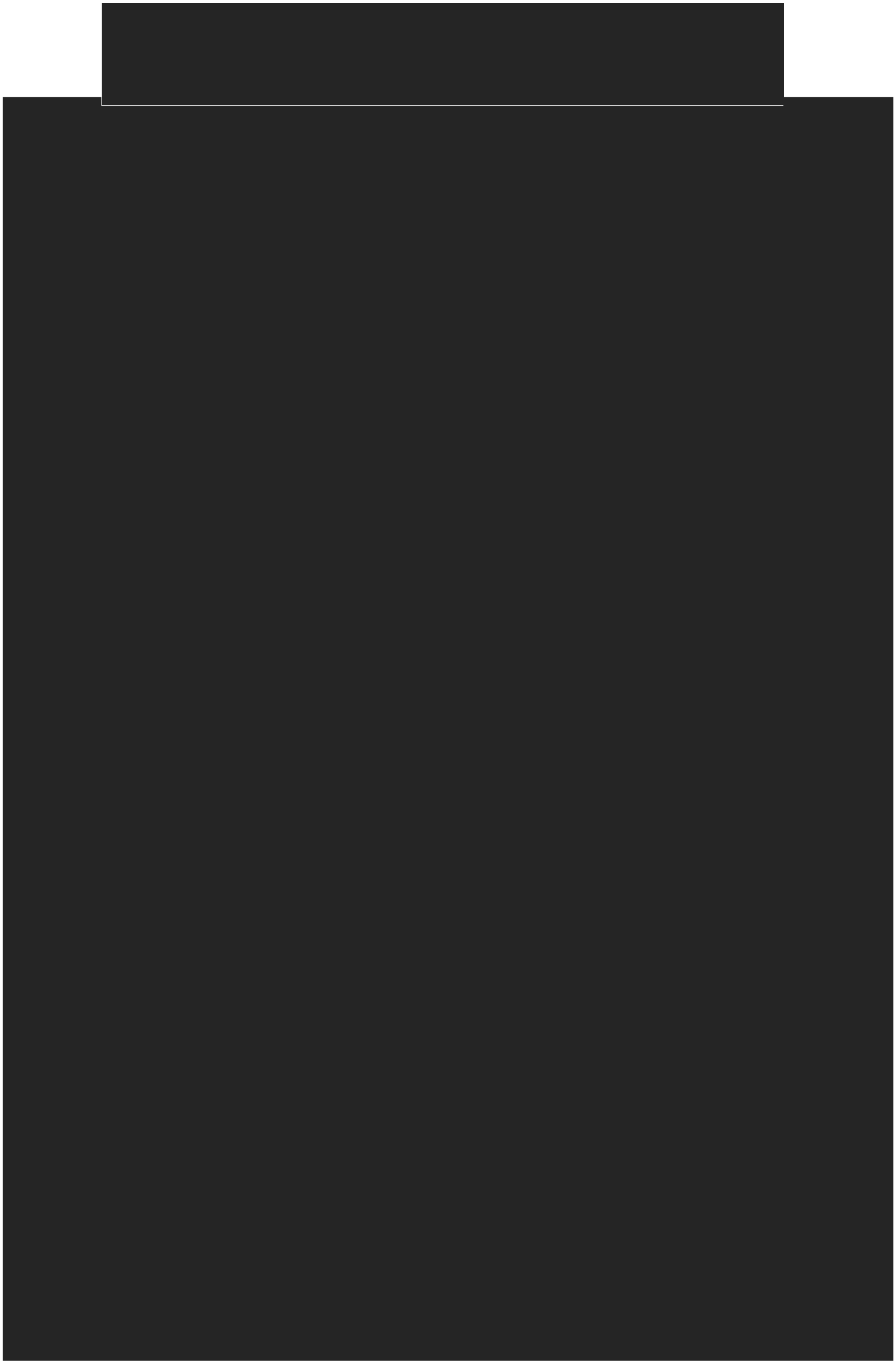
[redacted]

[redacted]



Second, the JUULpod comprises a housing having a central longitudinal axis extending through the first end and the second end.

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[redacted]

> (d) [16.4] the housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing,

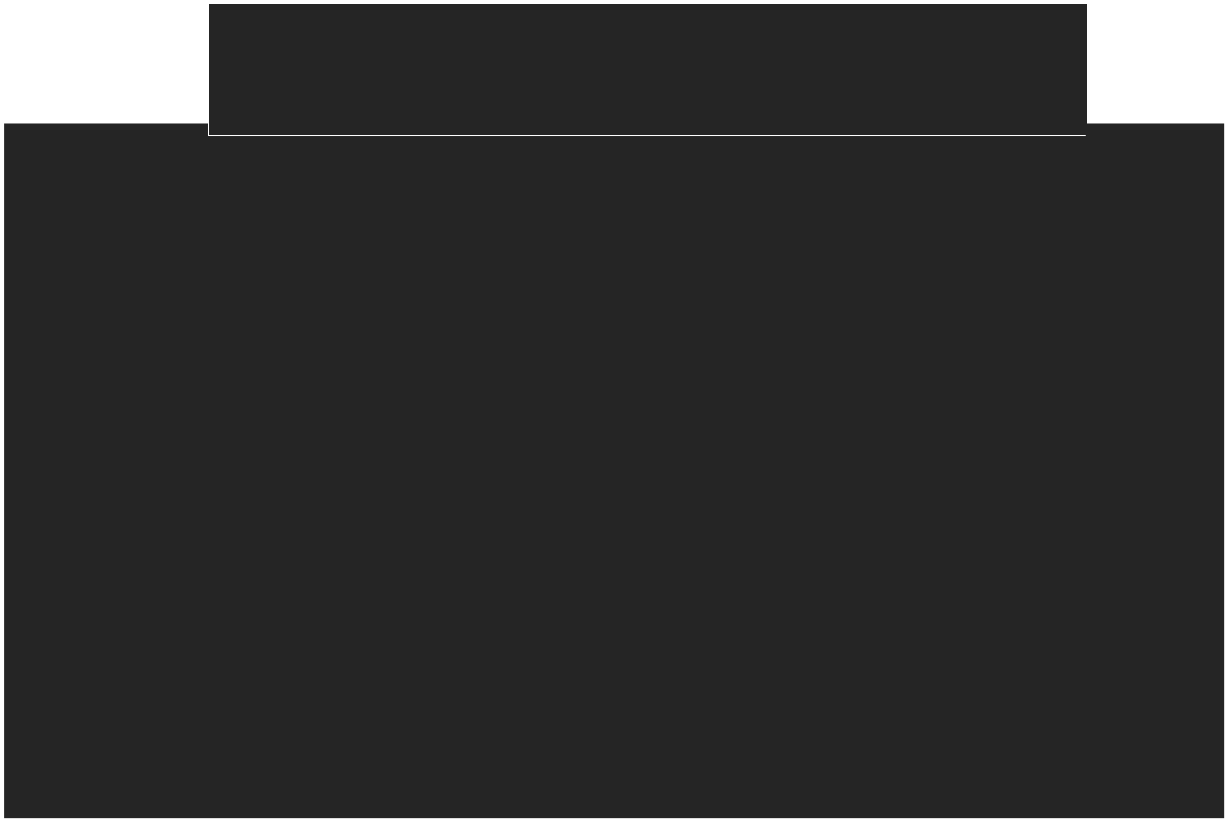
The JUUL System includes a cartridge that comprises a housing having a first aperture on the first end and a second aperture on the second end, the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing.

The JUULpod comprises a housing having a first aperture on the first end and a second aperture on the second end.

As shown below, the housing has a first aperture on the first end of the housing. In particular, [redacted].

[redacted]

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The housing also has a second aperture on the second end of the housing. As shown below,



The first aperture also has a

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[redacted]

[redacted]

[redacted]



(e) [16.5] the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source;

The JUUL System includes a cartridge (i.e., JUULpod) that comprises a housing wherein the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source (i.e., JUUL Device).

First, as shown below, the first end of the housing comprises [redacted]

[redacted]

[redacted]

[redacted]

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[redacted]



Second, the first end of the housing comprises an electrically conductive portion that is adapted to mechanically couple to the JUUL Device. For example, [redacted]

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[redacted]

[redacted]

As shown below, [redacted]

[redacted]

[redacted]

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[redacted]



The evidence will show that the term "portion" refers to an area within the end of the cartridge housing. CX-2157C (Vallee Opening Report) ¶ 1100. [redacted]

(f) [16.6] an airflow passageway in the interior of the housing, the airflow passageway having a length

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[redacted]

> extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing,

The JUUL System includes a cartridge that comprises a housing that includes an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing.

The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "[t]he airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." CX-0213.0008-.0010. The ALJ adopted the parties agreed construction. *See* CC Order at 4-5.

First, as described above with respect to limitations [16.1] and [16.2], the JUUL System includes a cartridge (i.e., JUULpod) comprising a housing having an interior. *See* Section IV.E.1.a)(1)(a)-(b).

Second, as shown below, [redacted]

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As shown below, the airflow passageway extends centrally and axially with respect to the housing intermediate the first aperture on the first end of the housing and the second aperture on the second end of the housing.



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[redacted]

Third, the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing. [redacted]

[redacted]

(g) [16.7] the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway; and

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[redacted]

The JUUL System includes a cartridge (i.e., JUULpod) that comprises a housing that includes an airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway.

First, the airflow passageway has an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, as shown below.


[redacted]

Second, the airflow passageway has an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway. Specifically, [redacted]

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[redacted]

[redacted]

[redacted]



As shown below, [redacted]

[redacted]

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(h) [16.8] a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium,

The JUUL System includes a cartridge that comprises a housing that includes a heating element located in the interior of the housing and extending transversely across the airflow

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[redacted]

passageway, the airflow through the passageway passing on both transverse sides of the heating element, a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium.

First, the JUUL System includes a cartridge (i.e., JUULpod) comprising a housing having a heating element located in the interior of the housing and extending transversely across the airflow passageway, the airflow through the passageway passing on both transverse sides of the heating element.

[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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[redacted]

Complainant anticipates that Respondent will argue, incorrectly, that the heating element cannot comprise a wicking material that does not itself generate heat, and that therefore the claimed heating element cannot not encompass both a heating coil wrapped around a wick. For example, Respondent's expert, Dr. Dahm, points to the prosecution history of U.S. Patent Application No. 14/510,955 (which resulted in U.S. Patent No. 9,532,604, which is related to the Asserted Patents), where the applicant distinguished then-pending claim 7 requiring a "heating element [that] comprises a wicking material to attract the solution from the solution holding medium to the heating element" over U.S. Patent App. Pub. No. 2009/0272379 ("Thorens"). JX-0653C (Dahm Rebuttal Report) ¶¶ 91-93 (citing CX-2246 (Thorens), JX-0521 (955 Application)).

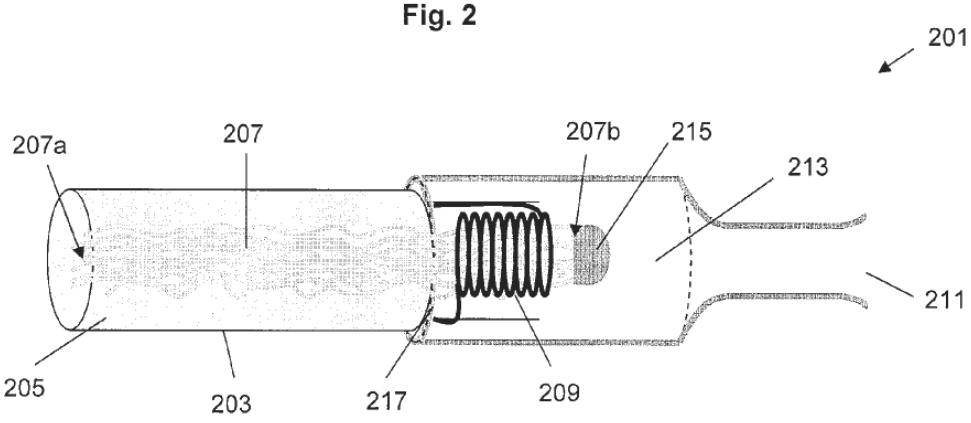
The applicant's statements, however, do not amount to a disclaimer of a heating element that may comprise a non-heating wicking material (*e.g.*, a heating coil wrapped around a wick), or

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[redacted]

otherwise require any claim reciting that the heating element comprises a wick to mean the heating element is itself a wick. The cartridge of Thorens's device is depicted below:

Fig. 2



CX-2246 (Thorens) at Fig. 2

During the prosecution of the 955 Application, the Examiner, with respect to then-pending claim 7, identified Thorens's wick 207 as both the "wicking material' and the "solution holding medium" of pending claim 7:

> Regarding claim 7, Thorens discloses the heating element (heating coil 209) comprising ***wicking material (wick 207*** near coil 209, right side of fig. 2) attracting solution (liquid 205) from ***absorbent material (wick 207 being absorbent material*** in liquid 205, left side of fig. 2) to the heating element. Additionally, Ray discloses the solution in an absorbent member 14.

JX-0521.0076 (955 Application) (emphasis added).

Under the Examiner's interpretation, Thorens does not have separate wicking material and solution holding medium structures, as required by then-pending claim 7 ("wherein the heating element comprises a ***wicking material to attract the solution from the solution holding medium*** to the heating element"). JX-0521.0109 (955 Application) (emphasis added). By identifying Thorens's wick 207 as both the solution holding medium and the wicking material, wick 207 does not attract a solution from a solution holding medium. Therefore, the applicants responded to that

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argument by stating that "the heating element of Thorens does not include any form of wicking material which attracts the solution." JX-0521.0126 (955 Application). The applicants' statement is therefore not a disclaimer requiring that the heating element cannot comprise a non-heating wick, or otherwise requiring any claim reciting that the heating element comprise a wick must mean the heating element is itself a wick, as argued by Respondent. *See CUPP Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1382 (Fed. Cir. 2022) (holding that a disavowal must be "both clear and unmistakable" and that where "the alleged disavowal is ambiguous, or even amenable to multiple reasonable interpretations, we have declined to find prosecution disclaimer.") (citations omitted).

Notably, in *Fuma Int'l, LLC v. R.J. Reynolds Vapor Co.*, 1:19-cv-260 (M.D.N.C.), where the 881 Patent and the 604 Patent, which issued from the 955 Application, were asserted, R.J. Reynolds made the same argument as Respondent makes here with respect to whether the heating element may comprise a non-heating wick in view of the 955 Application prosecution history. The district court rejected these arguments, however, finding:

> RJR's contention that this means "the component generating heat is constructed from a wicking material," Doc. 82 at 37, is not consistent with the ordinary meaning of the claim read as a whole. Claim 6[, which requires "wherein the heating comprises a wicking material to attract the solution from the solution holding medium to the heating element,"] explicitly differentiates between the heating element and the wicking material, ('604 patent, col. 18:8–10), making it clear that they are not identical, and that is implicit in Claim 14 as well. The specifications are consistent with this construction. ('604 patent, cols. 5:48–52, 6:43–46). It is clear that the wicking material facilitates the movement of the solution from the holding medium to the heating element, but there is no requirement that the wicking material itself generate heat.

RX-0503.0011.

For at least the same reasons, Respondent is incorrect that the heating element may not comprise a wick unless the heating element itself is a wick.

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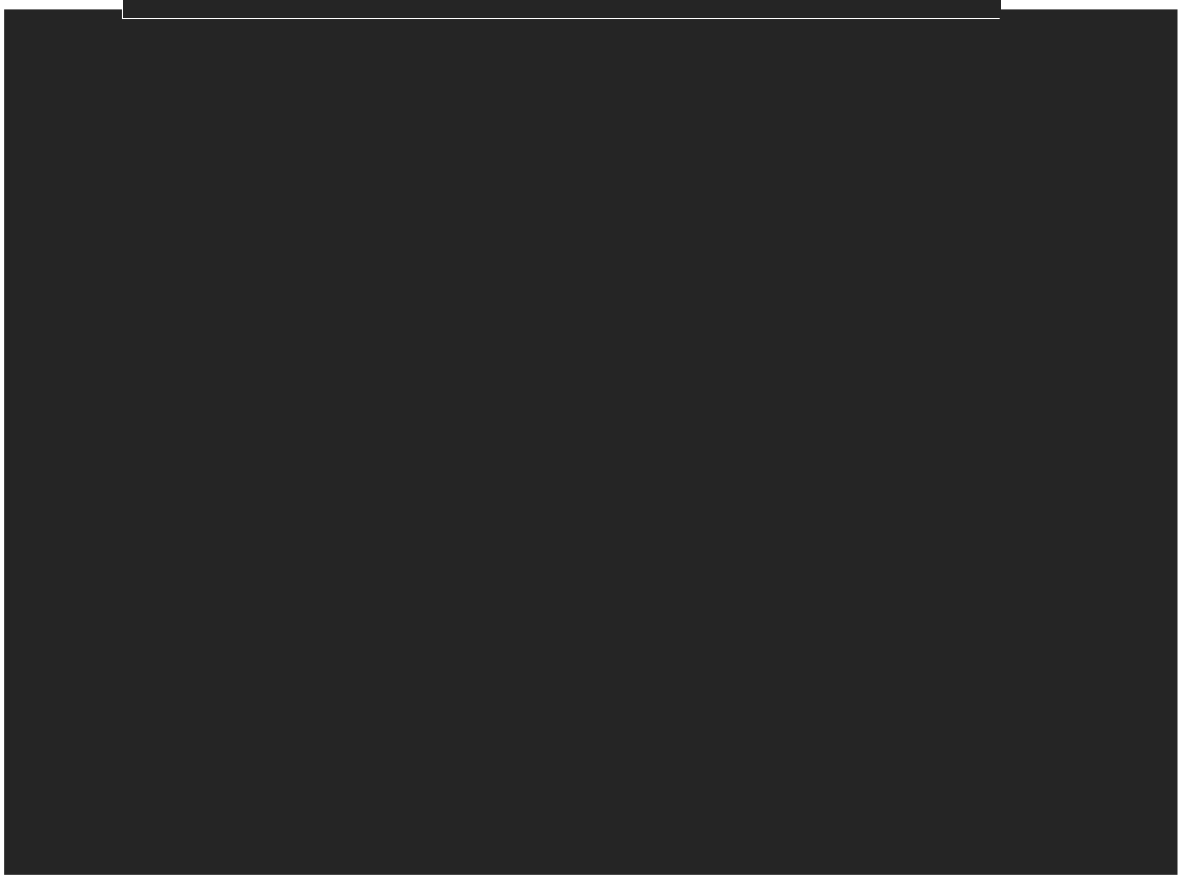
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Second, the heating element extends transversely across the airflow passageway, as shown below. The term "transversely" has been "construed to have its plain and ordinary meaning, that is, crosswise." CC Order at 17.



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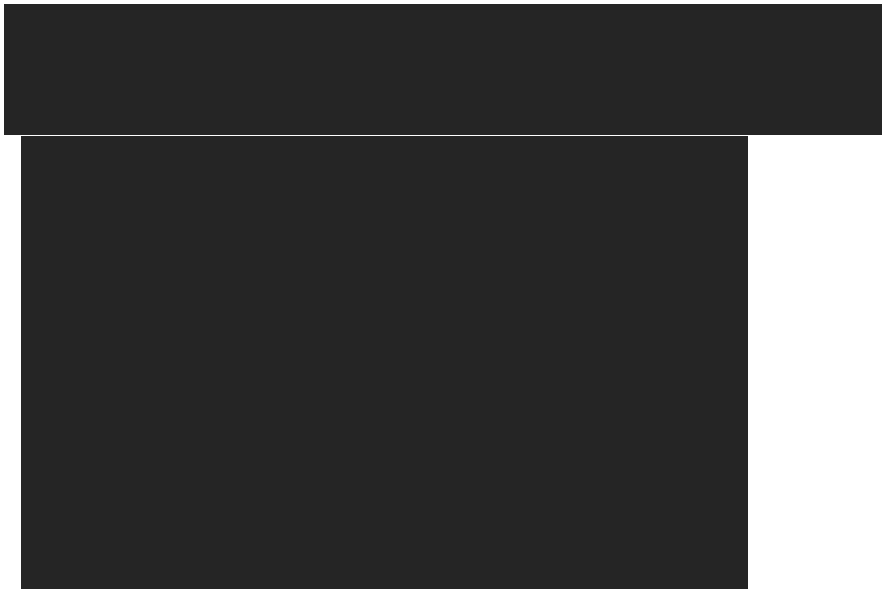
[redacted]



[redacted] CX-2157C (Vallee Opening Report) ¶ 1113. As the evidence will show, a POSITA reading the claim would understand the limitation to mean the heating element is oriented in a cross, or perpendicular, direction relative to the airflow passageway. *Id*.

Third, the airflow through the passageway passes on both transverse sides of the heating element. The term "both transverse sides of the [heating] element" has been "construed as having its plain and ordinary meaning, which is the claim language itself." CC Order at 21. As the evidence will show, a POSITA would have understood that the "transverse sides" of the heating element are the sides facing the front and back surfaces of the JUUL Pod, as shown below. CX-2157C (Vallee Opening Report) ¶ 1114.

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During use,

As shown below, the air pass on both transverse sides of the heating element.

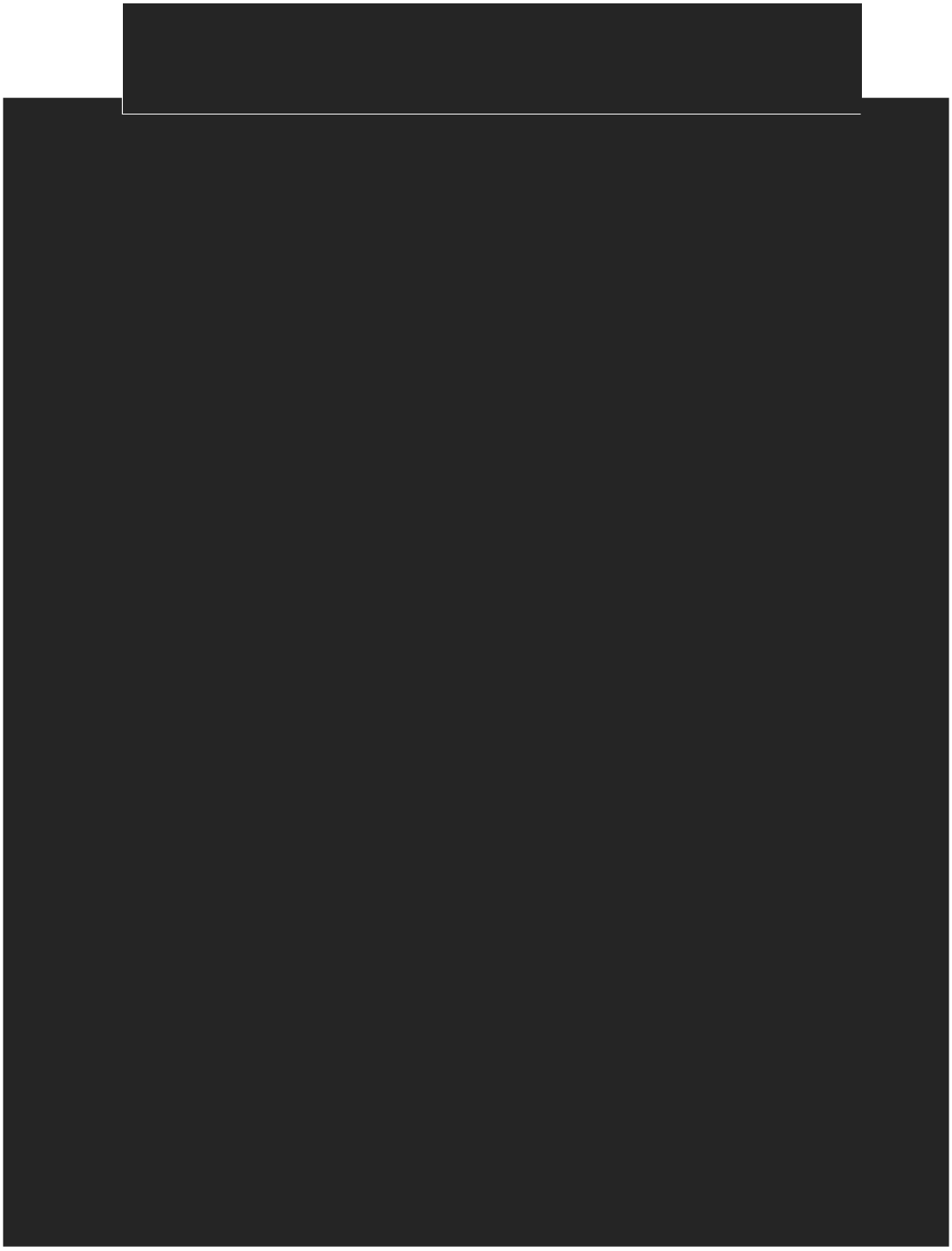


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[redacted]

Fourth, the evidence will further show that there exists a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium, as illustrated below.

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(i) [16.9] the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture,

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[redacted]

The JUUL System includes a cartridge that comprises a housing that includes airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture.

[redacted]



[redacted]

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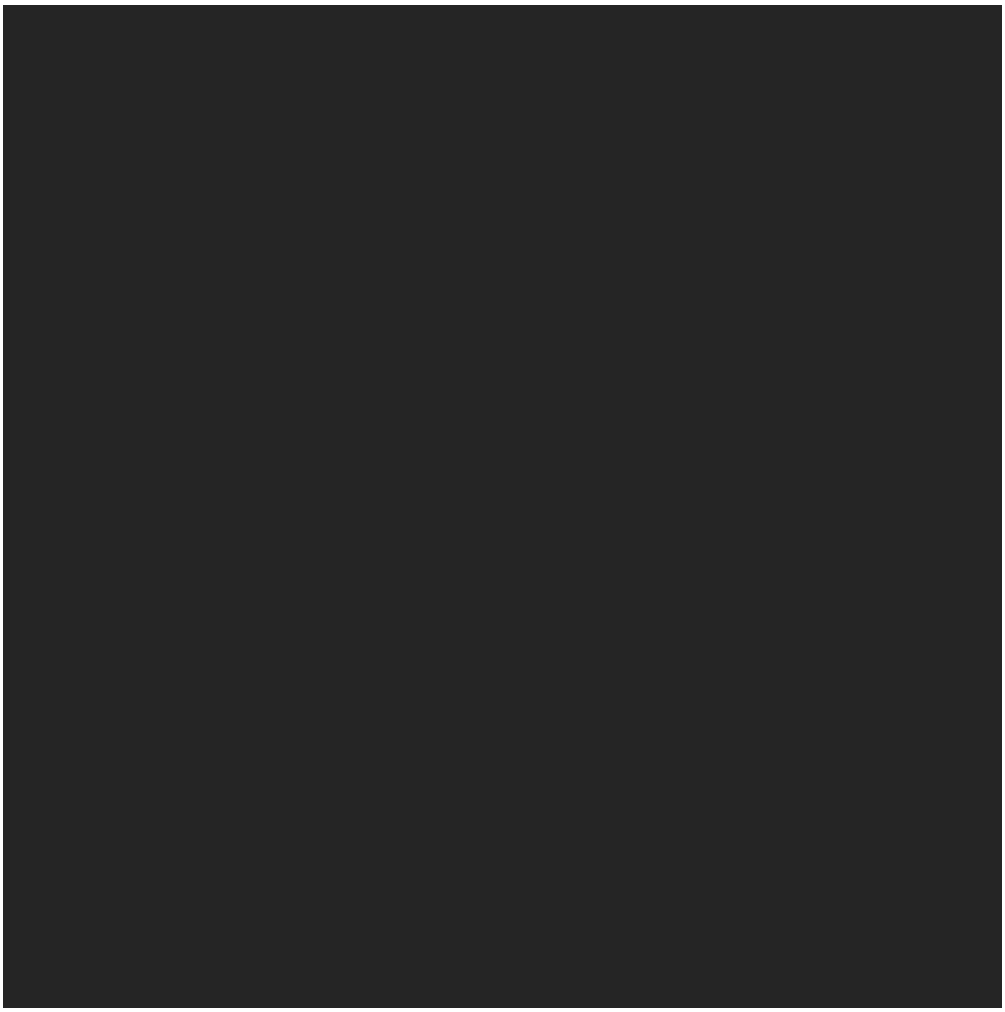


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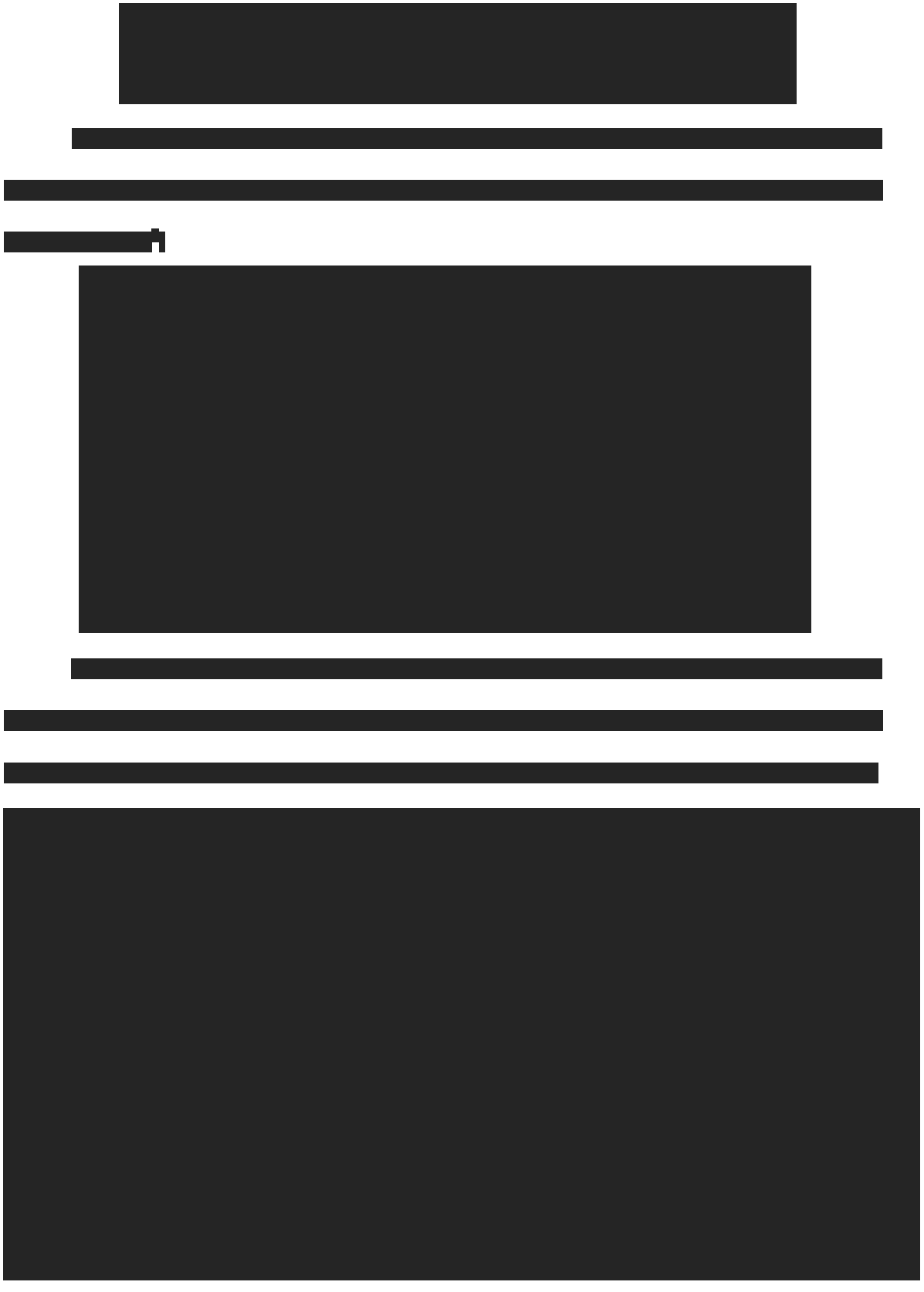


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[redacted]



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[redacted]

Therefore, the interior of the airflow passageway between the heating element and the second aperture has no cross-sectional area measured perpendicular to the central longitudinal axis of the housing smaller in cross-sectional area than a cross-sectional area of the first aperture.

(j) [16.10] the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

The JUUL System includes a cartridge that comprises a housing that includes the heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the power source through the electrically conductive portion of the cartridge.

The term "configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 33. In construing this term, the ALJ noted that "[t]he language of each claim clearly articulates what is in the airflow" and "[w]ith respect to the phrase 'for oral provision to an individual in the airflow,' based on the claim language itself, one of ordinary skill in the art would recognize that this refers to the solution to be provided orally to a user." *Id*. The term "heating element being connected to the electrically conductive portion of the first end of the housing, the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution

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[redacted]

holding medium for oral provision to an individual in an airflow" was addressed in CC Order; the ALJ finding that "[b]ased on the language of the claims, the disclosure in the specification, and the other intrinsic evidence, I conclude that 'heating element' in the '881 and '864 patent claims is not subject to § 112, ¶ 6." *Id*. at 48. The ALJ further noted that "[b]ecause the parties have not fully explained their disagreement (if any) with respect to how this term should be construed outside of § 112, ¶ 6 (although all agree that it can appropriately be so construed) I will address that issue later if necessary after it is addressed by the parties." *Id*.

The evidence will show that the JUUL System includes the claimed heating element. First, as described above with respect to limitation [16.8] of the 881 Patent (*see* Section IV.E.1.a)(1)(h)), the JUULpod has a heating element (i.e., coil and wick, or alternatively coil) located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow.

[redacted]

Second, the heating element (*i.e.*, coil/wick) is configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow. As described above, the heating element includes coil that is made of [redacted]

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[redacted]

Third, the heating element is responsive to electrical power received from the power source. For example, [redacted]

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[redacted]

Fourth, the heating element of the JUULpod is connected to the electrically conductive portion (i.e., [redacted] of the first end of the housing. [redacted]

(2) Claim 18[10]

Claim 18 recites "[t]he cartridge of claim 16, wherein the heating element is a coil having a maximum diameter and the uniform cross-sectional area of the airflow passageway is a circle having a diameter, the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway."

The JUUL System includes a cartridge (i.e., JUULpod) comprising a housing that includes the heating element is a coil having a maximum diameter and the uniform cross-sectional area of

[10] Claim 18 is not asserted against the JUUL System, but claim 19, which is asserted against the JUUL System, depends from claim 18

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[redacted]

the airflow passageway is a circle having a diameter, the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway.

[redacted]

[redacted]



As shown below, [redacted]

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(3) Claim 19

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[redacted]

Claim 19 recites "[t]he cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing."

The JUUL System includes a cartridge (i.e., JUULpod) having a first aperture on the first end, wherein the first aperture on the first end is located centrally and axially with respect to the housing. As shown below, the first aperture is located centrally and axially with respect to the housing.



(4) Claim 26

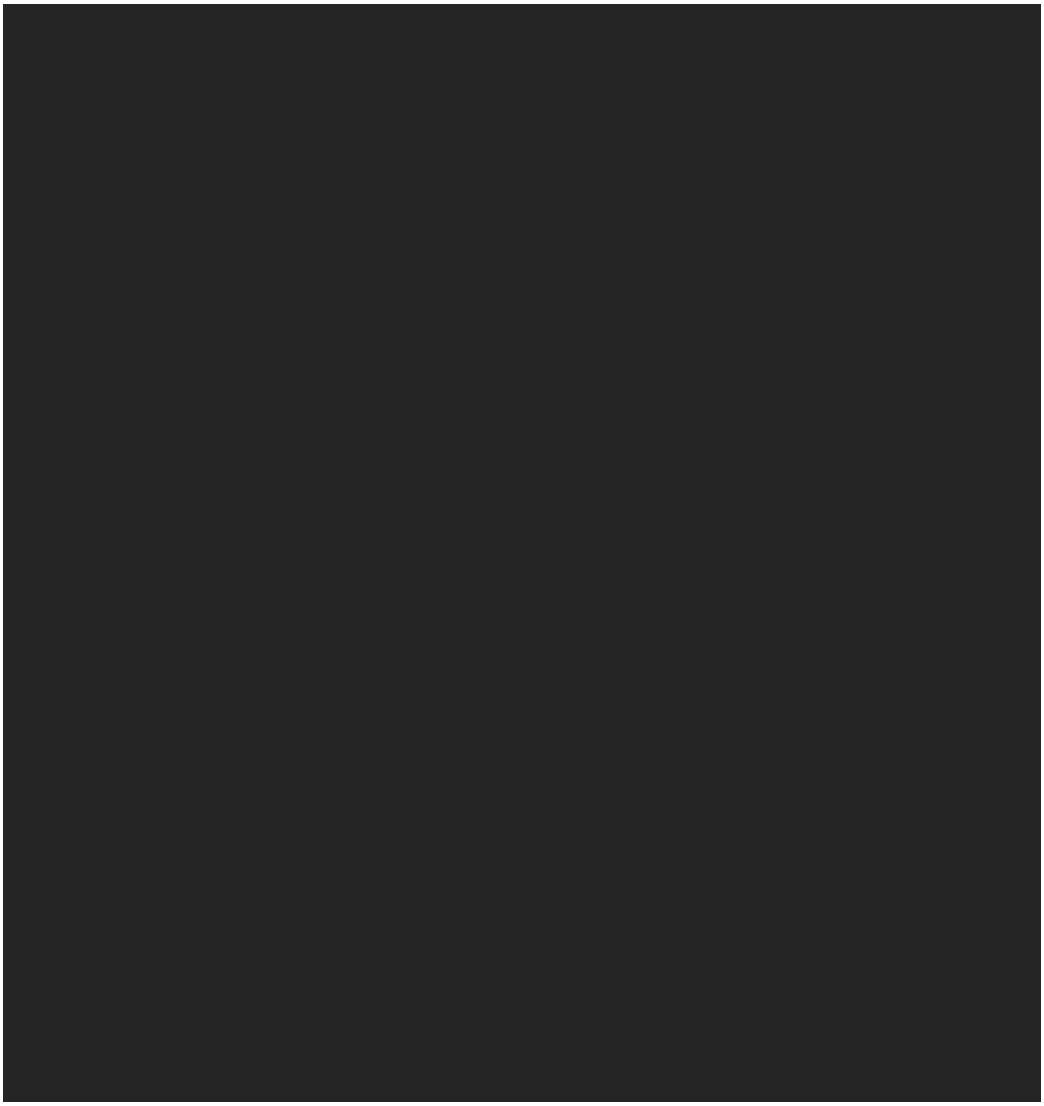
Claim 26 recites "[t]he cartridge of claim 16, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element."

The JUUL System includes a cartridge (*i.e.*, JUULpod) comprising a housing having a heating element (*i.e.*, coil/wick assembly) in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element.

[redacted]

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[redacted]



The evidence will show that the f[redacted] is the recited "wicking material," and that it is operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized. CX-2157C (Vallee Opening Report) ¶¶ 1225-1229.

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[redacted]

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(5) Rebuttal to Respondent's Non-Infringement Arguments

As set forth above, the evidence will show the JUUL System infringes claims 19 and 26 of the 881 Patent. Many of Respondent's non-infringement arguments (include those from its expert Dr. Dahm) are addressed above, but Complainant further addresses Respondent's non-infringement arguments as set forth, for example, in Respondent's contentions below. *See* CX-2951. Notably, Respondent's arguments are repetitive across different claim limitations. Therefore, Complainant's response to one argument with respect to one claim term is equally applicable to the same or similar arguments that Respondent raised with respect to other claim terms.

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[redacted]

Moreover, Respondent also makes non-infringement arguments under proposed constructions for which Complainant's expert, Dr. Vallee, does not provide an infringement opinion. Accordingly, Respondent may not address such arguments. However, any lack of response should not be understood to mean that Complainant or its expert agree with those arguments or proposed constructions.

First, Complainant anticipates that Respondent will argue that "NJOY has improperly altered the JUUL1 System as sold and intended for use by JLI" because "JLI does not sell pods where the integrated mouthpiece has been removed from the JUUL1 pod." CX-2951.0025-0027. However, in performing an infringement analysis, what matters is that there exists a structure that meets all the limitations of the claim. As set forth above, the JUUL Pod contains a structure that meets all the limitations of claims 19 and 26 of the 881 Patent. Moreover, the existence of additional structure does not negate the existence of the infringing structure.

Second, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System has a recited "first aperture" because [redacted]

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[redacted]

[redacted]

[redacted]



Third, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System has an "airflow passageway extending centrally and axially with respect to the housing between the alleged first and second apertures." CX-2951.0028. Respondent asserted that [redacted]

Complainant also anticipates that Respondent will argue that [redacted]

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[redacted]

Complainant anticipates that Respondent will further argue [redacted] This is incorrect. As the court in the Fuma RJRV Litigation made clear, the airflow passageway may contain obstacles that do not alter the shape of the passageway. CX-

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[redacted]

2315.0016; *see also* Section I.D.2, above. The asserted patents specifically contemplate a heating element comprising a wicking material in the airflow passageway that extends in a straight line. *See* JX-0005 (881 Patent) at 6:44-47 ("[t]he heating element 222 can comprise wicking material . . .", Fig. 2. [redacted]

Fourth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System has "at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends in a straight path from the first aperture to the second aperture." CX-2951.0031-0035. Most of Respondent's reasoning is the same as its arguments summarized above. For at least the same reasons explained above, this is incorrect.

Fifth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System "has a first aperture and a second aperture that are part of the alleged housing" because the [redacted] CX-2951.0035. However, as set forth above, the recited "housing" is defined by the exterior portions of the tank cap and the tank components. *See* Section IV.E.1.a)(1)(b). There is no restriction that the "housing" must be a single component such as a single molded plastic piece. In fact, the Asserted Patents specifically teach that the "housing" may comprise end caps. JX-0001 (864 Patent) at 5:34-36.

Sixth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System's housing has a "first aperture on the first end and a second aperture on the second end." CX-2951.0035. With respect to the first aperture, Respondent asserted that [redacted]

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[redacted] *Id.*, .0036. As explained above, [redacted] *See* Section IV.E.1.a)(1)(c). There is no requirement that the recited "end" must be a plane. In fact, the Asserted Patents teach a preferred embodiment where first end is not a plane. *See* JX-0001 (864 Patent) at Fig. 2. With respect to the second aperture, Respondent asserted that what Complainant identifies as the second aperture [redacted] CX-2951.0036. As set forth above, [redacted] *See* Section IV.E.1.a)(1)(c). The existence of an additional mouthpiece is not relevant to whether the JUUL System infringes claims 19 and 26 of the 881 Patent.

Complainant anticipates that Respondent will further argue that [redacted] CX-2951.0037. As set forth above, this is incorrect.

Seventh, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System "has an airflow passageway that is separate and distinct from the alleged housing." CX-2951.0038-0039. To the extent Respondent argues that the airflow passageway must be a separate component from the housing from a manufacturing stand point, Respondent's overly rigid reading of the claim is incorrect. The evidence will show that the fact that the claim recites two elements does not signal to a POSITA that these two elements must be physically separable. Moreover, the evidence will show that the Asserted Patents teach that

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[redacted]

components may share structure. *See* JX-0005 (881 Patent) at Fig. 2 (showing that many components share boundaries).

Eighth, Complainant anticipates that Respondent will argue that Complainant fails to show that "the housing's electrically conductive portion is adapted to 'mechanically' couple to the electrically conductive portion of the power source." CX-2951.0039. As explained above, [redacted] Section IV.E.1.a)(1)(e).

JLI also argues [redacted] CX-2951.0039. As explained above, [redacted] Section IV.E.1.a)(1)(b). There is no requirement that the housing must be a single component such as a single molded plastic piece.

Ninth, Complainant anticipates that Respondent will argue that Complainant fails to show that "the first end of the housing being adapted to electrically couple to the power source" because [redacted] CX-2951.0040. For the reasons explained above, this is incorrect.

Tenth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System has a solution holding medium or solution holding medium reservoir. CX-2951.0040-0042. The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50. Complainant's expert, Dr. Vallee, does not provide an opinion under Respondent's proposed construction subject to § 112(6). With respect to other proposed constructions, Respondent argues that "the alleged solution holding medium and the

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[redacted]

alleged solution holding medium reservoir are not adapted to hold a solution…[because they] [redacted] *Id.*, .0040. As explained above, the JUUL Pod includes a liquid reservoir in which e-liquid is stored. Section IV.E.1.a)(1)(b). The fact that multiple components structurally define the boundary of the reservoir does not negate its existence.

Complainant anticipates that Respondent will argue that the asserted claims require the solution holding medium / solution holding medium reservoir to be separate and distinct from the interior of the housing / airflow passageway. CX-2951.0042. However, there is no such requirement in the claim. Moreover, [redacted]

Eleventh, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System includes "the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway." CX-2951.0044. For the same reasons set forth above, this is incorrect.

Twelfth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System has a heating element extending transversely across the airflow passageway. CX-2951.0044. Complainant's expert, Dr. Vallee, does not address Respondent's arguments under the assumptions that [redacted]

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[redacted]

Moreover, a heating element may comprise a wick, and as explained above the heating element of the JUUL System meets these claim limitations requiring a transverse heating element.

Complainant anticipates that Respondent will also argue that [redacted] *Id.*, .0046. As explained above, the asserted patents specifically teach that the recited heating element may include a wicking material. Section IV.E.1.a)(1)(h). Respondent's argument is therefore unavailing.

Thirteenth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System has a "heating element." CX-2951.0047-0048. As explained above, the JUUL System has a heating element. Section IV.E.1.a)(1)(h). The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48. Respondent's argument relating to the helical heating element is irrelevant to Complainant's expert, Dr. Vallee's, analysis because Dr. Vallee does not provide opinions under Respondent's proposed construction if subject to §112(6), which is the only proposed construction requiring a helical coil structure.

Fourteenth, Complainant anticipates that Respondent will argue that Complainant fails to show that the airflow separates and passes "on both transverse sides of the heating element" because, among other things, the heating element of the JUUL Pod is [redacted]

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[redacted] CX-2951.0048. Respondent's other arguments are addressed above. *See* Section IV.E.1.a)(1)(h).

Fifteenth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System includes "the heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow." CX-2951.0049-0051. The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48. To the extent Respondent's assertion is that the term is indefinite, this is incorrect. *See* CX-0217.0023-0027. The evidence will show that the term means that the heating element is configured to vaporize solution, wherein the vaporization occurs in the airflow, and the purpose of vaporization is oral provision to an individual.

Complainant anticipates that Respondent will argue that "to the extent vaporization must happen in the airflow, which is how NJOY interprets the claimed function, the JUUL1 System does not infringe because the alleged heating element is [redacted] CX-0217.0050. [redacted] *See* Section IV.E.1.a)(1)(f).

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[redacted]

Respondent further asserted under the assumption that "the claim requires a portion of the solution to be vaporized while that portion of the solution is in the alleged solution holding medium." CX-0217.0050. This reading of the term is incorrect. The evidence will show that a POSITA would understand that the term to mean, consistent with the Fuma v. RJRV Litigation court's construction, that "[t]he solution can be, but need not be, in the solution holding medium when vaporized by the heating element." CX-2316.0013. As the court explained, Respondent's interpretation "goes beyond the plain language of the claim by requiring that the solution must be vaporized while it is in the solution holding medium. Certainly the claims cover vaporizing the solution while it is in the solution holding medium, but the words of the claim do not say the solution must be in the solution holding medium when it is vaporized." *Id.*, .0014. The evidence will show that the the court's reasoning is consistent with a POSITA's understanding of the claim.

Complainant anticipates that Respondent will argue that [redacted] CX-2951.0050. However, the asserted claims do not limit the nature of substance for oral provision. The fact that [redacted] does not affect Complainant's infringement analysis and is contemplated by the Asserted Patents. JX-0005 (881 Patent) at 5:3-6 ("Indirect or direct flame may also be used as a power source as appropriate to trigger the state change of the solution 128 from an initial state to a gaseous aerosol state."). Moreover, the evidence will show that a POSITA would understand that after e-liquid is vaporized to create vapor, it mixes with air to form an aerosol within an e-cigarette device before reach the user. [redacted]

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[redacted]

Moreover, Complainant anticipates that Respondent will argue that the existence of the mouthpiece precludes a finding of infringement for this limitation. CX-2951.0050-0051. This is incorrect. The existence of the mouthpiece has no effect on the fact that the heating element is configured to vaporize solution in the airflow.

Sixteenth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System includes "the heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture." CX-2951.0052-0055. The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48. To the extent Respondent's argument is that the term is indefinite, this is incorrect. See CX-0217.0023-0027. The evidence will show that the term means that the heating element is configured to vaporize solution, wherein the vaporization occurs in the airflow, and the purpose of vaporization is oral provision to an individual from the second aperture.

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[redacted]

Respondent's reading of the claim term that "vaporization must happen in the airflow from the second aperture" or that "the claim requires a portion of the solution to be vaporized while that portion of the solution is in the airflow from the second aperture" is incorrect. CX-2951.0052-0053. The term "in an airflow from the second aperture" modifies the "individual" and not vaporization or a portion of the solution. Regardless, the airflow from the first aperture to the second, and the airflow from the second aperture are the same airflow.

Respondent's reading of the claim term that "requires a portion of the solution to be vaporized while that portion of the solution is in the alleged solution holding medium" is also incorrect for the same reason explained above.

Complainant anticipates that Respondent will argue that "[t]o the extent that oral provision, or oral provision to an individual, must occur in the airflow (from the second aperture), which is how NJOY's expert Dr. Vallee interprets the claimed function, NJOY has not met its burden of showing that this limitation is met because [redacted] Therefore, the existence of a mouthpiece does not affect Complainant's infringement analysis.

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[redacted]

In response to Respondent's arguments relating to heating element on pages 53-54 of its contentions, the Asserted Patents specifically disclose that heating element 222 can comprise wicking material.

Complainant anticipates that Respondent will argue that "the '881 Patent claims two distinct airflows – one 'through the cartridge from the first aperture to the second aperture of the housing' and the other 'from the second aperture'" and that NJOY fails to show "an airflow from the second aperture" that is distinct from "an airflow through the cartridge from the first aperture to the second aperture of the housing." CX-2951.0055. This is an incorrect reading of the claim. The evidence will show that a POSITA would understand that the airflow from the first aperture to the second aperture is the same continuous airflow as the airflow from the second aperture. The claim language simply describes two portions of the same airflow.

Seventeenth, Complainant anticipates that Respondent will argue that Complainant fails to show that the JUUL System includes "a power source adapted to be electrically coupled to the first end of the housing" or "the electrically conductive portion of the power source being mechanically and electrically coupled to the electrically conductive portion of the first end of the housing." CX-2951.0056. As explained above, [redacted] Section IV.E.1.a)(1)(a).

Complainant anticipates that Respondent will argue that certain testimony from NJOY engineer Jose Bonet supports its position that certain claims are not infringed by JUUL or practiced by NJOY ACE. Respondent's attempt to solicit expert testimony from a lay witness was improper and should be given little, if any, weight. Indeed, Mr. Bonet had never reviewed the Asserted Patents and was not testifying in the capacity of someone who has read and understood the meaning

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[redacted]

and scope of the claims in the context of the Asserted Patents. Moreover, Mr. Bonet was not intimately familiar with the JUUL System.

[redacted]

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[redacted]

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[redacted]

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[redacted]

2. Indirect Infringement

As demonstrated above, the JUUL System meets every limitation of claims 19 and 26 of the 881 Patent. Respondent directly infringes the 881 Patents by using, importing, offering to sell, and selling the JUUL System.

Respondent also indirectly infringes by actively, knowingly, and intentionally inducing infringement of claims 19 and 26 of the 881 Patent and contributes to infringement by actively encouraging others to make, use, offer for sale, sell, and/or import the Accused Products.

Respondent has had actual knowledge of the 881 Patent since at least the filing of the Complaint in this Investigation and the companion action in the U.S. District Court for the District of Delaware on August 22, 2023. Moreover, Respondent's corporate representative Michael Eng testified that Respondent first became aware of the 881 Patent in or around March of 2019. CX-0310C (03/14/2024 Eng) at 29:19-25.

a) JUUL System

Respondent actively, knowingly, and intentionally induces infringement claims 19 and 26 of the 881 Patent under 35 U.S.C. § 271(b). With knowledge of the 881 Patent, Respondent provides the JUUL device and JUULpod to its customers in the United States and encourages consumers to distribute, sell, and use the JUUL device and JUULpod in an infringing manner, including by selling and importing the JUUL device and JUULpods and providing instructions to consumers on how to combine and use the JUUL device with JUULpods. *See* CX-0024.0006-.0007 (JLI website providing instructions on "How to setup your JUUL Device" and "How to use JUUL"); CX-2353; CX-2218.

Respondent also actively promotes the use of JUUL device with JUULpods through marketing materials, technical specifications, and user manuals. *See, e.g.*, CX-2973; CX-2235. Respondent also actively encourages the sale and importation of JUUL devices and JUULpods

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[redacted]

through its sales and distribution channels. For example, Respondent sells the JUUL device and JUULpods, and instructs its distributors, customers, and/or end-users to combine the devices, such that the asserted claims that require both the device and cartridges are practiced. Respondent has specific intent to induce, or is willfully blind to inducing infringement of the 881 Patent. The encouraged acts, *e.g.,* the distribution, importation, offering for sale, selling, using, and testing of the JUUL device and JUULpods and the making, distribution, importation, offering for sale, selling, using, and testing of the downstream products incorporating the JUUL device and JUULpods constitute direct infringement of claims 19 and 26 of the 881 Patent. Respondent continues to engage in these activities with knowledge of the 881 Patent and knowledge that its actions induce others to directly infringe the 881 Patent.

Respondent also contributes to infringement under 35 U.S.C. § 102(c) by providing or selling the JUUL device and/or the JUULpod. The JUUL device and JUULpod constitute a material part of the claims 19 and 26 of the 881 Patent, are specifically designed and made for use in an infringing manner, and are not staple articles of commerce suitable for any substantial non-infringing use. For example, the JUULpod is designed solely for and specifically adapted for use with the JUUL device, and vice versa. *See, e.g.*, JX-0510C, JX-0511C, JX-0515C. Respondent in its PMTA submission for the JUUL System stated that the "JUULpods…are designed and intended to be used with the JUUL Device." CX-2221C.0008. Respondent's importation of the JUUL System, or components thereof, contributes to direct infringement by consumers in the United States. Respondent continues to engage in these activities with knowledge of the 881 Patent and knowledge that its acts contribute to infringement.

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[redacted]

3. Domestic Industry – Technical Prong

a) The Vuse Solo System Practices the Claims at Issue

As demonstrated on an element-by-element basis below, the VUSE Solo System practices claims 1 of the 881 Patent. Complainant's technical domestic industry presentation will include the testimony of Complainant's technical expert, Dr. Vallee, and other evidence.

(1) Claim 1[11]

The VUSE Solo System that utilizes the VUSE Solo G1 Cartridge or the VUSE Solo G2 Cartridge practices claim 1 of the 881 Patent for at least the reasons explained below.

(a) [1.1] An apparatus comprising:

The VUSE Solo System is an apparatus.

Specifically, the VUSE Solo System is an electronic vaporizer, as depicted below. *See also* 864 Patent at 1:20-23 ("Electronic cigarettes (also referred to as e-cigarettes or personal vaporizers) ….").

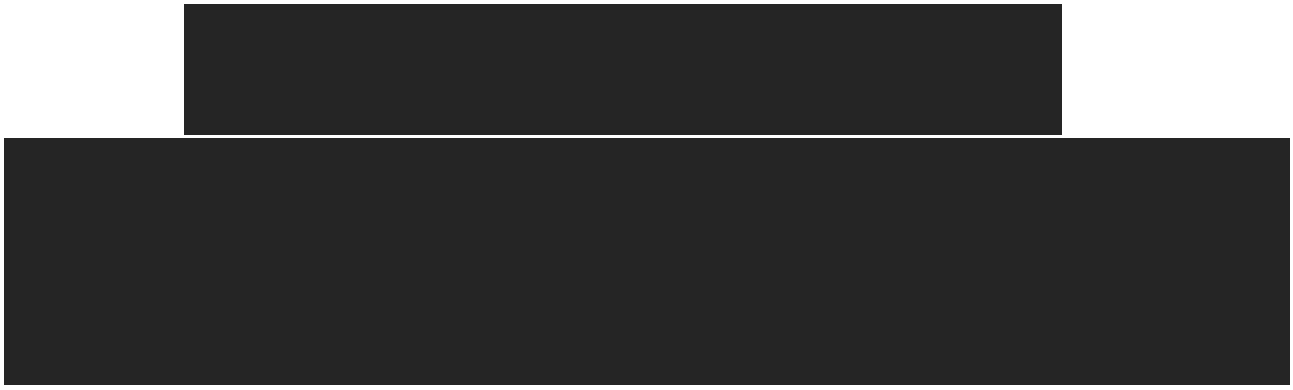


CX-2324 (Image of Assembled VUSE Solo from vusevapor.com)

Further, RJR describes the VUSE Solo as [redacted] in its PMTA:

[11] Complainant asserts claim of the 881 Patent for domestic industry only.

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JX-0577C.0012 (VUSE Solo PMTA)

Accordingly, the VUSE Solo System practices claim limitation [1.1].

(b) [1.2] a power source, wherein the power source includes a battery, wherein the power source includes an electrically conductive portion; and:

The VUSE Solo System includes a power source (*i.e.*, the VUSE Solo Power Unit), wherein the power source includes a battery and an electrically conductive portion.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

As shown below, the VUSE Solo Power Unit [A] has a battery [B] and electrical contacts on an electrically conductive portion [C] that connect with corresponding electrical contacts on the VUSE Solo Cartridge (G1 or G2):

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[redacted]



CX-2157 (Vallee Opening Report) ¶ 1859 (Photo of a VUSE Solo Power Unit [A] Containing a Battery [B])



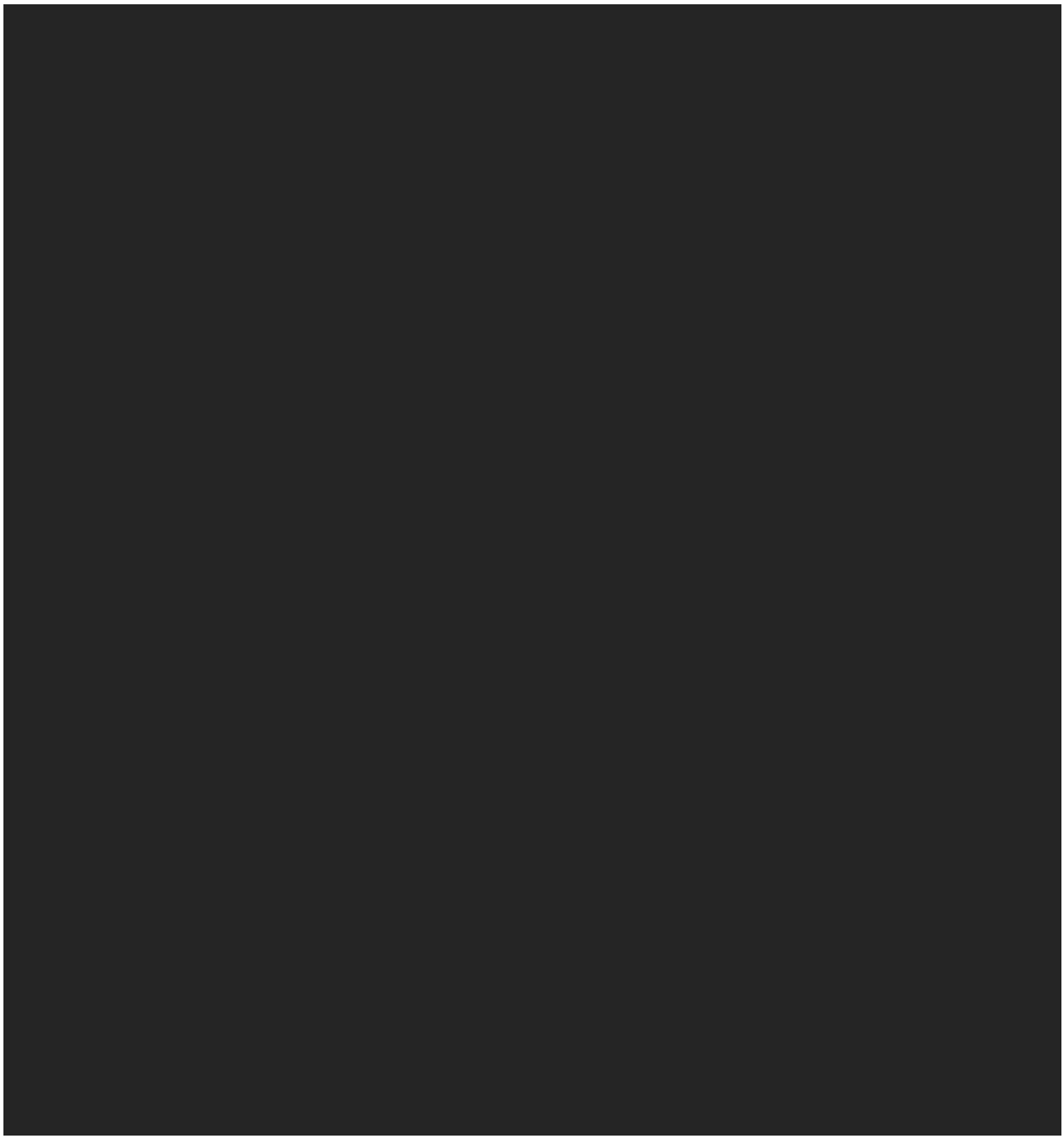
CX-157 (Vallee Opening Report) ¶ 1859 (Photo of a VUSE Solo Power Unit That Identifies the Electrically Conduct Portion [C] (top) and Shows the Electrical Contacts (bottom))

The VUSE Solo PMTA explains how the VUSE Solo Power Unit [redacted]:

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JX-0577C.0013 (VUSE Solo PMTA)



JX-0577C.0014 (VUSE Solo PMTA)

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JX-0577C.0018 (VUSE Solo PMTA)

The VUSE Solo PMTA also describes how the VUSE Power Unit includes a [redacted]:

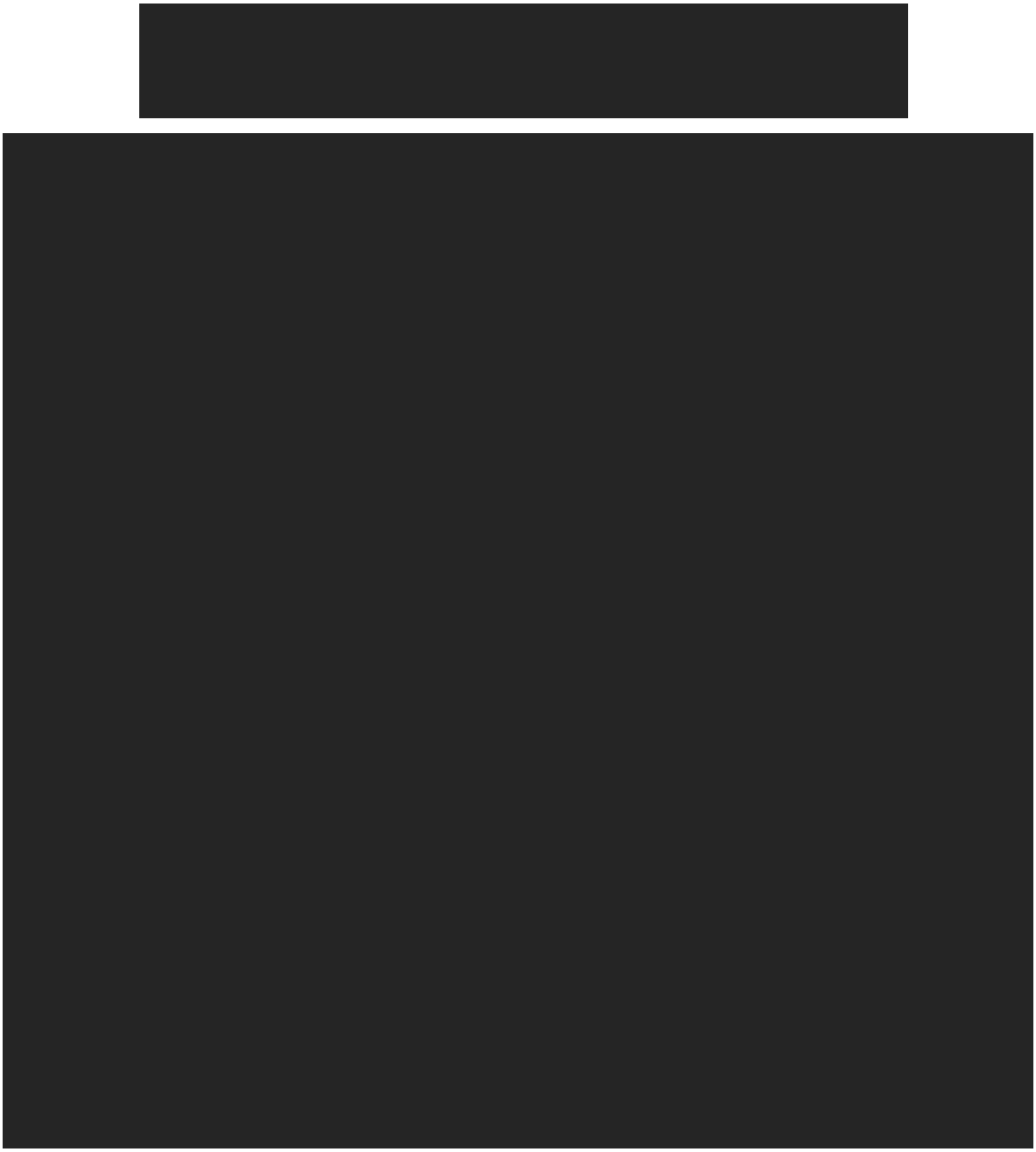
NJOY Exhibit 2007.511
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[redacted]



JX-0577C.0015 (VUSE Solo PMTA)

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JX-0577C.0046 (VUSE Solo PMTA)



JX-0577C.0099 (VUSE Solo PMTA)

Accordingly, the VUSE Solo System practices claim limitation [1.2].

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[redacted]

(c) [1.3] a cartridge having a housing that comprises an interior, wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end,

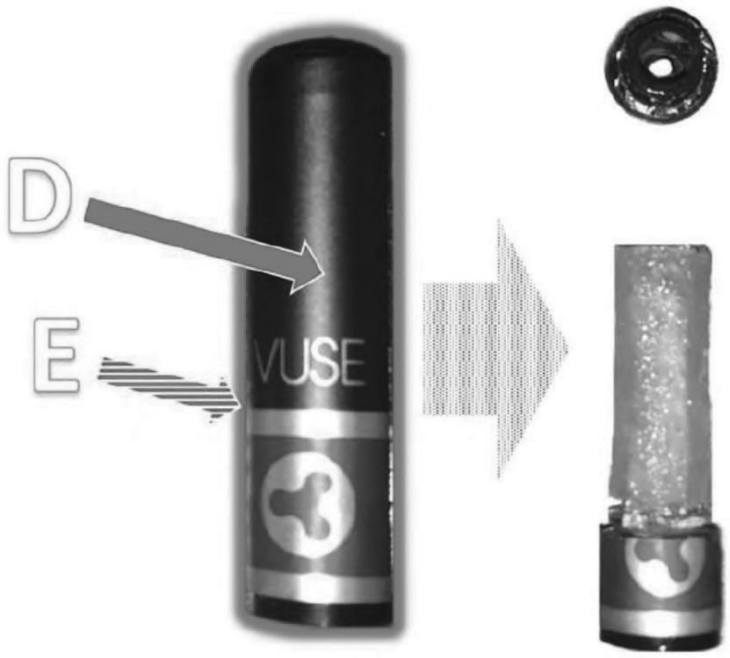
The VUSE Solo System includes a cartridge (*i.e.*, a VUSE Solo G1 Cartridge or VUSE Solo G2 Cartridge) that has a housing with an interior, wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end.

As depicted below, each of the VUSE Solo G1 Cartridge and the VUSE Solo G2 Cartridge [D] includes a housing [E] having a first aperture [H] on a first end [F] of the housing and a second aperture [I] on a second end [G] of the housing. The housing has an interior.

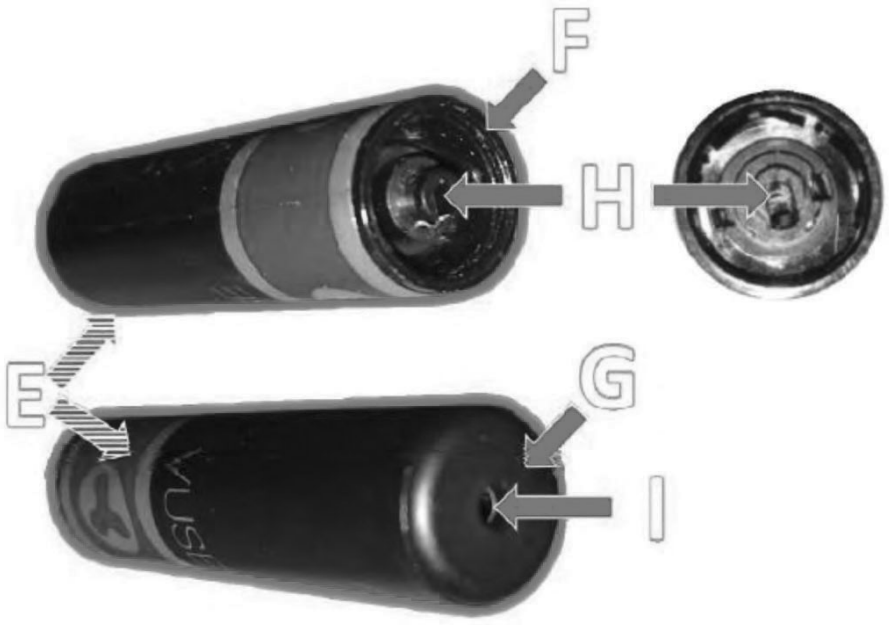


CX-2157 (Vallee Opening Report) ¶ 1864 (Photo of the VUSE Solo G1 Cartridge [D] with Housing [E] (Left), and the VUSE Solo G1 Cartridge [D] with the Housing [E] Removed to Show the Interior (Right))

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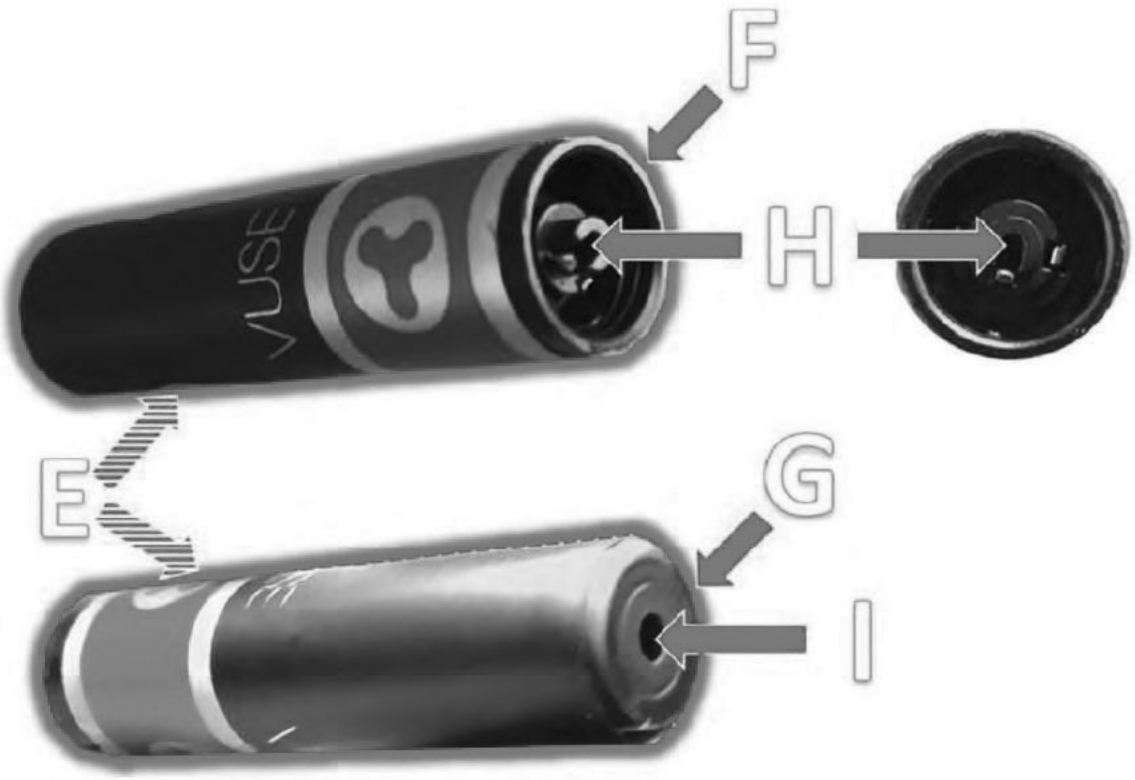
CX-2157 (Vallee Opening Report) ¶ 1864 (Photo of the VUSE Solo G2 Cartridge [D] with Housing [E] (Left), and the VUSE Solo G1 Cartridge [D] with the Housing [E] Removed to Show the Interior (Right))



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[redacted]

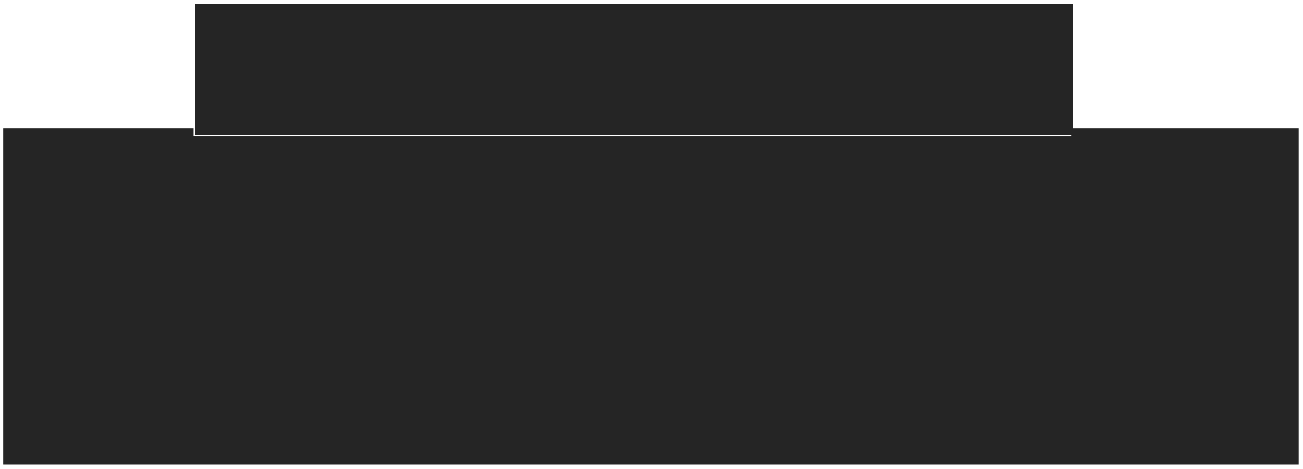
CX-2157 (Vallee Opening Report) ¶ 1864 (Photo of the VUSE Solo G1 Cartridge Housing [E] With a First Aperture [H] on the First End [F] of the Housing, and a Second Aperture [I] on a Second End [G] of the Housing)



CX-2157 (Vallee Opening Report) ¶ 1864 (Photo of the VUSE Solo G2 Cartridge Housing [E] With a First Aperture [H] on the First End [F] of the Housing, and a Second Aperture [I] on a Second End [G] of the Housing)

The VUSE Solo Cartridge's housing is formed by the exterior structures of the [redacted], which are identified below in the VUSE Solo PMTA. *See also* Section IV.E.3.a)(1)(e) (explaining that the first end of the housing of the VUSE Solo Cartridge also includes electrical contacts [K] that permit electrical coupling). The Cartridge Base has a first aperture [H] formed therein. The [redacted] has a second aperture [I] formed therein.

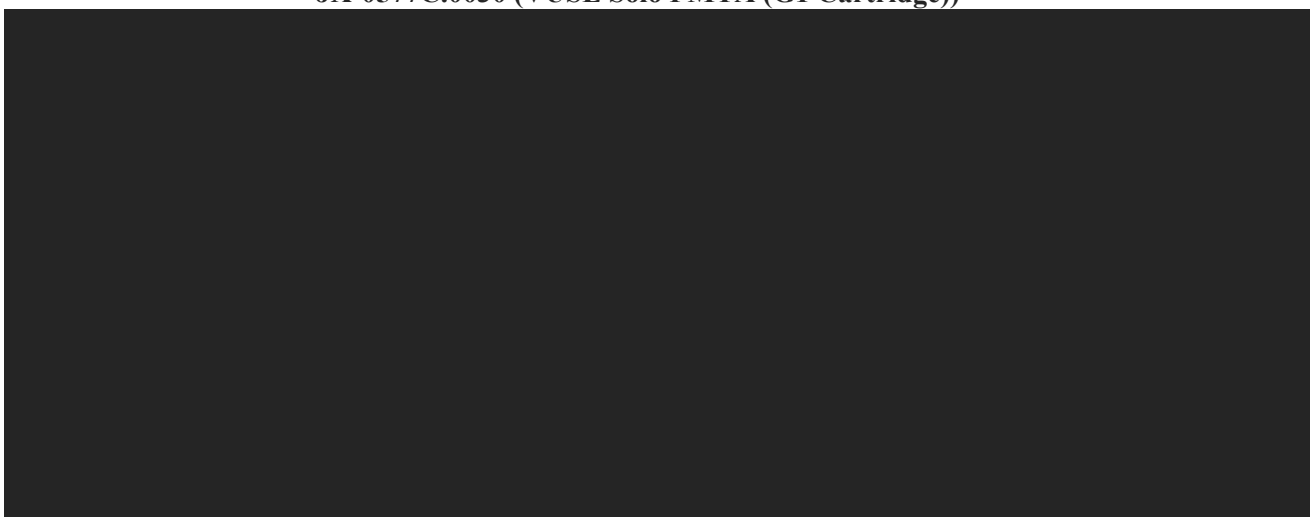
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JX-0577C.0028 (VUSE Solo PMTA (G1 Cartridge))



JX-0577C.0030 (VUSE Solo PMTA (G1 Cartridge))



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JX-0577C.0036 (VUSE Solo PMTA (G2 Cartridge))



JX-0577C.0039 (VUSE Solo PMTA (G2 Cartridge))

Accordingly, the VUSE Solo System practices claim limitation [1.3].

(d) [1.4] wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing,

The VUSE Solo System includes a cartridge (*i.e.*, a VUSE Solo G1 Cartridge or VUSE Solo G2 Cartridge) with a housing that includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is

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[redacted]

configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing.

The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

As depicted below, within the housing [E] of each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge there is an airflow passageway [J] extending centrally and axially between the first and second apertures [H, I], such that the airflow can pass through the cartridge from the first to the second aperture.

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CX-2157 (Vallee Opening Report) ¶ 1869 (Photo of VUSE Solo G1 Cartridge That Includes in Its Housing [E] an Airflow Passageway [J] that Extends Centrally and Axially from a First Aperture [H] to a Second Aperture [I])



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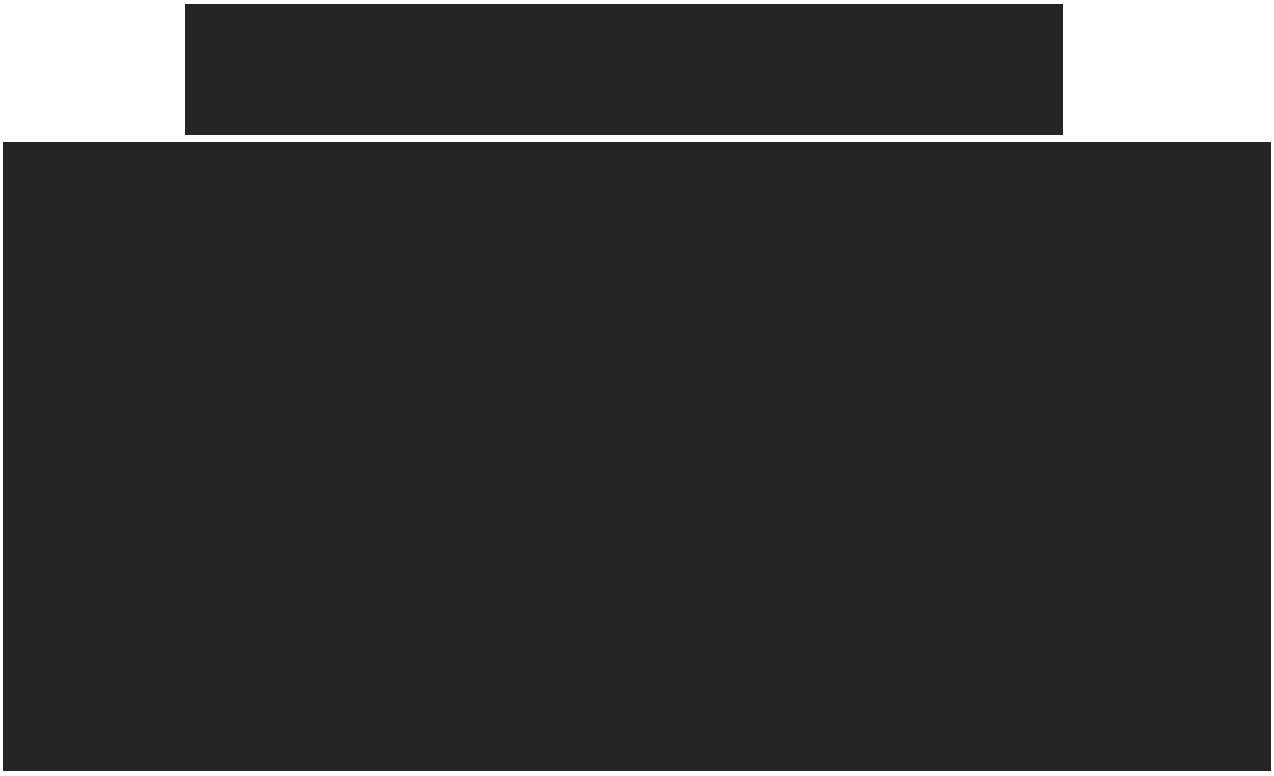
CX-2157 (Vallee Opening Report) ¶ 1869 (Photo of VUSE Solo G2 Cartridge [D] That Includes in Its Housing [E] an Airflow Passageway [J] that Extends Centrally and Axially from a First Aperture [H] to a Second Aperture [I])

The centrally and axially extending airflow passageway is also depicted and described in the VUSE Solo PMTA, which explains that [redacted].



JX-0577C.0032 (VUSE Solo PMTA ("[redacted]"))

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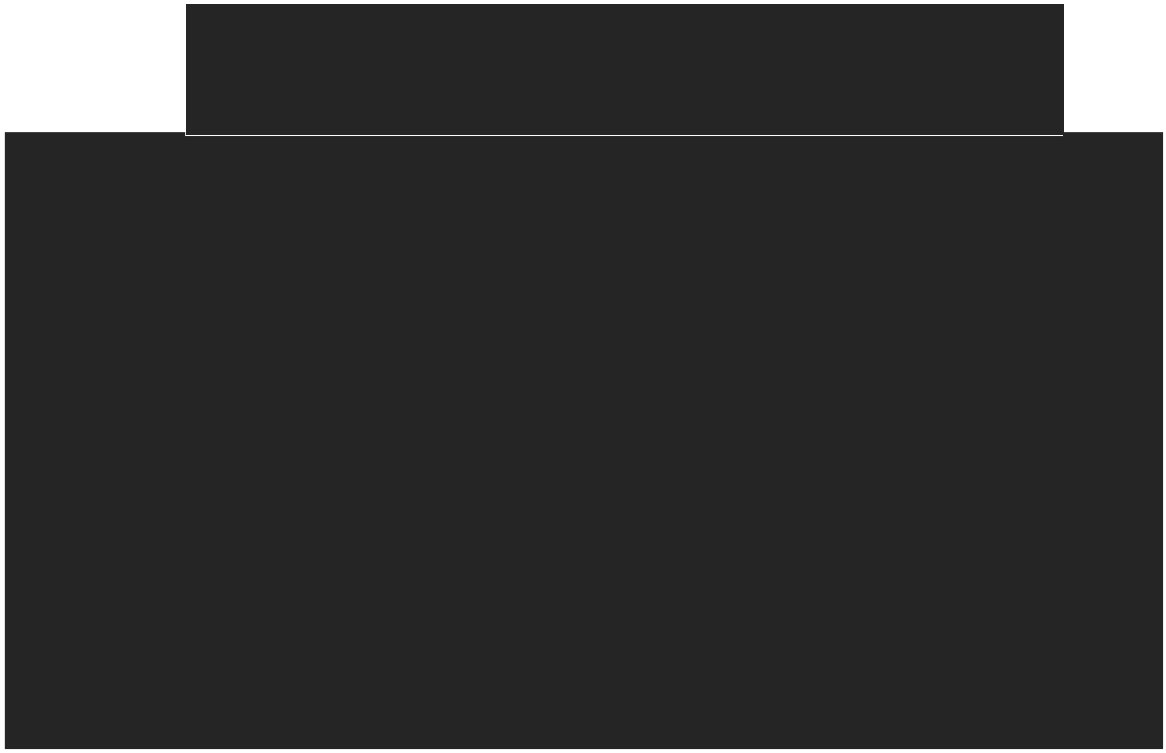


JX-0577C.0033 (VUSE Solo PMTA (G1 Cartridge))



JX-0577C.0040 (VUSE Solo PMTA (“ ”))

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JX-0577C.0041 (VUSE Solo PMTA (G2 Cartridge))

Accordingly, the VUSE Solo System practices claim limitation [1.4].

(e) [1.5] wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source,

The VUSE Solo System includes a cartridge (*i.e.*, the VUSE Solo G1 Cartridge or the VUSE Solo G2 Cartridge) with a housing, wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source (*i.e.*, VUSE Solo Power Unit).

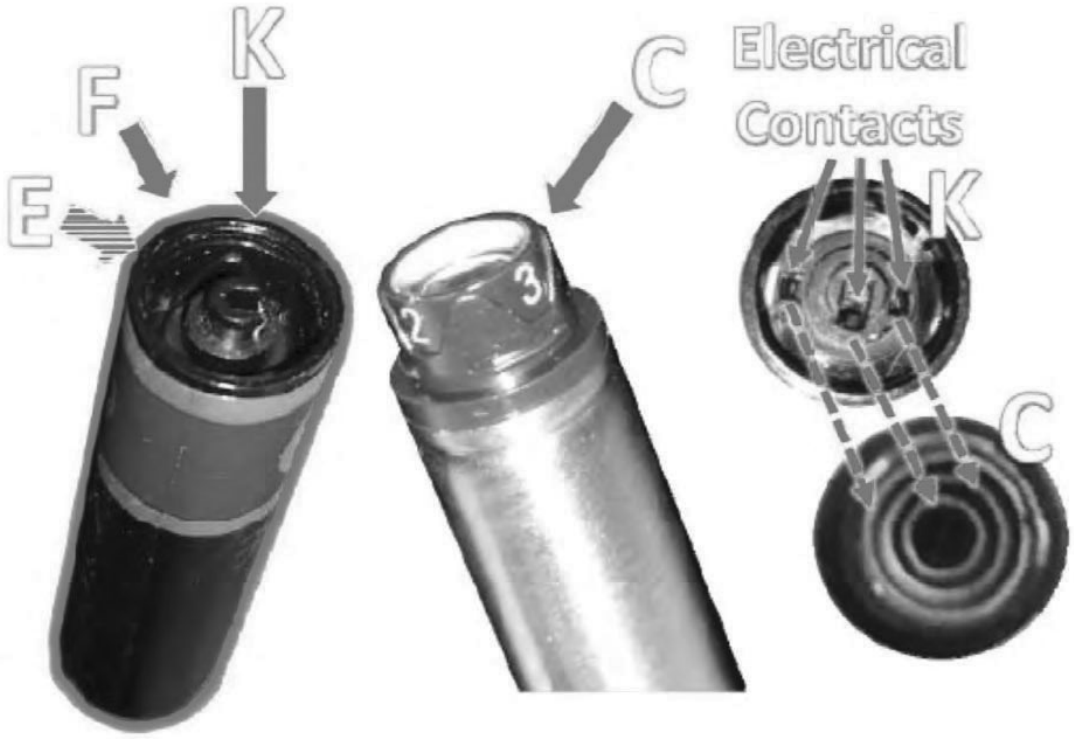
The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

As depicted below, the first end [F] of the housing [E] of each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge includes an electrically conductive portion that mechanically and electrically couples to the electrically conductive portion [C] of the power

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[redacted]

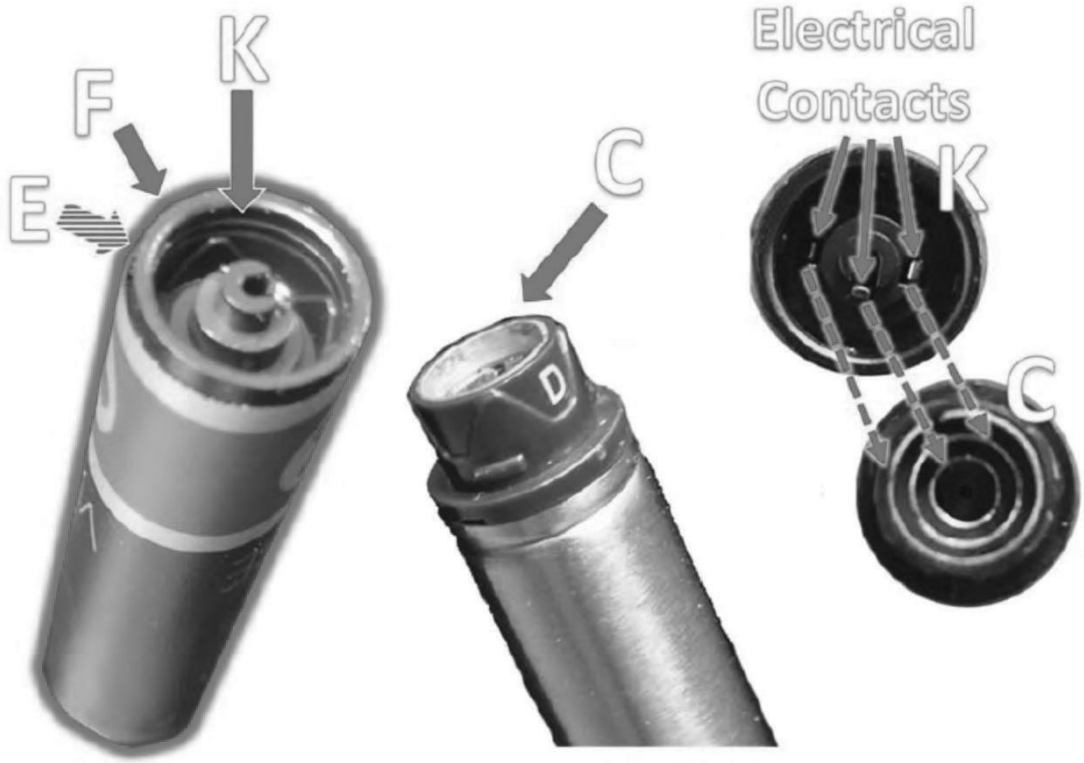
source. The first end of the housing of the VUSE Solo Cartridge has electrical contacts [K] that permit electrical and mechanical coupling.



CX-2157 (Vallee Opening Report) ¶ 1873 (Photo of VUSE Solo G1 Cartridge Housing [E] With a First End [F] Adapted to Electrically Couple [K] and Mechanically Couple to a Conductive Portion [C] of the VUSE Solo Power Unit)

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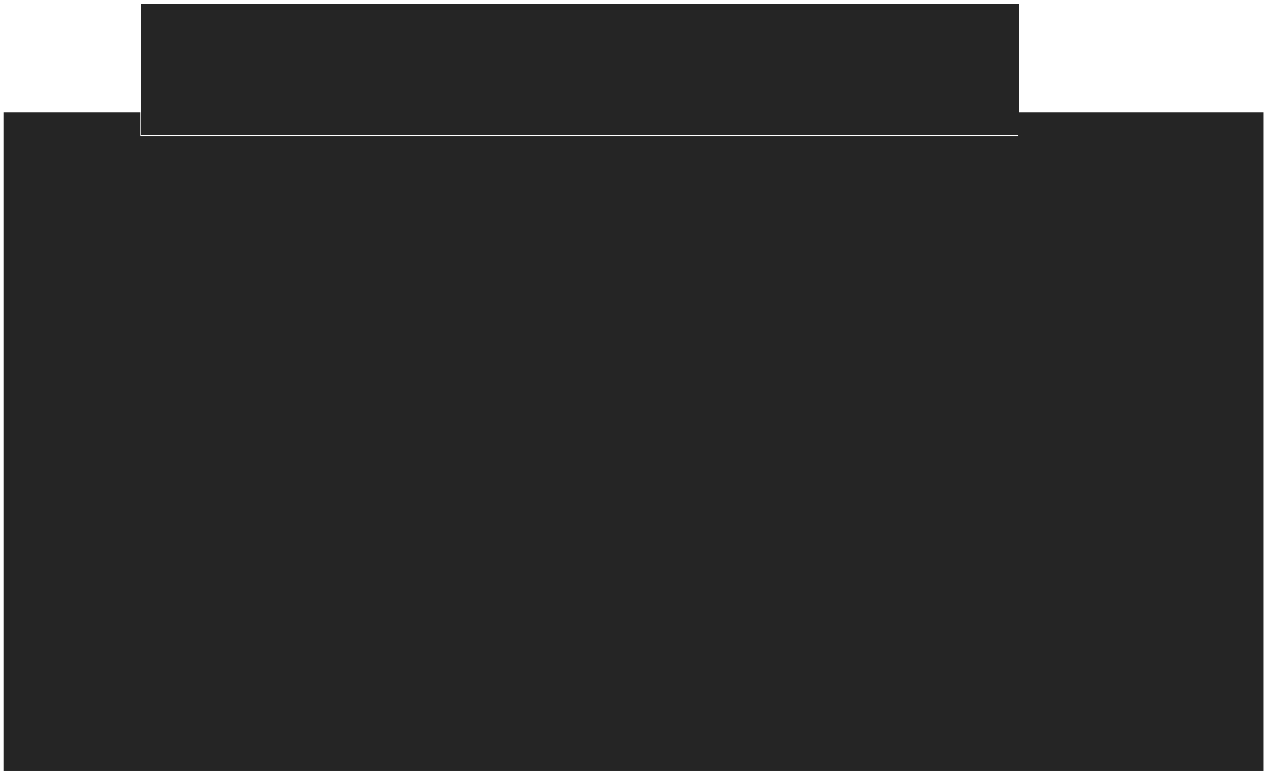
[redacted]



CX-2157 (Vallee Opening Report) ¶ 1873 (Photo of VUSE Solo G2 Cartridge Housing [E] With a First End [F] Adapted to Electrically Couple [K] and Mechanically Couple to a Conductive Portion [C] of the VUSE Solo Power Unit)

The electrical contacts [K] on the first end [F] of the housing [E] can be better seen in a [redacted] that RJR produced in the Fuma RJR Litigation:

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CX-2157 (Vallee Opening Report) ¶ 1874

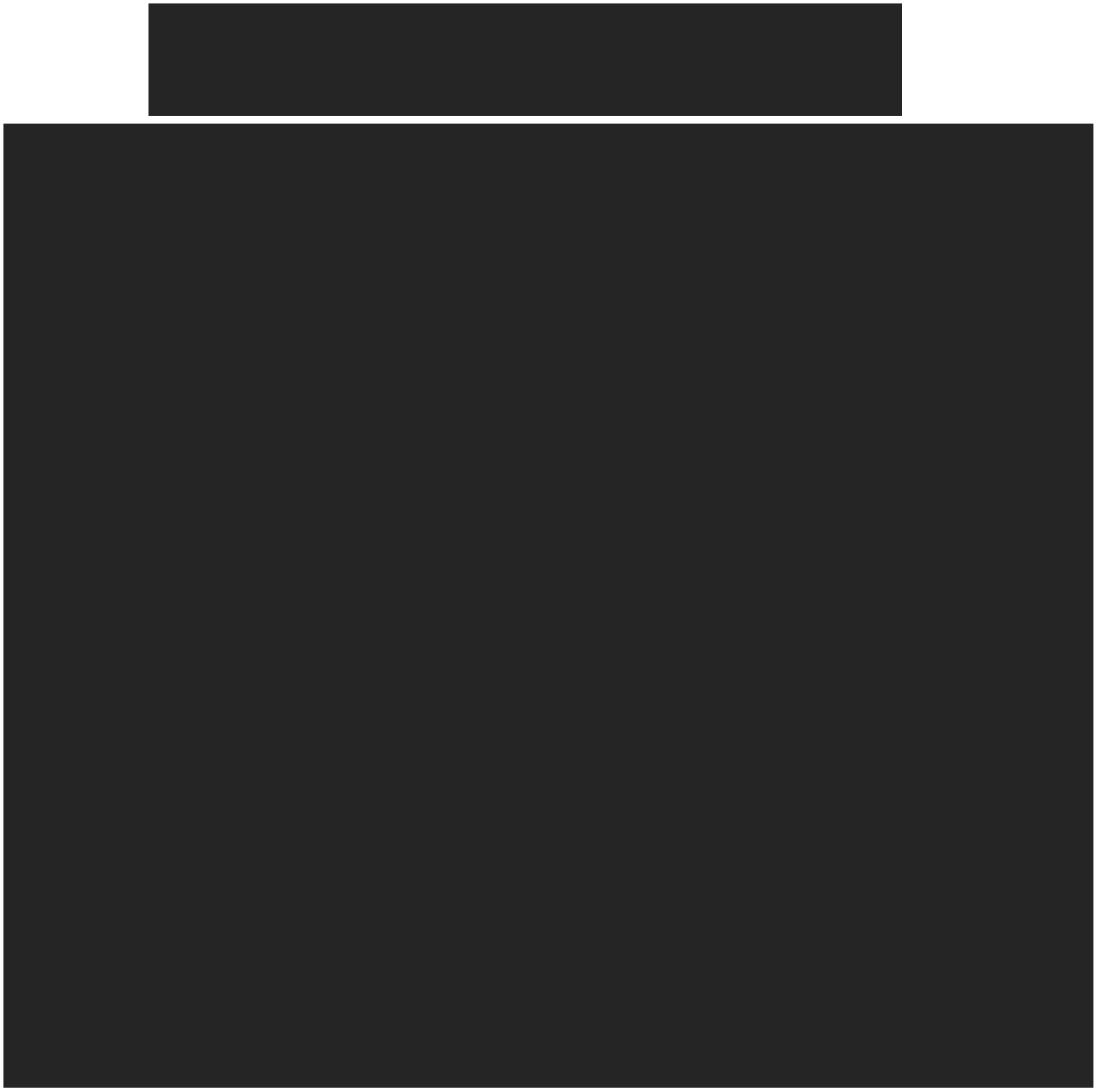
Additionally, the VUSE Solo PMTA describes how the VUSE Solo G1 Cartridge housing and VUSE Solo G2 housing include a first end with electrical contacts to couple to the VUSE Solo Power Unit:

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JX-0577C.0028 (VUSE Solo PMTA (G1 Cartridge))

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JX-0577C.0029 (VUSE Solo PMTA (G1 Cartridge))



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JX-0577C.0036 (VUSE Solo PMTA (G2 Cartridge))



JX-0577C.0037 (VUSE Solo PMTA (G2 Cartridge))

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[redacted]



JX-0577C.0038 (VUSE Solo PMTA (G2 Cartridge))

NJOY Exhibit 2007.530
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JX-0577C.0046 (VUSE Solo PMTA ( ))

The VUSE Solo PMTA also explains that

:



JX-0577C.0012 (VUSE Solo PMTA)

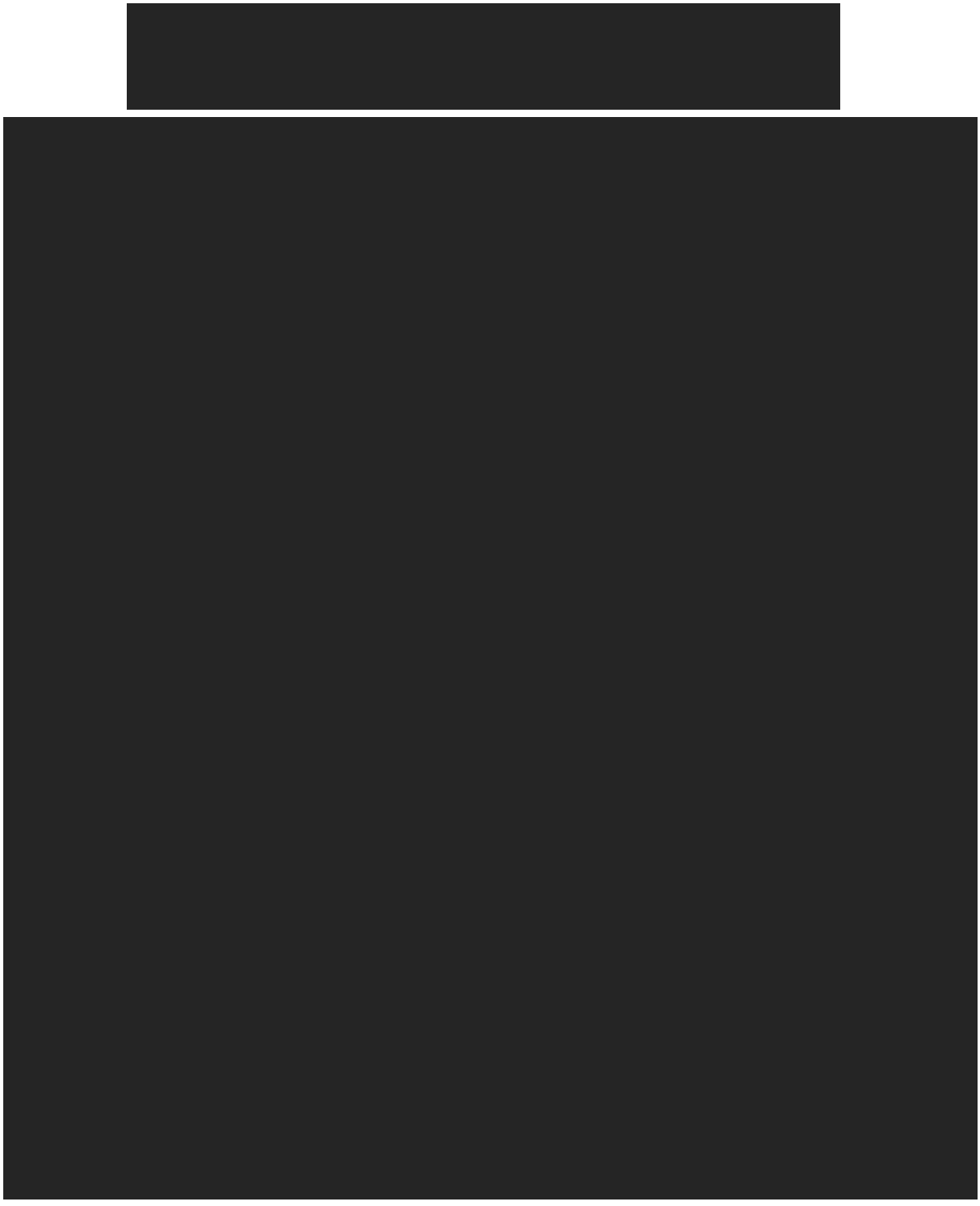
NJOY Exhibit 2007.531
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[redacted]



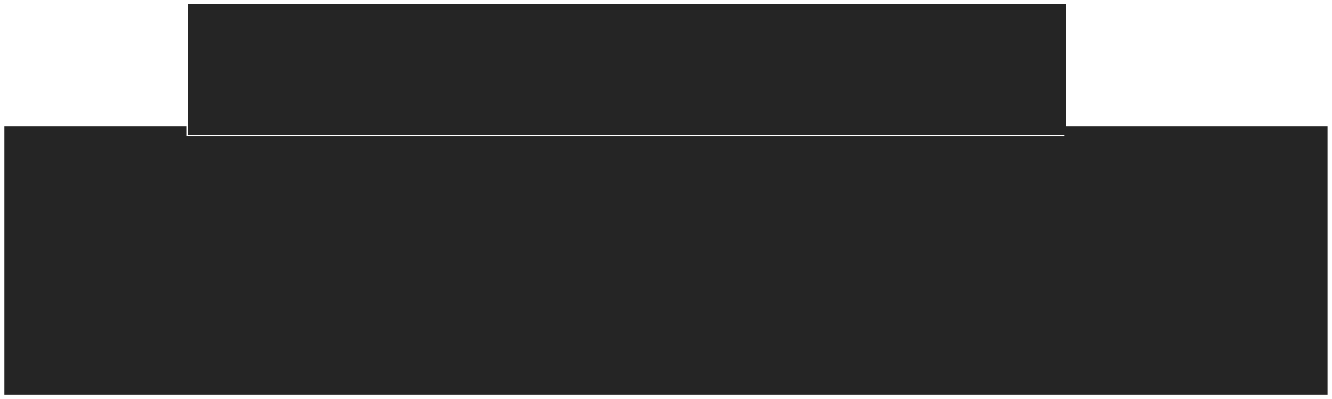
JX-0577C.0015 (VUSE Solo PMTA)

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JX-0577C.0016 (VUSE Solo PMTA)

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JX-0577C.0099 (VUSE Solo PMTA)



JX-0577C.0047 (VUSE Solo PMTA)

Accordingly, the VUSE Solo System practices claim limitation [1.5].

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[redacted]

(f) [1.6] wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing,

The VUSE Solo System includes a cartridge (*i.e.*, the VUSE Solo G1 Cartridge or the VUSE Solo G2 Cartridge) with a housing that includes a solution holding medium (*i.e.*, a batting, the portions of the wick outside the heating coil, any portion of the chamber in which liquid solution resides, or a combination thereof) adapted to hold a solution in the interior of the housing.

The term "solution holding medium adapted to hold a solution" has been construed "to have its plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." CC Order at 48-50.

The VUSE Solo Cartridge's housing [E] has an interior and a solution holding medium [L] (*i.e.*, a batting, the portions of the wick outside the heating coil, and any portion of the chamber in which liquid solution resides, or a combination thereof) adapted to hold a solution. CX-2157 (Vallee Opening Report) ¶ 1880. At least the batting, the portions of the wick outside the heating coil, any portion of the chamber in which liquid solution resides, or a combination thereof are a location, container, or mechanism to hold solution. *Id.* ¶ 1880.

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[redacted]



CX-2157 (Vallee Opening Report) ¶ 1880 (Photo of VUSE Solo G1 Cartridge Housing [E] (Left), Interior with Batting [L] (Middle), and Without Batting to Show the Portions of the Wick Outside the Heating Coil [L] (Right))

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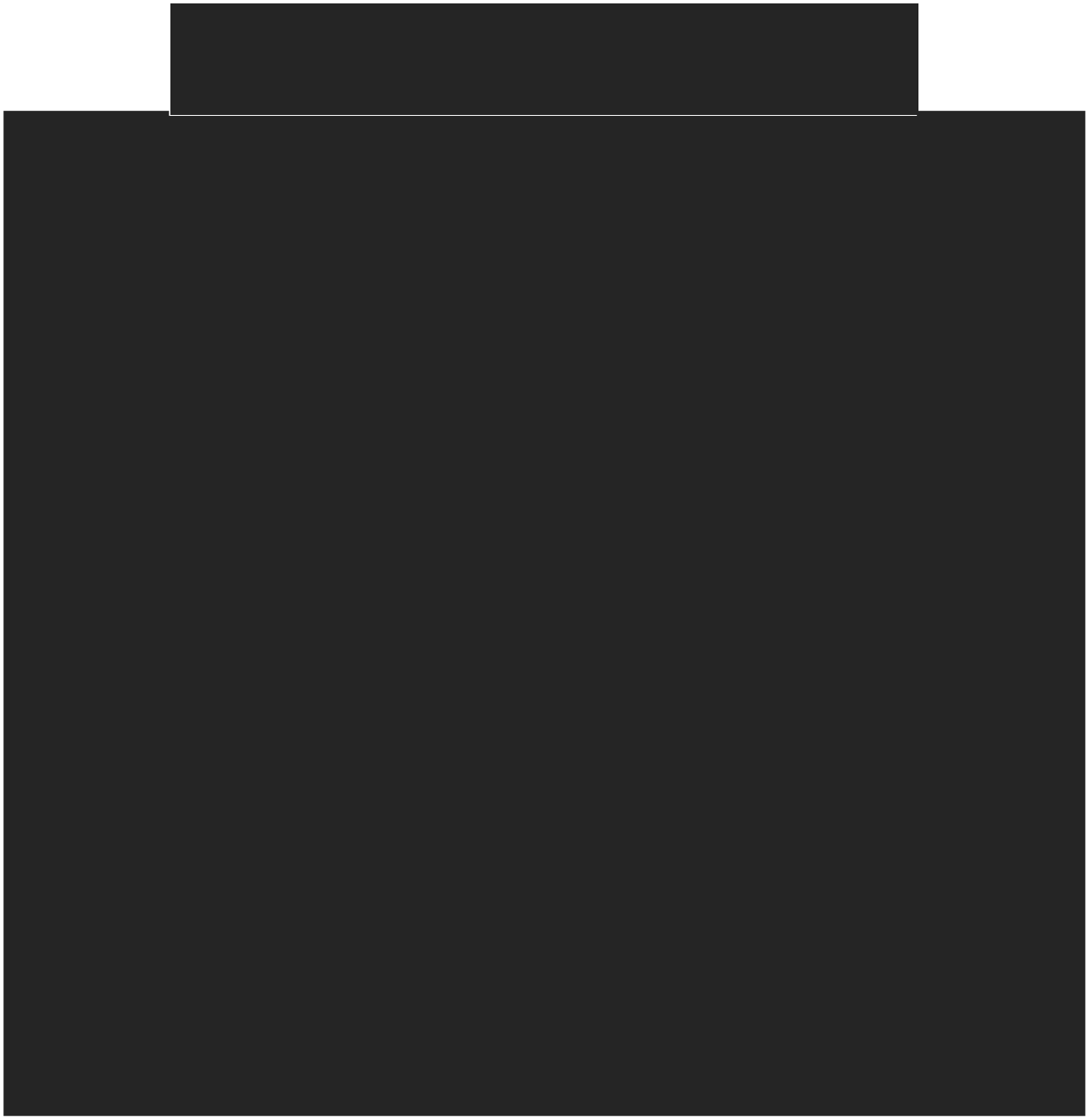
[redacted]



CX-2157 (Vallee Opening Report) ¶ 1880 (Photo of VUSE Solo G2 Cartridge Housing [E] (Left), Interior with Batting [L] (Middle), and Without Batting to Show the Portions Wick Outside the Heating Coil [L] (Right))

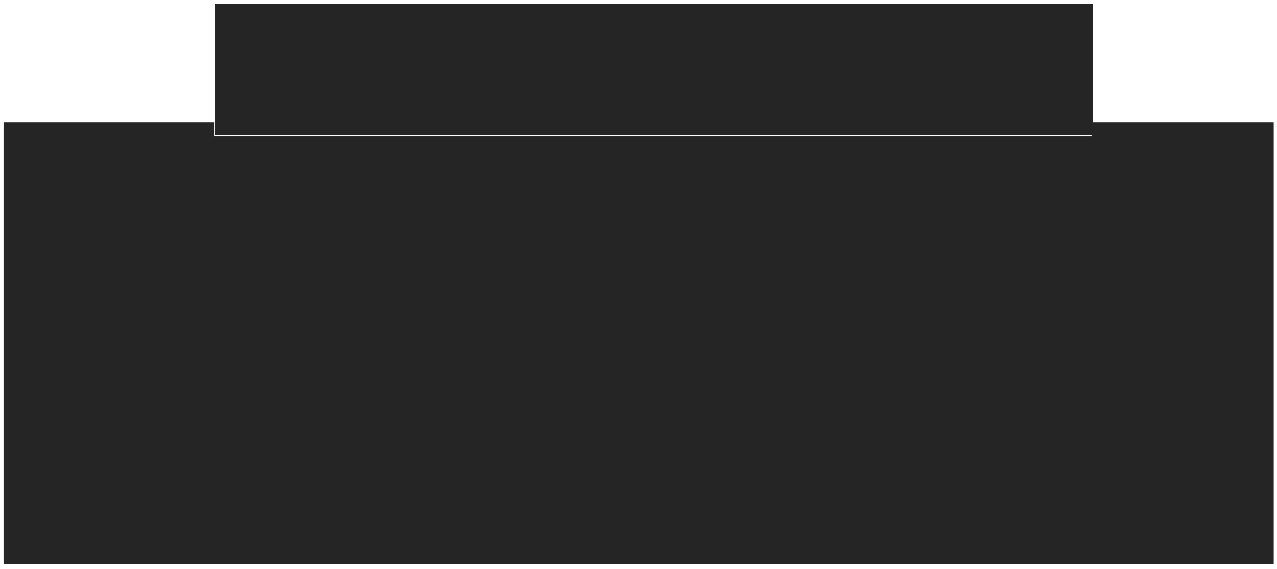
The solution holding medium is also shown in the VUSE Solo PMTAs. Highlighted in green are the portions of the VUSE Solo G1 Cartridge and the VUSE Solo G2 Cartridge that can be the solution holding medium in accordance with the claims. Indeed, the VUSE Solo PMTA explains that [redacted]

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JX-0577C.0038 (VUSE Solo PMTA (G2 Cartridge))

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JX-0577C.0039 (VUSE Solo PMTA (G2 Cartridge))

Accordingly, the VUSE Solo System practices claim limitation [1.6].

(g) [1.7] wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element,

The VUSE Solo System includes a cartridge (*i.e.*, the VUSE Solo G1 Cartridge or VUSE Solo G2 Cartridge) with a housing that includes a heating element (*i.e.*, at least a resistive heating coil) located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway, wherein the airflow through the passageway passes on both transverse sides of the element.

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17. The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." CC Order at 17-21.

As shown below, each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge include a heating element (*i.e.*, at least the resistive heating coil) (N) that extends transversely across the airflow passageway. The heating element may also include the portion of the wick

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[redacted]

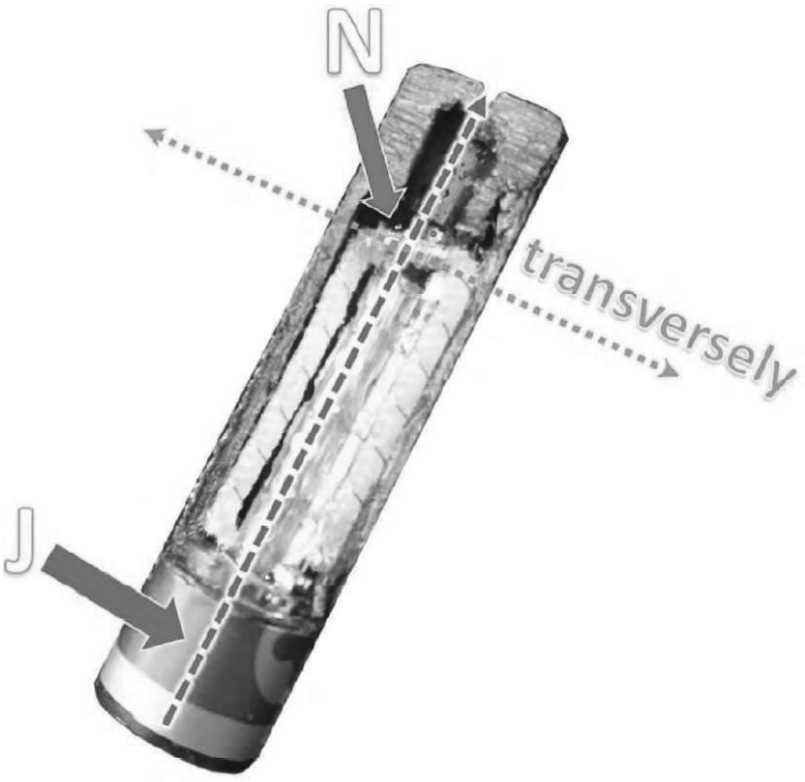
within the heating coil in accordance with the specification and claims of the 864 Patent. *See also* 864 Patent at 6:46-49 ("The heating element 222 can comprise wicking material that draws the liquid solution from the absorbent material 204 towards the heating element 222.").



CX-2157 (Vallee Opening Report) ¶ 1886 (Photo of VUSE Solo G1 Cartridge Showing Heating Element [N] that Extends Transversely Across the Airflow Passageway [J])

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[redacted]

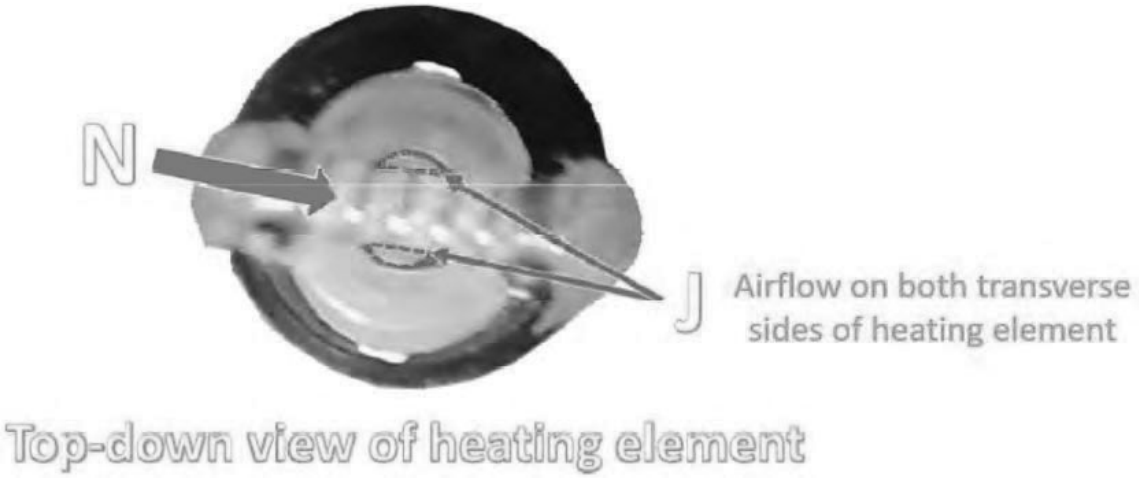


CX-2157 (Vallee Opening Report) ¶ 1886 (Photo of VUSE Solo G2 Cartridge Showing Heating Element [N] that Extends Transversely Across the Airflow Passageway [J])

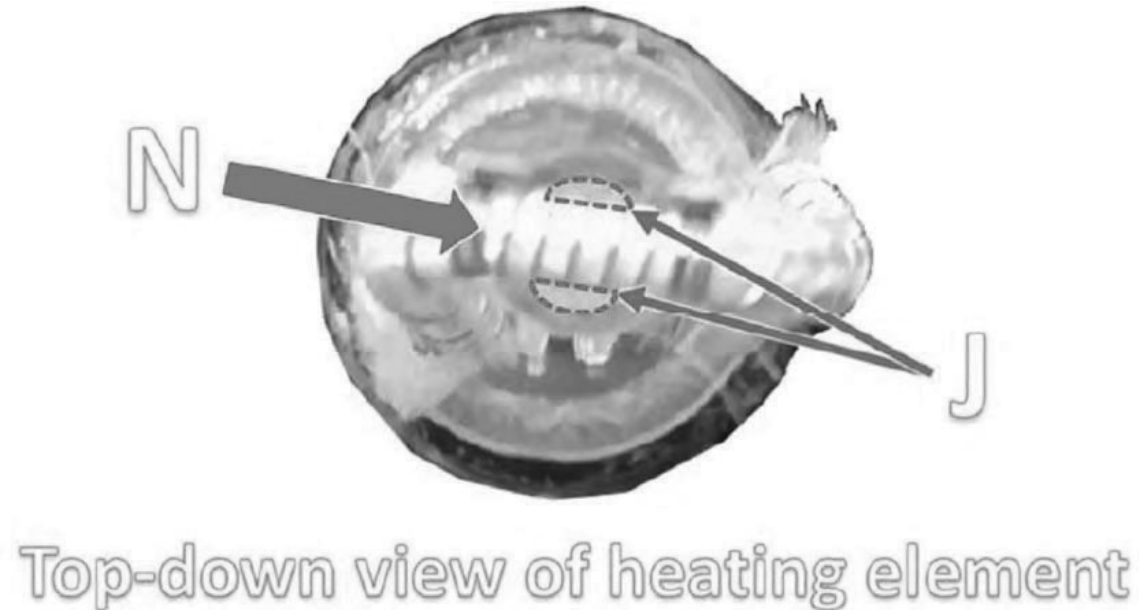
As can be seen in the top-down views of the VUSE Solo Cartridges, the heating element [N] extends transversely across the airflow passageway such that when air passes encounters the heating element [N], it diverges and passes through the airflow passageway [J] along both transverse sides of the heating element.

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[redacted]



CX-2157 (Vallee Opening Report) ¶ 1887 (Photo Showing Top-Down View of the VUSE Solo G1 Cartridge With the Housing Removed to Show the Heating Element [N] Obstructing the Airflow Passageway [J] Such that Air Flows on Both Transverse Sides of the Heating Element)



CX-2157 (Vallee Opening Report) ¶ 1887 (Photo Showing Top-Down View of the VUSE Solo G2 Cartridge with the Housing Removed to Show the Heating Element [N] Obstructing the Airflow Passageway [J] Such that Air Flows on Both Transverse Sides of the Heating Element)

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[redacted]

The VUSE Solo PMTA also depicts and describes [redacted]

[redacted]



JX-0577C.0030 (VUSE Solo PMTA (G1 Cartridge))

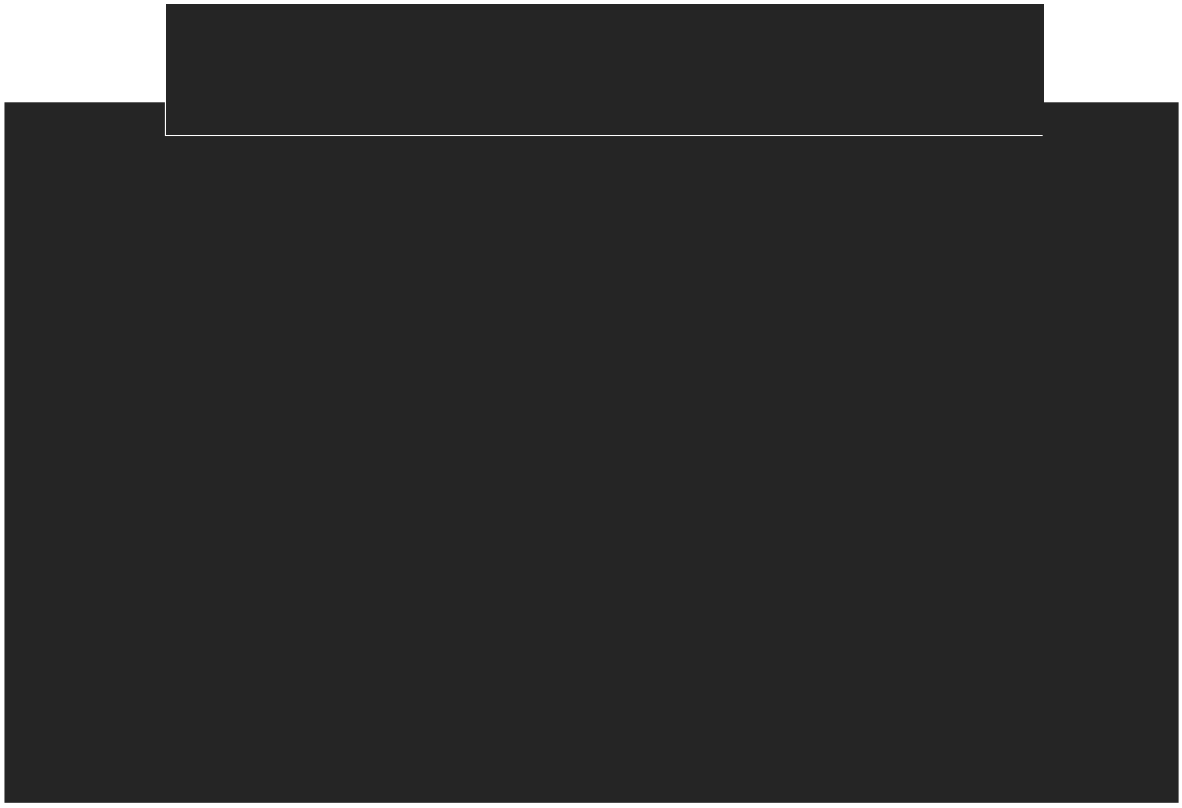


JX-0577C.0038 (VUSE Solo PMTA (G2 Cartridge))

The VUSE Solo PMTA also depicts [redacted]

[redacted].

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JX-0577C.0032 (VUSE Solo PMTA (G1 Cartridge))



JX-0577C.0040 (VUSE Solo PMTA (G2 Cartridge))

Accordingly, the VUSE Solo System practices claim limitation [1.7].

(h) [1.8] wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end,

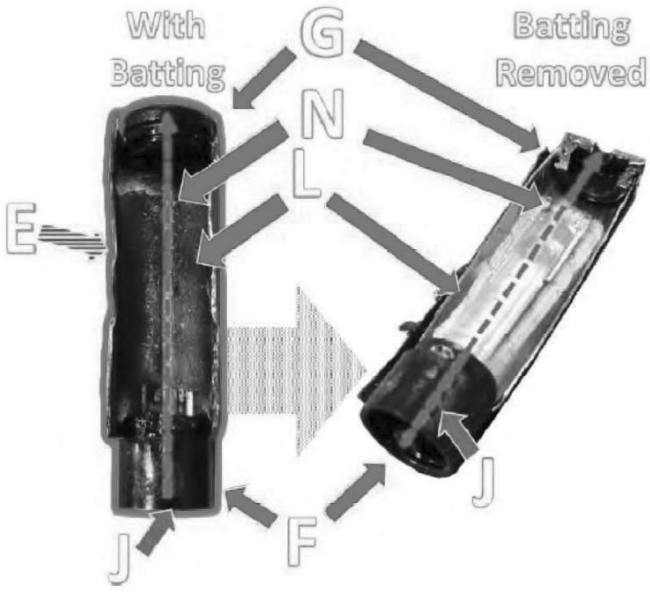
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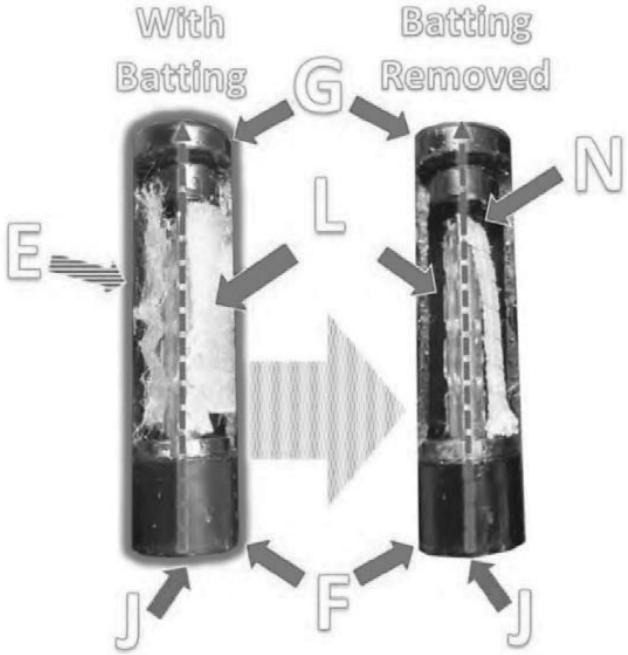
The VUSE Solo System includes a cartridge (*i.e.*, the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge) with a housing having in its an interior a solution holding medium (*i.e.*, a batting, the portions of the wick outside the heating coil, and any portion of the chamber in which liquid solution resides, or a combination thereof), wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end.

As explained above with respect to claim limitation [1.6], the solution holding medium corresponds to a batting, the portions of the wick outside the heating coil, any portion of the chamber in which liquid solution resides, or a combination thereof, in each of the VUSE Solo G1 Cartridge and the VUSE Solo G2 Cartridge. As depicted below, the solution holding medium [L] therefore surrounds both the airflow passageway [J] and the heating element (*i.e.*, the resistive heating coil) [N] in the housing [E] interior and in between the first and second ends [F, G]. Note, even if the solution holding medium is partially surrounding the heating element, it is still surrounding it. CX-2157 (Vallee Opening Report) ¶ 1892. The claims put no limitation on whether "surrounds" is limited to partial or complete surrounding. *Id.* ¶ 1892.

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CX-2157 (Vallee Opening Report) ¶ 1892 (Photo of VUSE Solo G1 Cartridge Showing Interior of Housing [E] With a Solution Holding Medium [L] that Surrounds the Airflow Passageway [J] and Heating Element [N] Between the First and Second Ends [F, G])



CX-2157 (Vallee Opening Report) ¶ 1892 (Photo of VUSE Solo G1 Cartridge Showing Interior of Housing [E] With a Solution Holding Medium [L] that Surrounds the Airflow Passageway [J] and Heating Element [N] Between the First and Second Ends [F, G])

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[redacted]

As shown above in the photos and below in the [redacted] of the VUSE Solo PMTA, the solution holding medium [redacted]



JX-0577C.0030 (VUSE Solo PMTA (G1 Cartridge))



JX-0577C.0038 (VUSE Solo PMTA (G1 Cartridge))

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JX-0577C.0039 (VUSE Solo PMTA (G1 Cartridge))

. CX-2157 (Vallee Opening Report) ¶ 1894. *Id.* ¶ 1894.

Accordingly, the VUSE Solo System practices claim limitation [1.8].

(i) [1.9] wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source.

The VUSE Solo System includes a cartridge (*i.e.*, the VUSE Solo G1 Cartridge or VUSE Solo G2 Cartridge) that includes a heating element (*i.e.*, at least a resistive heating coil) that is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source.

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[redacted]

The term "electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48.

The parties have agreed that the term "electrically conductive portion" means "portion that is electrically conductive." Revised Joint Claim Construction Chart at 10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

The parties proposed the following for "the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow." *See* CX-2157C (Vallee Opening Report) ¶¶ 1452, 1522; CC Order at 33-36.

Complainant	**Respondent**	**Staff**
Alternative construction if not subject to § 112(6): element that heats via resistive heating	*Alternative construction if not subject to § 112(6), and deemed not indefinite:* Component configured to: (a) perform heating (i.e. output heat); and (b) vaporize at least a portion of the solution / the portion of the solution held in the solution holding medium for oral provision to an individual in the airflow between the first aperture and the second aperture.	*Alternative construction if not subject to § 112(6) and not indefinite:* Plain and ordinary meaning, e.g., conductive material that, in response to current, outputs heat to vaporize at least a portion of the solution for oral provision to an individual in the airflow.

First, each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge include a heating element configured to vaporize at least a portion of the solution for oral provision to an individual in an airflow, because the heating element in each of the VUSE Solo G1 Cartridge and the VUSE

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[redacted]

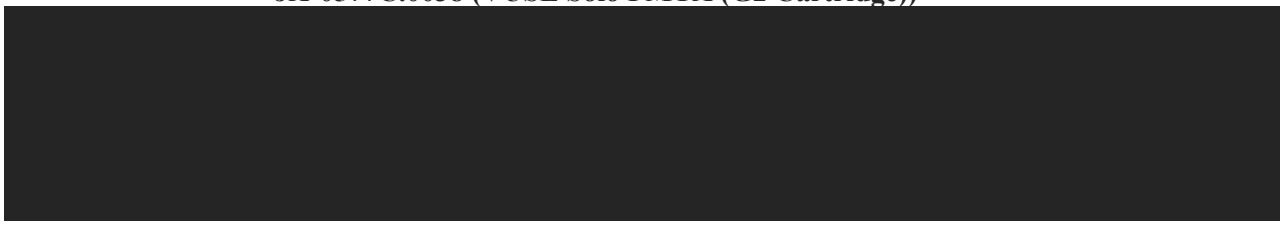
Solo G2 Cartridge are elements that heat via resistive heating. CX-2157 (Vallee Opening Report) ¶ 1901. The heating coil in each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge outputs heat as a resistive heating element, *i.e.*, [redacted]. CX-2157 (Vallee Opening Report) ¶ 1899.



JX-0577C.0030 (VUSE Solo PMTA (G1 Cartridge))



JX-0577C.0038 (VUSE Solo PMTA (G2 Cartridge))



JX-0577C.0024 (VUSE Solo PMTA ([redacted]))

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[redacted]

JX-0577C.0043 (VUSE Solo PMTA ([redacted]))

As described in the VUSE Solo PMTA (see below), [redacted]

[redacted]

Thus, the aerosol would contain vaporized e-liquid.

[redacted]

JX-0577C.0100 (VUSE Solo PMTA)

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JX-0577C.0033 (VUSE Solo PMTA (G1 Cartridge)) (
)

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JX-0577C.0041 (VUSE Solo PMTA (G2 Cartridge)) ( )



JX-0577C.0095 (VUSE Solo PMTA)

Second, each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge include a heating element configured to vaporize at least a portion of the solution for oral provision to an individual in an airflow, because the heating elements of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge comprise conductive material that, in response to current, outputs heat to vaporize at least a portion of the solution for oral provision to an individual in the airflow. CX-2157 (Vallee Opening Report) ¶ 1903. *See, e.g.*, 864 Patent at 6:43-46 ("The cartridge 200 further

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[redacted]

comprises a heating element 222 that is coupled to the electrical isolator 220 and the conductive element 216 in the interior of the housing 202 by way of conductive lines 224 and 226."), 6:53-56 ("When a user draws a breath by way of the airflow passageway 214, a circuit is closed, thereby providing current to the heating element 222.").

Third, each of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge include a heating element configured to vaporize at least a portion of the solution for oral provision to an individual in an airflow, because the heating elements of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge are, as explained above, a component configured to: (a) perform heating (*i.e.* output heat); and (b) vaporize at least a portion of the solution / the portion of the solution held in the solution holding medium for oral provision to an individual in the airflow between the first aperture and the second aperture. *See* CX-2157 (Vallee Opening Report) ¶ 1904.

Also, the heating elements of the VUSE Solo G1 Cartridge and VUSE Solo G2 Cartridge are responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and power source.

[redacted]

JX-0577C.0024 (VUSE Solo PMTA ([redacted]))

[redacted]

JX-0577C.0043 (VUSE Solo PMTA ([redacted]))

The electrical power from the power source (*i.e.*, the VUSE Solo Power Unit) [C] is conveyed to the cartridge through the electrical contacts [K] on the VUSE Solo Cartridge (G1 or G2), as depicted below:

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[redacted]



CX-2157 (Vallee Opening Report) ¶ 1906 (Photo of VUSE Solo G1 Cartridge Showing the Cartridge's Electrical Contacts [K] That Couple to the Power Source [C])



CX-2157 (Vallee Opening Report) ¶ 1906 (Photo of VUSE Solo G2 Cartridge Showing the Cartridge's Electrical Contacts [K] That Couple to the Power Source [C])

The VUSE Solo PMTA illustrates [redacted]

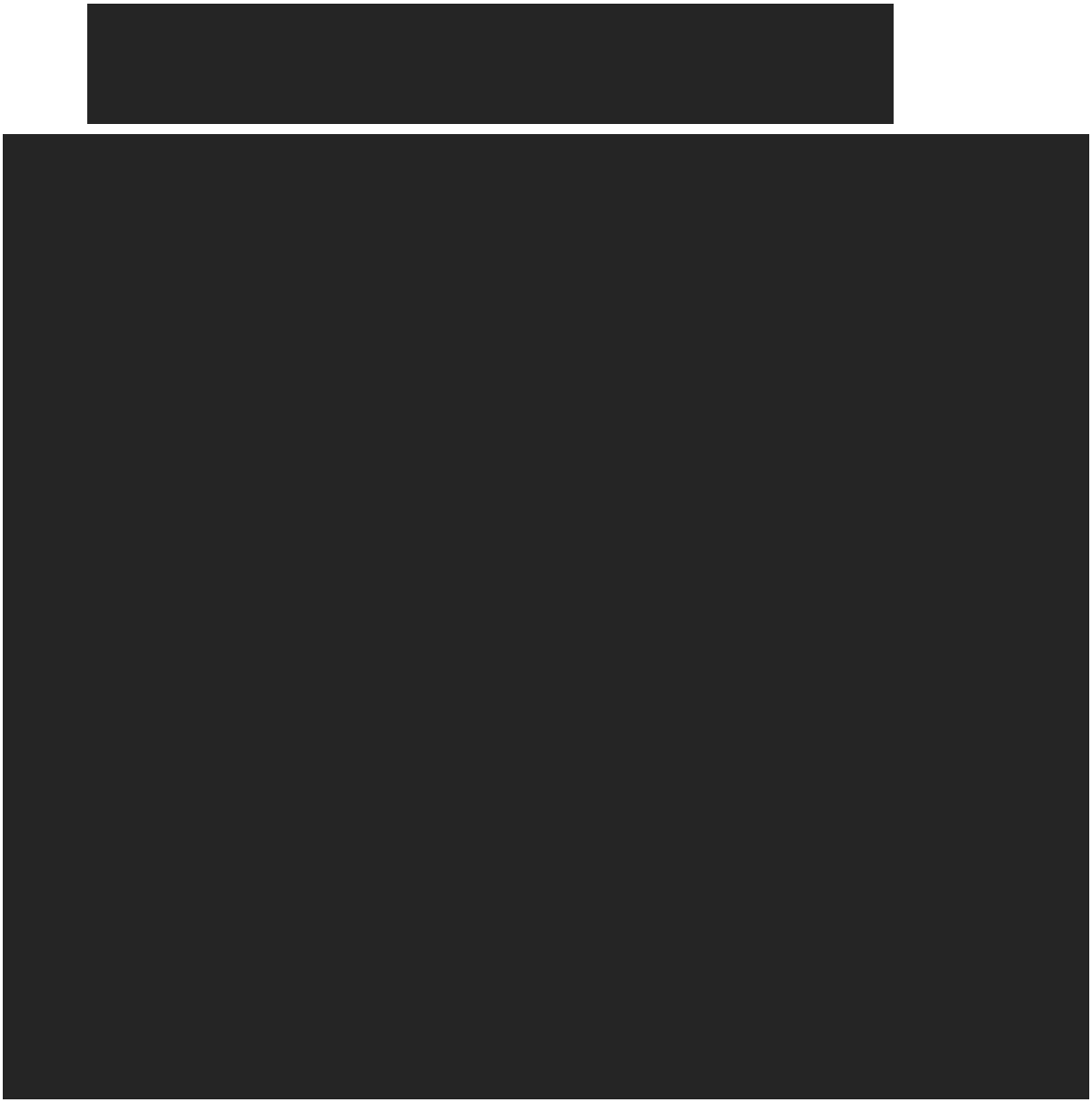
[redacted]:

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JX-0577C.0045 (VUSE Solo PMTA (G1 and G2 Cartridges))

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JX-0577C.0047 (VUSE Solo PMTA (G1 and G2 Cartridges))

Accordingly, the VUSE Solo System practices claim limitation [1.9].

(2) Respondent's Contentions Will Not Demonstrate that the VUSE Solo System Does Not Practice the 881 Patent

As set forth above, the evidence will show that the VUSE Solo System practices claim 1 of the 881 Patent. Notably, Respondent's arguments that the VUSE Solo System does not practice are repetitive across different claim limitations. Therefore, Complainant's response to one

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[redacted]

argument with respect to one claim term is equally applicable to the same or similar arguments that Respondent raised with respect to other claim terms.

Moreover, Respondent also makes arguments under proposed constructions for which Complainant's expert, Dr. Vallee, does not provide an opinion. Accordingly, Respondent may not address such arguments. However, any lack of response should not be understood to mean that Complainant or its expert agree with those arguments or proposed constructions.

As set forth herein, and as will be demonstrated at the hearing, Respondent will be unable to show that the VUSE Solo System does not practice the 881 Patent.

(a) Solution Holding Medium

First, Complainant anticipates that Respondent will contend that Complainant "fails to show why any portion of the chamber in which liquid solution resides, or a combination of a batting, the portions of the wick outside the heating coil, and any portion of the chamber in which liquid solution resides forms the alleged solution holding medium (reservoir)." JX-0653 (Dahm Rebuttal Report) ¶ 674. The claims, as construed, do not require the solution holding medium to comprise a chamber. As properly construed, the VUSE Solo System comprises a solution holding medium. *See* Section IV.E.3.a)(1)(f).

Second, Complainant anticipates that Respondent will contend that the claimed solution holding medium must be separate and distinct from the interior of the housing. *See* JX-0653 (Dahm Rebuttal Report) ¶ 674. The VUSE Solo System's solution holding medium is separate and distinct from the interior of the housing. *See* Section IV.E.3.a)(1)(f). Indeed, there are other features within the interior of the housing aside from the solution holding medium, including a heating element and airflow passageway. *See* Sections IV.E.3.a)(1)(f) and IV.E.3.a)(1)(g).

Third, Complainant anticipates that Respondent will contend that the portions of the wick outside the heating element cannot comprise the solution holding medium. *See* JX-0653 (Dahm

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[redacted]

Rebuttal Report) ¶¶ 675-676. The Asserted Patents do not preclude a component that has a portion acting as a wick and a portion acting as the solution holding medium. The evidence will show that the fact that the claim recites two elements does not signal to a POSITA that these two elements must be physically separable. Moreover, the evidence will show that the Asserted Patents teach that components may share structure. *See* JX-0005 (881 Patent) at Fig. 2 (showing that many components share boundaries). Regardless, the VUSE Solo System comprises solution holding medium structure other than the wick. *See* Section IV.E.3.a)(1)(f).

(b) The Solution Holding Medium Surrounds the Airflow Passageway and the Heating Element

Complainant anticipates that Respondent will contend that the VUSE Solo System does not contain a solution holding medium that surrounds the airflow passageway and the heating element, because there are portions of the airflow passageway and (for the VUSE Solo G1 Cartridge) portions of the heating element that are not completely surrounded. *See* JX-0653 (Dahm Rebuttal Report) ¶¶ 677-682. This is incorrect. The evidence will show that a POSITA would not understand the claim requires the entire length of the airflow passageway, or the entire heating element, to be surrounded by the solution holding medium. In fact, the patents teach a preferred embodiment where the solution holding medium does not surround the entire length of the airflow passageway. *See* JX-0005 (881 Patent) at Fig. 2 (showing a gap 228 that is not surrounded by the solution holding medium 204). Respondent's expert, Dr. Dahm, does not cite in his report cite any evidence in the Asserted Patents for his narrow interpretation. Dr. Dahm also does not consider the teardown images of the VUSE Solo System, which show that the batting material in both the G1 and G2 cartridges surround the heating element. *See* Section IV.E.3.a)(1)(h).

(c) Heating Element Extending Transversely

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[redacted]

First, Complainant anticipates that Respondent will contend that the claimed heating element cannot comprise a wick. *See* JX-0653 (Dahm Rebuttal Report) ¶ 685. As the evidence will show, however, the Asserted Patents teach that a heating element may comprise a wick (JX-0005 (881 Patent) at 6:44-47), and as explained above the heating element of the VUSE Solo System meets these claim limitations requiring a transverse heating element. *See* Section IV.E.3.a)(1)(g).

Second, Complainant anticipates that Respondent will contend that the portion of the wick inside the heating coil of the VUSE Solo System cannot be part of the claimed heating element. *See* JX-0653 (Dahm Rebuttal Report) ¶ 687. The Asserted Patents do not preclude a component that has a portion acting as a wick and a portion acting as the solution holding medium. The evidence will show that the fact that the claim recites two elements does not signal to a POSITA that these two elements must be physically separable. Moreover, the evidence will show that the Asserted Patents teach that components may share structure. *See* JX-0005 (881 Patent) at Fig. 2 (showing that many components share boundaries). Regardless, the VUSE Solo System comprises solution holding medium structure other than the wick. *See* Section IV.E.3.a)(1)(f).

Third, Complainant anticipates that Respondent will contend that the heating coil in the VUSE Solo System does not extend transversely because the length of wire continuously changes direction along its length. *See* JX-0653 (Dahm Rebuttal Report) ¶ 688. As the evidence will show, however, a POSITA would understand that a coil's orientation is determined by the axis around which it is wound, and would have understood that the direction of that axis is the direction the coil extends. As shown above, the heating coil in the VUSE Solo System extends transversely. *See* Section IV.E.3.a)(1)(g). Fourth, Complainant anticipates that Respondent will contend that the heating element in the VUSE Solo System does not extend transversely, because it does not "extend transversely all the way across the alleged airflow passageway." JX-0653 (Dahm Rebuttal

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Report) ¶ 689. Respondent is importing limitations into the claims, which do not require the heating element to extend "all the way" across. The term "transversely" has been construed as "crosswise" (CC Order at 17), and as shown above the heat element extends transversely/crosswise across the airflow passageway. *See* Section IV.E.3.a)(1)(g).

(d) Heating Element Configured to Vaporize Solution

First, Complainant anticipates that Respondent will contend that the VUSE Solo System does not comprise a heating element because it is limited to the coil, and the coil by itself cannot vaporize solution in the solution holding medium. *See* JX-0653 (Dahm Rebuttal Report) ¶ 696. As the evidence will show, however, the claimed heating element may comprise a wicking material. *See* JX-0005 (881 Patent) at 6:44-47. The heating coil and the wick in the VUSE Solo System comprise the heating element, and the combination is configured to vaporize solution. *See* Sections IV.E.3.a)(1)(g) and IV.E.3.a)(1)(i).

Second, Complainant anticipates that Respondent will contend that the claim requires a portion of the solution to be vaporized while that portion of the solution is in the alleged solution holding medium. *See* JX-0653 (Dahm Rebuttal Report) ¶ 697. This reading of the term is incorrect. The evidence will show that a POSITA would understand that the term to mean, consistent with the Fuma v. RJRV Litigation court's construction, that "[t]he solution can be, but need not be, in the solution holding medium when vaporized by the heating element." CX-2316.0013. As the court explained, Respondent's interpretation "goes beyond the plain language of the claim by requiring that the solution must be vaporized while it is in the solution holding medium. Certainly the claims cover vaporizing the solution while it is in the solution holding medium, but the words of the claim do not say the solution must be in the solution holding medium when it is vaporized." *Id.*, .0014. The evidence will show that the court's reasoning is consistent with a POSITA's understanding of the claim.

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[redacted]

Third, Complainant anticipates that Respondent will argue that Complainant fails to show that the VUSE Solo System includes "the heating element [is/being] electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium [reservoir] for oral provision to an individual in an airflow from the second aperture." *See* JX-0653 (Dahm Rebuttal Report) ¶ 700, 703-704. The term "configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed "as having its plain and ordinary meaning, that is, the language of the claims." CC Order at 25-33. The term "heating element being configured to vaporize at least [a/the] portion of the solution [drawn to the heating element] for oral provision to an individual in the airflow" has been construed to not be subject to § 112, ¶ 6. CC Order at 33-48. To the extent Respondent's argument is that the term is indefinite, this is incorrect. See CX-0217.0023-0027. The evidence will show that the term means that the heating element is configured to vaporize solution, wherein the vaporization occurs in the airflow, and the purpose of vaporization is oral provision to an individual from the second aperture. *See* CC Order at 25-33 (explaining what occurs in the airflow).

Respondent's reading of the claim term that "vaporization must happen in the airflow from the second aperture" or that "the claim requires a portion of the solution to be vaporized while that portion of the solution is in the airflow from the second aperture" is incorrect. The term "in an airflow from the second aperture" modifies the "individual" and not vaporization or a portion of the solution. Regardless, the airflow from the first aperture to the second, and the airflow from the second aperture are the same airflow.

Fourth, Complainant anticipates that Respondent will argue that VUSE Solo System is not configured to provide vaporized solution to an individual, but rather expels an aerosol. *See* JX-0653 (Dahm Rebuttal Report) ¶ 705. However, the asserted claims do not limit the nature of

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substance for oral provision. The fact that there exists an additional step in the VUSE Solo System where vapor is mixes with air to form an aerosol does not affect Complainant's domestic industry analysis and is contemplated by the Asserted Patents. JX-0005 (881 Patent) at 5:3-6 ("Indirect or direct flame may also be used as a power source as appropriate to trigger the state change of the solution 128 from an initial state to a gaseous aerosol state."). Moreover, the evidence will show that a POSITA would understand that after e-liquid is vaporized to create vapor, it mixes with air to form an aerosol within an e-cigarette device before reach the user. CX-0281C (03/01/2024 White) at 140:1-7 ("[redacted]"), 143:17-23 ("[redacted]"), 144:3-6 ("[redacted]").

(e) First End of the Housing Electrically and Mechanically Coupled to a Power Source

First, Complainant anticipates that Respondent will argue that electrical contacts on the VUSE Solo System are not part of the first end of the housing. *See* JX-0653 (Dahm Rebuttal Report) ¶ 708. That is incorrect. As shown above, the electrical contacts are at, and form part of, the first end of the housing. *See* Section IV.E.3.a)(1)(e). Moreover, there is no restriction that the "housing" must be a single component such as a single molded plastic piece. In fact, the Asserted Patents specifically teach that the "housing" may comprise end caps. JX-0001 (864 Patent) at 5:34-36.

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[redacted]

Second, Complainant anticipates that Respondent will argue that the electrical contacts on the VUSE Solo System are not adapted to mechanically couple to the power source, because the Cartridge Base of the VUSE Solo System mechanically couples the VUSE Solo cartridge to the VUSE Solo power source. *See* JX-0653 (Dahm Rebuttal Report) ¶ 712. That is incorrect. As the VUSE Solo PMTA evidence cited above shows, [redacted]. JX-0577C.0028-.0029, .0037-.0038. The VUSE Solo PMTA also identifies [redacted]. JX-0557C.0046. The VUSE Solo PMTA elsewhere identifies [redacted] JX-0577C.0047. *See* Section IV.E.3.a)(1)(e). That another portion of the housing also performs a mechanical coupling function is irrelevant.

(f) Airflow Passageway

First, Complainant anticipates that Respondent will contend that the VUSE Solo System lacks an airflow passageway because the claims require that the airflow passageway be separate and distinct form other claimed elements, such as the solution holding medium and housing. *See* JX-0653 (Dahm Rebuttal Report) ¶¶ 719, 725. That is incorrect. The evidence will show that the fact that the claim recites two elements does not signal to a POSITA that these two elements must be physically separable. Moreover, the evidence will show that the Asserted Patents teach that components may share structure. *See* JX-0005 (881 Patent) at Fig. 2 (showing that many components share boundaries). Regardless, the VUSE Solo System comprises the claimed airflow passageway. *See* Section IV.E.3.a)(1)(d).

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[redacted]

Second, Complainant anticipates that Respondent will contend that the VUSE Solo System lacks a central and axial airflow passageway because portions of the airflow passageway in the VUSE Solo cartridges are not symmetrical on either side of the central longitudinal axis. *See, e.g.*, JX-0653 (Dahm Rebuttal Report) ¶¶ 720, 722, 727. Respondent seems to be importing limitations into the claims, which do not require that the airflow passageway is symmetrical. As shown above, the airflow passageway in the VUSE Solo cartridges is central and axial, even if portions are not entirely symmetrical. For example, even though what Dr. Dahm identifies as the "flow tube" component in the VUSE Solo G1 Cartridge is not symmetrical, the entire length of the passageway is aligned along the central, longitudinal axis. Similarly, the entire length of the passageway in the VUSE Solo G2 Cartridge is aligned along the central, longitudinal axis. *See* Section IV.E.3.a)(1)(d).

Third, Complainant anticipates that Respondent will contend that the VUSE Solo System lacks a central and axial airflow passageway because of obstacles that cause airflow to deviate from being a straight line or central and axial where it goes around, *e.g.*, the heater, wick, electrical contacts, etc. *See e.g.*, JX-0653 (Dahm Rebuttal Report) ¶¶ 723, 728. This is incorrect. As the court in the Fuma RJRV Litigation made clear, the airflow passageway may contain obstacles that do not alter the shape of the passageway. CX-2315.0016; *see also* Section I.D.2, above. The Asserted Patents specifically contemplate a heating element comprising a wicking material in the airflow passageway that extends in a straight line. *See* JX-0005 (881 Patent) at 6:44-47 ("[t]he heating element 222 can comprise wicking material . . .", Fig. 2. As shown above, the shape of the airflow passageway in the VUSE Solo cartridges is central and axial. *See* Section IV.E.3.a)(1)(d).Moreover, none of the features that Respondent or its expert identify as obstacles divert air away from the central longitudinal axis of the VUSE Solo cartridges any more than the

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[redacted]

VUSE Solo's heating element. For example, while not binding on this Investigation, but instructive to the understanding of what constitutes an obstruction, the district court in the Middle District of North Carolina in the *Fuma v. RJR* case noted that although certain objects of an accused product obstructed the airflow, the objects "do not alter the direction of the [] airflow passageway any more than the heating element" and therefore constitute obstacles and did not preclude a finding that the airflow passageway in the accused product was central and axial. CX-2277.0016.

(g) Airflow Passing on Both Transverse Sides of the Heating Element

First, Complainant anticipates that Respondent will contend that Complainant fails to show that the airflow separates and passes "on both transverse sides of the heating element" because, among other things, the heating element of the VUSE Solo System is cylindrical and does not have transverse sides. *See* JX-0653 (Dahm Rebuttal Report) ¶ 742. Respondent's arguments are addressed above. *See* Section IV.E.3.a)(1)(g).

Second, Complainant anticipates that Respondent will contend that a POSITA would understand them to be the two opposing "short sides" of the heating element. *See* JX-0653 (Dahm Rebuttal Report) ¶ 743. This is incorrect. As the evidence will show, the transverse sides are the sides along the transverse direction, not the "short sides" that do not extend transversely across the airflow passageway or transverse the central, longitudinal axis. Respondent's interpretation is also contrary the ALJ's claim construction order. *See* CC Order at 17-21. Third, Complainant anticipates that Respondent will contend that to understand whether the airflow passes on both transverse sides of the heating element "require[s] [a] significant computational simulating and testing." JX-0653 (Dahm Rebuttal Report) ¶ 743. Not so. The VUSE Solo PMTAs clearly depict [redacted]. *See* Section IV.E.3.a)(1)(g) (citing JX-0577C.0032, .0040).

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[redacted]

4. Validity

As set forth herein, and as the evidence at the hearing will show, Respondent will not be able to show by clear and convincing evidence that the asserted claims of the 881 Patent are invalid.

a) The Alleged Prior Art References

(1) Xia 610

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are anticipated by Xia 610 and rendered obvious in view of Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo.[12] The evidence will show that these assertions are false and that Respondent's characterization of Xia 610 is flawed. *See* Sections IV.E.4.b)(1) and IV.F.4.b)(1).

Xia 610 (CN 201238610) (JX-0596) is a Chinese patent titled "Environmental-protecting Type Incombustible Atomizing Electronic Cigarette with Function of Cigarette Substitute," and is generally directed to an electronic vaping device. Xia 610 includes a controller that can detach from what Xia 610 calls a generator.

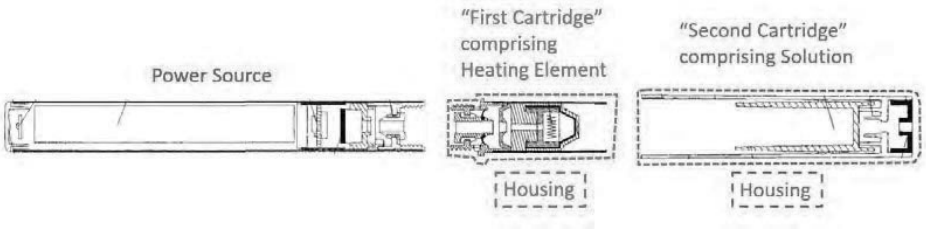
As explained in more detail below, and as the evidence at the hearing will show, a POSITA would have understood that the design of Xia 610's e-cigarette is a three-piece e-cigarette, whereby Xia 610's generator is comprised of a separate atomizer part and a separate liquid-storage cartridge, labeled below as "First Cartridge" and "Second Cartridge, respectively. *See* Section I.C, above (describing two- and three-piece designs). Xia 610's device closely resembles three-piece e-cigarettes such as the NJOY NPRO or NJOY NCIG, which comprised (1) a disposable liquid-

[12] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on Xia 610 (§102) and the combination of Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(1) and IV.F.4.b)(1), below.

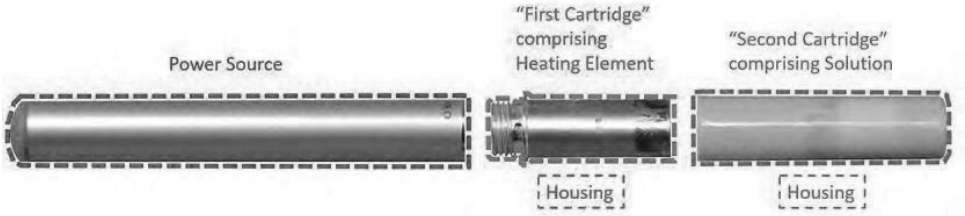
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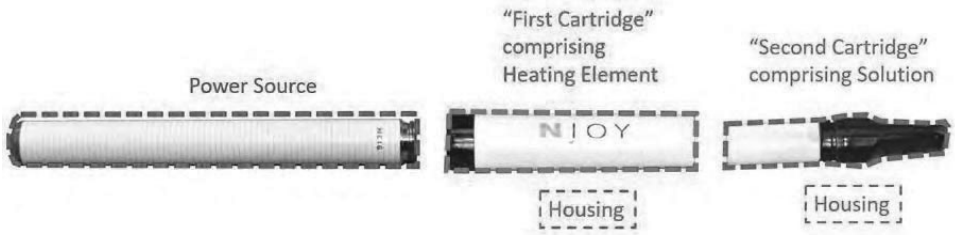
storage cartridge, (2) a reusable atomizer unit, and (3) power unit. Indeed, according to Respondent's expert, Mr. Leinsing, the device disclosed by Xia 610 shares a substantially similar design to the NPRO and the NCIG, which are three-piece designs and do not comprise a cartridge having both an atomizer and liquid storage.



JX-0633 (Xia 610) at Fig. 2 (annotated)



CX-2768.0001, .0003 (NPRO)



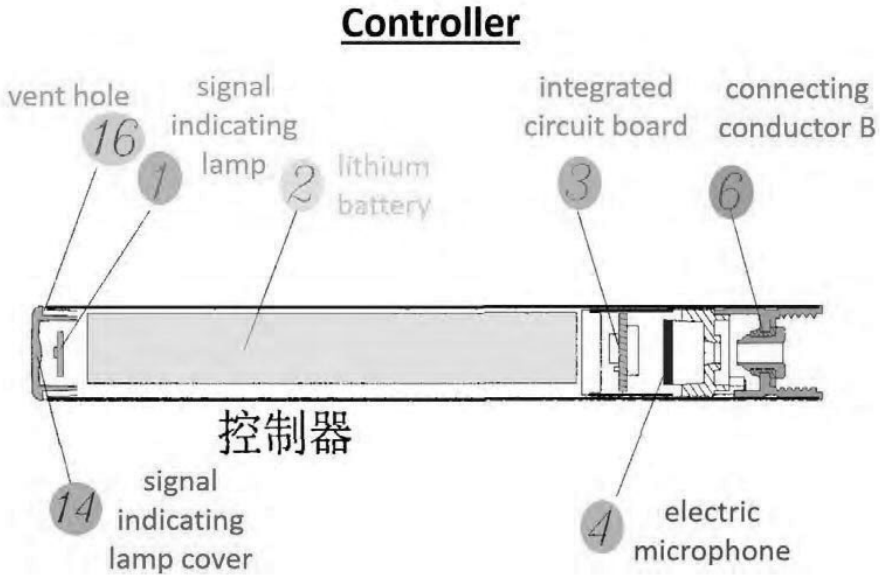
CX-2764.0001 (NCIG); CX-2765.0001

Xia 610's controller (the power source) includes a signal indicating lamp, a signal indicating lamp cover, a vent hole, a lithium battery, an integrated circuit board, an electret microphone, and a connecting conductor. The generator, which is what Xia 610 calls the combination of separable "first cartridge" and "second cartridge" parts shown above, includes a

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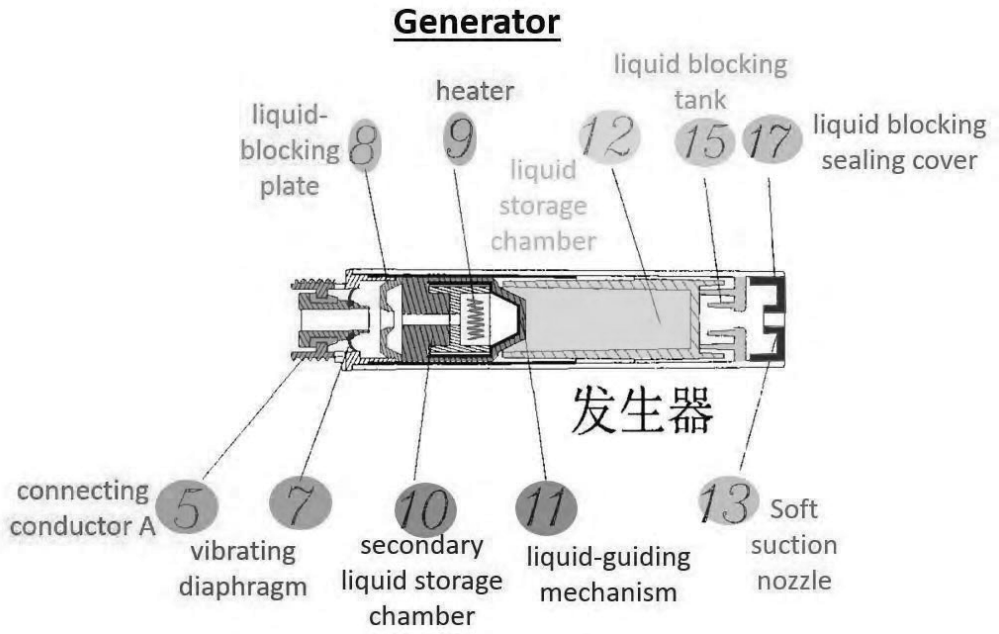
hollow connecting conductor, a vibrating diaphragm, a liquid-blocking plate, a liquid storage chamber, a secondary liquid storage chamber, a heater, a liquid-guiding mechanism, a liquid blocking tank, a suction nozzle, and a liquid blocking sealing cover. The annotated figures below illustrate these components.



JX-0633 (Xia 610) at Fig. 2 (partial, annotated)

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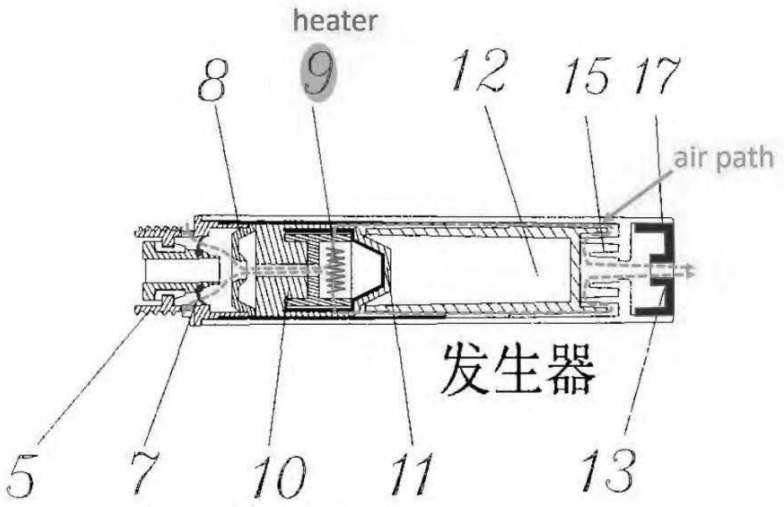
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JX-0633 (Xia 610) at Fig. 2 (partial, annotated)

Xia 610 does not disclose a central airflow passageway that extends intermediate of the first and second aperture as required by many of the asserted claims. As the adult consumer inhales, air enters the generator through the side holes at the base of the connecting conductor A (5). The airflow hits the vibrating diaphragm (7), which activates the device, and then the air flows into an opening in the diaphragm, from where it travels to the atomization room. In the atomization room, air is first mixed with the liquid that enters from the secondary liquid storage. Here, "large diameter droplets after atomization are attached to a wall under the action of a vortex to be reabsorbed by the liquid-guiding mechanism (11) through the overflow holes." JX-0633 (Xia 610) at .0016. This process prevents excess liquid from entering the rest of the airflow passageway. The vapor exits through the overflow holes in the periphery of the chamber and travels via the channel formed by the liquid storage chamber (12) and the generator shell to the liquid storage tank (15). The geometry of the airflow path through the generator of Xia 610 is illustrated in the following annotated figure.

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JX-0633 (Xia 610) at Fig. 2 (partial, annotated)

At the liquid blocking tank (15), the airflow takes on a circuitous path through a number of "fingers", which removes the remaining unvaporized liquid. From there, the vapor exists the generator through the liquid blocking sealing cover 17, which also prevents the unvaporized chemical liquid from entering the adult consumer's mouth. Therefore, the airflow passageway disclosed by Xia 610 is neither central nor axial with respect to the central longitudinal axis of the cartridge's housing.

(2) Wang 554

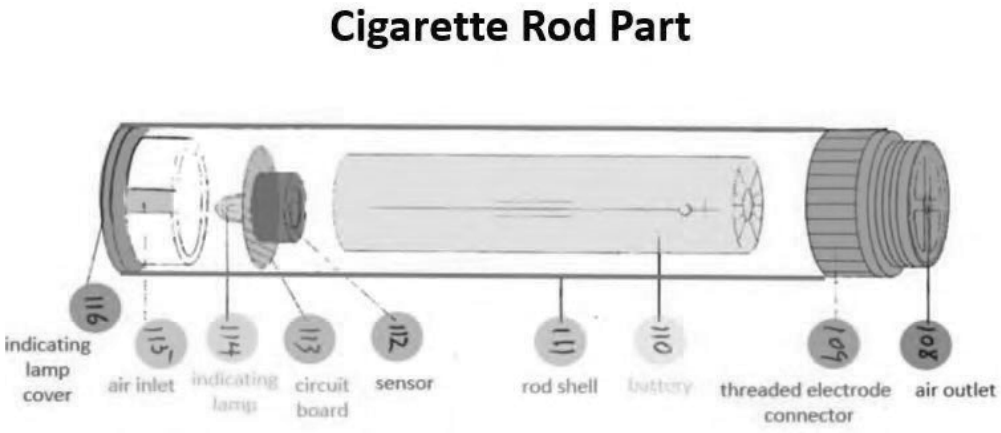
Complainant anticipates that Respondent and its expert, Mr. Leinsing, will contend that the Asserted Claims are rendered obvious in view of Wang 554, Xia 610, Fang 044, and Smoke Fifty-One Duo. [13] The evidence will show that both of these assertions are false as well as that Respondent's characterization of Wang 554 is flawed. *See* Sections IV.E.4.b)(2) and IV.F.4.b)(2).

[13] In an April 26, 2024 email to ALJ and the parties, Respondent indicated that it will rely on the combination of Wang 554, Xia 610, Fang 044, and Smoke Fifty-One Duo (§ 103). Based on an earlier email to just the parties on April 26, 2024, Complainant understand that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter

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Wang 554 (CN 101366554A) (RX-0027) is a Chinese patent titled "Electronic Pure Cigarette," and is generally directed to an electronic cigarette device. Wang 554's electronic cigarette consists of two distinct parts: a holder part and a cigarette rod part. The cigarette rod part comprises a rod shell, a battery, a sensor, an indicating lamp and lamp cover, a circuit board control, an air inlet and outlet, and the output end. The cigarette holder part comprises a holder shell, an electric heater, a tobacco extract, an organic fiber, an air inlet and outlet, and the input end. The following annotated figures of Wang 554 illustrate these features.

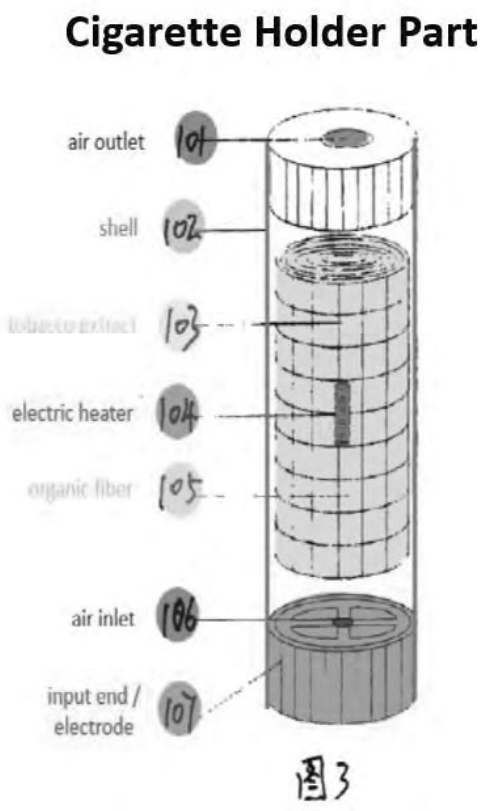


RX-0027 (Wang 554) at Fig. 2 (annotated)

combination." Complainant addresses these combinations in Sections IV.E.4.b)(2) and IV.F.4.b)(2), below.

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[redacted]



RX-0027 (Wang 554) at Fig. 3 (annotated)

Wang 554 lacks several features required by the Asserted Patents. Notably, Wang 554 does not include a central airflow passageway in its organic fiber 105 solution storage. Instead, during operation, airflow travel through the entire volume of the cigarette holder's interior, including through the gap formed between the fiber 105 and the cigarette holder's shell. Additionally, the design utilizes the empty space between the air outlet 101 and the top edge of the fiber 105 as a space where vaporized tobacco extract and the air mix and the unvaporized liquid is potentially discarded.

Furthermore, Wang 554 does not include a transverse heating element. Rather, Wang 554 discloses a heating coil oriented in parallel with the central longitudinal axis of the housing, as shown in the annotated Fig. 3 above. The disclosed orientation is critical to the device because

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Wang 554 operates on the principle of direct contact between the heating element and the tobacco-soaked fiber for vaporization, and the disclosed orientation allows for optimal contact area between the two elements, and, therefore, efficient rate of heating.

(3) Fang 044

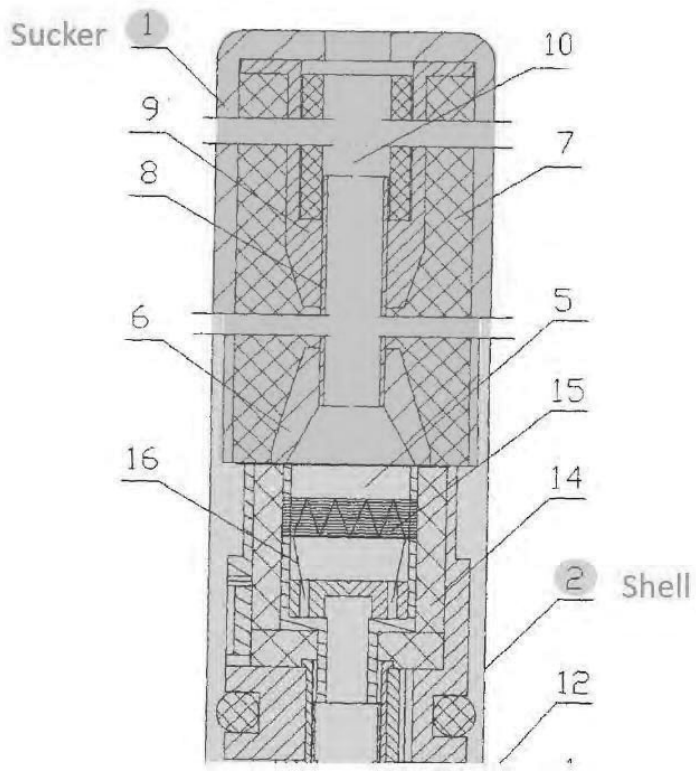
Complainant anticipates that Respondent and its expert, Mr. Leinsing, will contend that the Asserted Claims are anticipated by Fang 044 and rendered obvious in view of Fang 044, Xia 610, Wang 554, and Smoke Fifty-One Duo. [14] The evidence will show that both of these assertions are false as well as that Respondent's characterization of Wang 554 is flawed. *See* Sections IV.E.4.b)(3) and IV.F.4.b)(3).

Fang 044 (CN 201085044Y) (JX-0595) is a Chinese patent titled "Electronic Cigarette," and is generally directed to an electronic cigarette device. Fang 044 discloses a two-piece electronic cigarette. Respondent's expert, Mr. Leinsing, agrees. JX-0632C (Leinsing Opening Report) ¶ 300. The first piece is the "cigarette rod shell" containing a "battery" and an "electric heating film wire". The second piece is the "sucker" part containing a "gas pipe" and an "oil conservator." Fang 044 discloses that the "cigarette rod shell" connects to the "sucker part."

[14] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on Fang 044 (§102) and the combination of Fang 044, Xia 610, Wang 554 and Smoke Fifty-One Duo (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(3) and IV.F.4.b)(3), below.

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JX-0595 (Fang 044) at Fig. 1 (partial, annotated)

(4) Wang 927

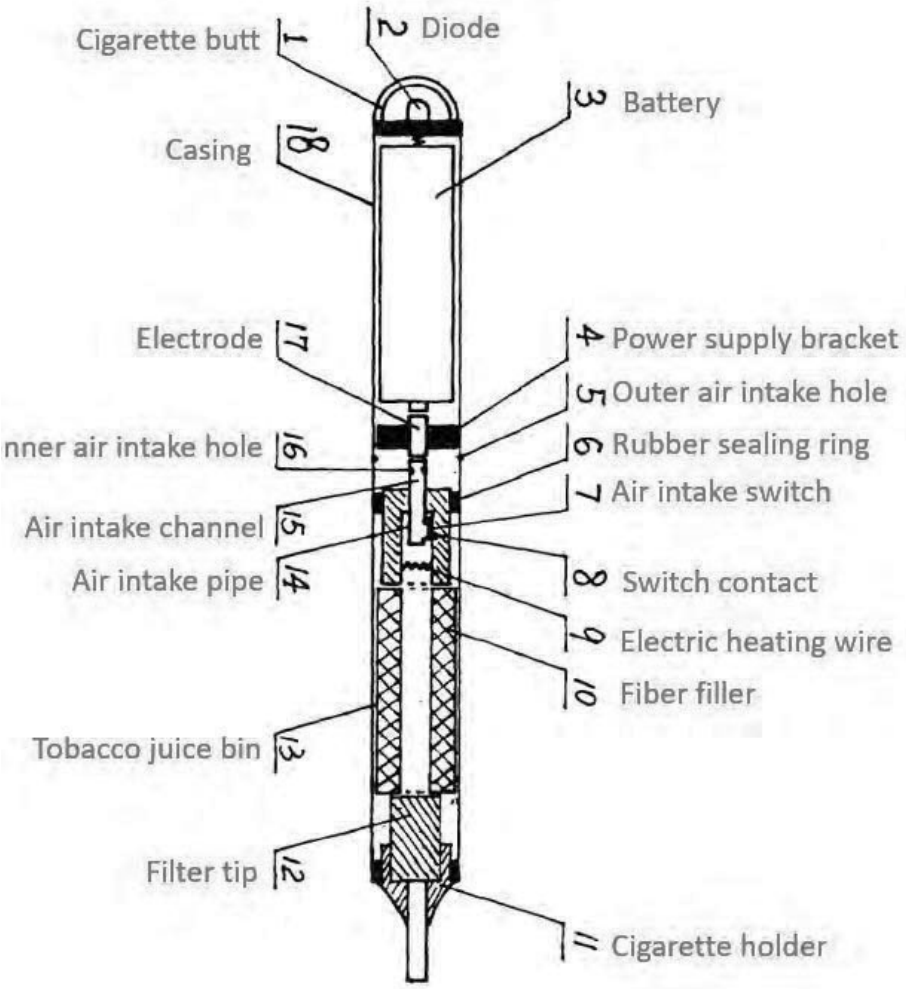
Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are anticipated by Wang 927 and rendered obvious in view of Wang 927, Wang 554, and NJOY NPRO Style.[15] The evidence will show that these assertions are false and that Respondent's characterization of Wang 927 is flawed. *See* Sections IV.E.4.b)(4) and IV.F.4.b)(4).

[15] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on Wang 927 (§102) and the combination of Wang 927, Wang 554, and NJOY NPRO Style (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(4) and IV.F.4.b)(4), below.

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CN 201018927Y ("Wang 927") describes a one-piece electronic cigarette with a "cigarette holder, a filter tip, a tobacco juice bin, a heating device and an air intake switch device" "installed in a cigarette casing." JX-0594 (Wang 927) at Abstract. This casing "is an aluminum alloy round pipe." *Id.* at 4. Wang 927's one-piece e-cigarette is depicted in the annotated figure, below.



JX-0594 (Wang 927) at Fig. 1 (annotated)

Wang 927 refers to the top side (as depicted, above) of Figure 1 as the "front end" (or "cigarette butt end") and the bottom side (as depicted, above) as the "tail end." *Id.* at 3, 4. Wang 927 uses "front end" and "tail end" to indicate direction relative to the assembled device shown in

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Figure 1. *See, e.g.*, *id.* at Abstract ("The filter tip is installed at a front end of the cigarette holder…"), 4-5 ("a filter tip 12 is installed ***at a front end of the cigarette holder 11***…"), 5 ("The diode 2 ***at the front end*** of the cigarette…").

Wang 927's specification explains that to assemble the device for use, "[t]he power supply, a power supply bracket, an air intake switch, a heater and a tobacco juice bin are installed in the casing in sequence" from the front end. *Id.* at 3. Once the above described components are installed from the front end, or cigarette butt end, a "cigarette butt 1" containing a "diode 2 emitting red light" is connected to the front end of the "casing 18" in order to "hold[] down a battery 3"—that is, to enclose the front end of the device. *Id.* at 4. Similarly, on the tail end, a "cigarette holder 11" is connected to the same "casing 18" to hold a replaceable "filter tip 12" and to serve as a mouthpiece for a smoker to "suck[] the cigarette holder 11" to operate the device. *Id.* at 4-5.

When the device is operated by a smoker providing suction on cigarette holder 11, air enters casing 18 through outer air intake hole 5, then enters air intake pipe 14 through inner air intake hole 16. *Id.* at 3-5. As shown in Figure 1, inner air intake hole 16 is located on the ***side*** of air intake pipe 14, which is a round copper pipe "with both ends sealed." *Id.* The suction also opens air intake switch 7, also mounted on the side of air intake pipe 14, permitting air to enter "a channel where a heater is located" and connecting to switch contact 8, which turns on the "power supply of the electric heating wire 9," allowing "electric heating wire 9" to generate heat. *Id.* Electricity from the power supply is conveyed through electrode 17, to the first sealed side of copper air intake pipe 14, and then to switch contact 8. *Id.*

The heating wire 9 heats the entering air, which "carries heat generated by the electric heating wire 9, causing tobacco juice filled into the fiber filler in the tobacco juice bin 13 to vaporize to form smoke." *Id.* at 5. Notably, the specification makes clear that electric heating wire

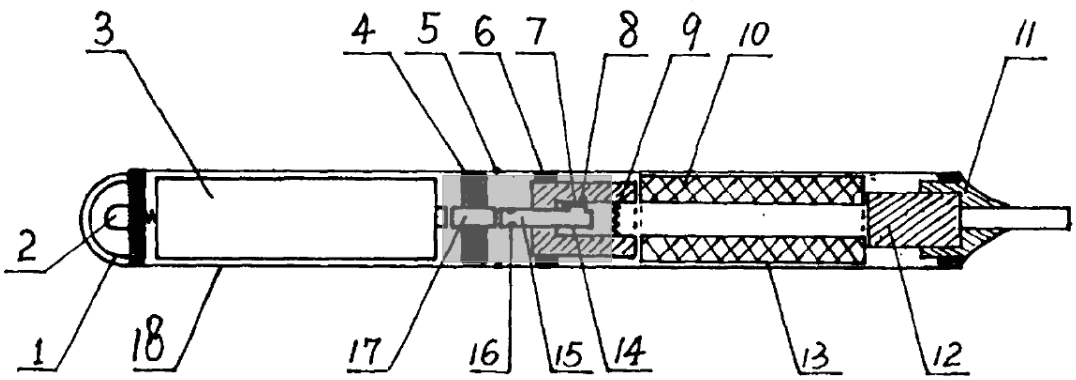
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9 itself does not heat or vaporize tobacco juice, but rather, separately heats air which then heats and vaporizes tobacco juice. *Id.*

As will be explained by Complainant's expert, by Dr. Vallee, Respondent's expert, Mr. Leinsing, at times characterizes Wang 927 inconsistent with its disclosure. Respondent will be unable to substantiate any of its positions which rely on such faulty opinions.

Respondent, through its expert, contends that "[b]etween the battery (3) and the electric heating wire (9) is an air intake switch (7)." JX-0632C (Leinsing Opening Report) ¶ 323. Respondent mischaracterizes Wang 927 and will not be able to substantiate its position at the hearing. As the evidence will show, and as shown in Figure 1, in addition to air intake switch 7, electrode 17, switch contact 8, and air intake pipe 14 containing air intake channel 15 and inner air intake hole 16 are also "between the battery (3) and the electric heating wire (9)." The aforementioned components are highlighted in the annotation of Fig. 1 below:



JX-0594 (Wang 927) at Fig. 1 (Depicting Components Between Battery 3 and Heating Wire 9)

Air intake pipe 14 "is a round copper pipe with both ends sealed" specifically to electrically connect to electrode 17 and switch contact 8, which then respectively electrically connect to battery 3 and heating wire 9. JX-0594 (Wang 927) at 4.

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Respondent's expert, Mr. Leinsing, further contends that "[t]he cigarette holder (11) is removed when replacing the tobacco juicer bin (13)." JX-0632C (Leinsing Opening Report) ¶ 323. Respondent mischaracterizes Wang 927 and will not be able to substantiate its position at the hearing. The evidence will show that tobacco juicer bin 13 is not "replaced." Instead, cigarette holder 11 may be removed to expose the tobacco juicer bin 13 for "addition of liquid tobacco juice," *i.e.*, refilling. JX-0594 (Wang 927) at 3. Additionally, Wang 927 makes clear the tobacco juice bin is installed from the cigarette butt end, or front end. *Id.* This is the other end of casing 18, as cigarette holder 11 is "connected to the casing" at the tail end. *Id.*

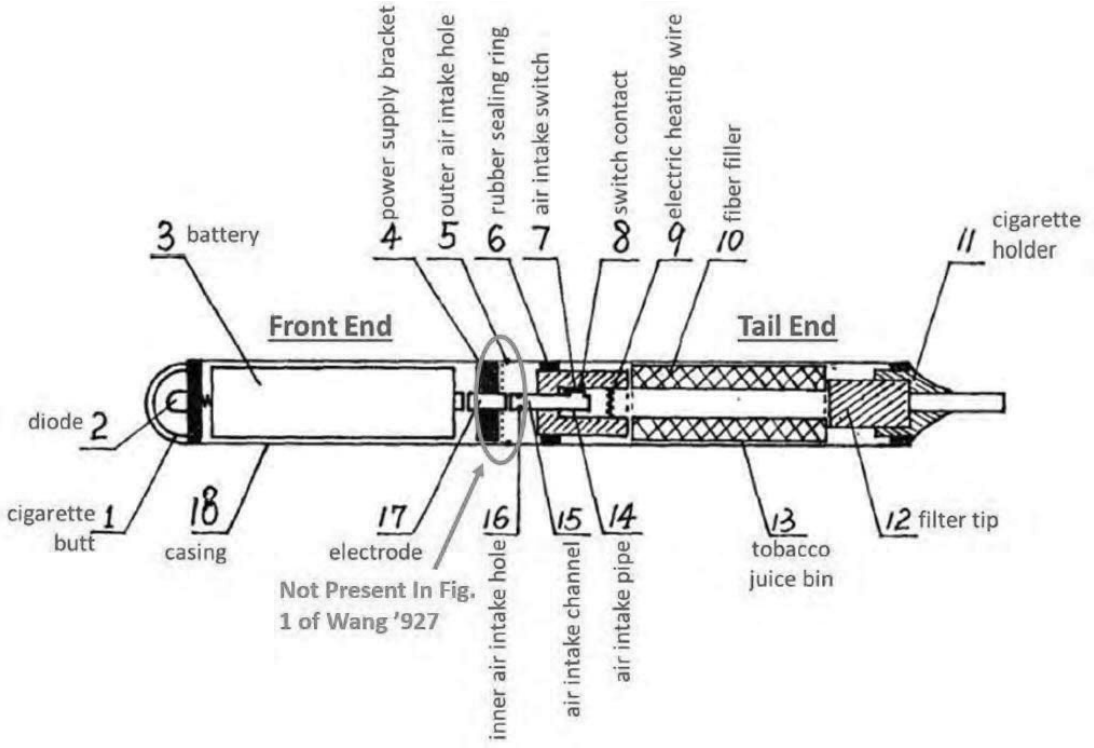
Respondent's expert also contends that "[t]he front end includes, among other components, the cigarette butt 1, light emitting diode 2, battery 3, power supply bracket 4, and electrode 17." JX-0632C (Leinsing Opening Report) ¶ 324. Respondent mischaracterizes Wang 927 and will not be able to substantiate its position at the hearing. As explained above, the evidence will show that "front end" and "tail end" do not refer to different segments of the cigarette casing, but rather, are indicative of direction relative to the electronic cigarette. This is confirmed by the specification describing only a single "casing 18" with no indication of any sub-components, such as the two separate sections Mr. Leinsing purports to exist. *Id.* at 4. This is further confirmed by the specification explaining that "[t]he power supply, a power supply bracket, an air intake switch, a heater and a tobacco juice bin are installed ***in the casing in sequence***" from the front end of casing 18. *Id.* at 3. This explains that the internal components are intended to be inserted into the casing from one end only, one after another, which would not be necessary if the casing were separable. This is further confirmed by the specification explaining that "[a] cigarette holder 11 is connected to the casing 18 through threads, a filter tip 12 is installed at a front end of the cigarette holder 11…." *Id.* at 4-5. This indicates that first, the casing is unitary in nature, and second, "front end"

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does not refer to a segment of the cigarette, but rather, refers to a direction relative to the cigarette. *See also id.* ("An air intake hole 16 is arranged at a front end of the air intake pipe 14…"). Thus, for example, electric heating wire 9 is at the front end of tobacco juice bin 13, but at the tail end of air intake pipe 14.

Respondent's expert, in his report, annotates Figure 1 Wang 927 with a dashed line in red, which is neither present nor identified in the unannotated Figure 1. JX-0632C (Leinsing Opening Report) ¶ 324. This annotation is reproduced below for reference.



JX-0632C (Leinsing Opening Report) at Fig. 1 (red annotations by Mr. Leinsing)

To the extent Respondent suggests the dashed red line demarcates a purported separation of "front end" and "tail end," as explained above, Respondent will not be able to demonstrate that a single casing as disclosed in the specification of Wang 927 may be divided into two separate segments.

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Respondent's expert states "[t]he tail end includes a portion of the casing 18, which houses, among other components, outer air intake hole 5, rubber sealing ring 6, air intake switch 7, switch contact 8, electric heating wire 9, fiber filler 10, filter tip 12, tobacco juice bin 13, air intake pipe 14, air intake channel 15, and inner air intake hole 16." JX-0632C (Leinsing Opening Report) ¶ 327. Respondent's expert mischaracterizes Wang 927 and will not be able to substantiate his position at the hearing. As explained above, it is clear that "front end" and "tail end" do not refer to different segments of the cigarette casing, but rather, are indicative of direction relative to the electronic cigarette.

Respondent's expert states "Wang 927 also discloses a 2-piece device with the 'tail end' being separable from the 'front end.'" JX-0632C (Leinsing Opening Report) ¶ 328. Respondent's expert, Mr. Leinsing, mischaracterizes Wang 927 and will not be able to substantiate its position at the hearing. As explained above and as the evidence will show, Wang 927 discloses a single casing 18, and repeatedly confirms its unitary nature. Respondent's expert further states "If the 'front end' and the 'tail end' were an integrated single piece, a POSITA would not need to include a power supply bracket or an electrode. Instead, a POSITA would only use a single air intake pipe to electrically couple the battery to the heating wire in the 'tail end.'" *Id.* Respondent's expert mischaracterizes Wang 927 and will not be able to substantiate his position at the hearing for at least the above reason. Additionally, as will be shown at the hearing, he fails to consider other reasons to implement a power supply bracket and electrode, including holding the battery in place with greater security, preventing air leakage towards the battery, and preventing undesirable compounds accumulating around the battery. Respondent's expert further states "Wang 927 discloses two outer air intake holes 5 positioned opposite of each other on the casing…. If the 'front end' and the 'tail end' were an integrated single piece, a POSITA would not need to include

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two outer air intake holes, which are more expensive to make compared to a single outer air intake hole on the casing. Instead, a POSITA would only need to drill one hole on the casing." *Id.* Respondent's expert mischaracterizes Wang 927 and will not be able to substantiate his position at the hearing for at least the above reason. Additionally, as the evidence will show at the hearing, he fails to consider other reasons to implement two outer air intake holes, including convenience as two opposing holes could be drilled together with a single step identically to drilling a single hole, greater air flow capacity, and aesthetic concerns. In fact, Respondent's expert admits that Wang 927 "discloses two outer air intake holes 5 ***positioned opposite of each other***," lending further credibility to the convenience of drilling two opposite holes in a single motion. These opposing outer air intake holes also provide redundancy if one of the air holes is clogged.

Indeed, Mr. Leinsing's own opinion regarding one-piece e-cigarettes shows that Wang 927 discloses a one-piece device: "Known one-piece e-cigarettes included: (1) a battery that powers the device (2) an absorbent material and/or other solution holding means that holds the e-liquid; (3) a means for heating the e-liquid, and (4) a means for vaporizing the e-liquid by fluid/heat transfer, all within a single inseparable casing." JX-0632C (Leinsing Opening Report) ¶ 47. Wang 927 discloses a battery that powers the device ("battery 3"), an absorbent material and/or other solution holding means that holds the e-liquid ("fiber filler 10," "tobacco juice bin 13"), a means for heating the e-liquid ("electric heating wire 9"), and a means for vaporizing the e-liquid by fluid/heat transfer ("electric heating wire 9" heats air, which "carries heat generated by the electric heating wire 9, causing tobacco juice filled into the fiber filler in the tobacco juice bin 13 to vaporize to form smoke"), all within a single inseparable casing ("casing 18"). JX-0594 (Wang 927) at 5. Thus, as the evidence will show, Wang 927 discloses a one-piece device.

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Respondent's expert, Mr. Leinsing, states that "Wang '927 discloses having a first aperture and a first end of the housing." JX-0632C (Leinsing Opening Report) ¶ 336. However, Mr. Leinsing will not be able to show this at the hearing. First, as explained above, he has failed to identify a cartridge having a housing. Thus, all subsequent limitations referencing "the housing" are not disclosed for lack of a cartridge housing. Additionally, Respondent's expert admits the "first aperture" he identifies, the "inner air intake hole 16," is not "on" the housing as the limitation requires, but rather, "in[side] the housing," specifically on air intake pipe 14. JX-0632C (Leinsing Opening Report) ¶ 336.

Additionally, the evidence will show that the "first aperture" Respondent's expert identifies is not on any "end" of air intake pipe 14 either. In fact, Wang 927 explicitly states "[t]he air intake pipe 14 is a round copper pipe ***with both ends sealed***." JX-0594 (Wang 927) at 4. Thus, the evidence will show that it is impossible for any aperture to be on the ends of air intake pipe 14. Instead, as Figure 1 of Wang 927 makes clear, inner air intake hole 16 is in fact ***on the side***, not end, of air intake pipe 14.

Indeed, Respondent's expert admits this very fact in his depiction of the inner air intake holes on air intake pipe 14 and proposed modifications of the same. JX-0632C (Leinsing Opening Report) ¶ 337. This illustration is reproduced below:

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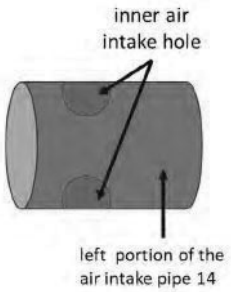


Fig. A – Wang '927 (Illustration of the left portion of the air intake pipe 14 and inner air intake hole 16 from Fig. 1 of Wang '927).

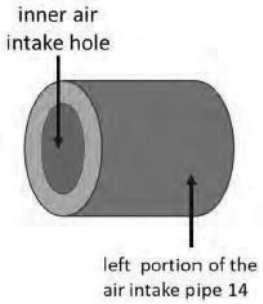


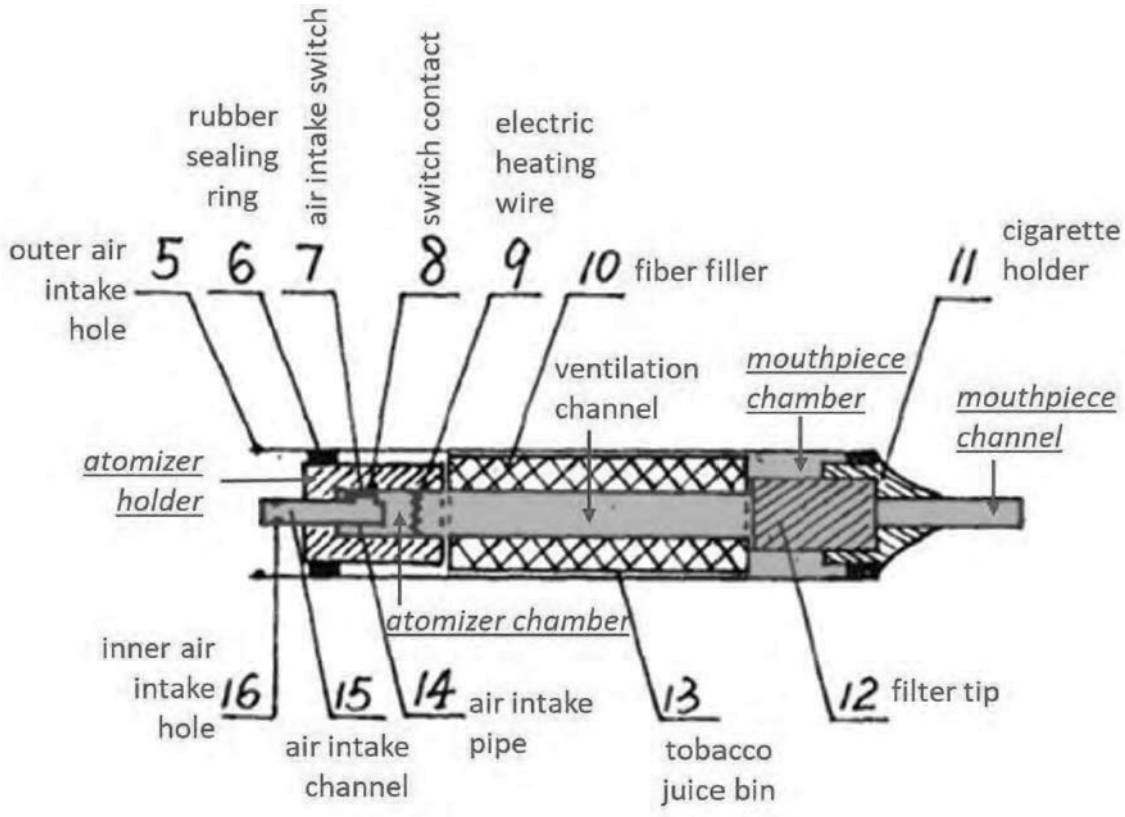
Fig. B – Wang '927 (Illustration of the the air intake pipe 14 with a modifed inner air intake hole).

JX-0632C (Leinsing Opening Report) (Mr. Leinsing's Depiction of Air Intake Pipe 14 in Wang 927 and His Proposed Modification of the Same)

Respondent's expert proposes four annotated figures of a cropped version of Figure 1, which he opines show Wang 927's disclosure of a central and axial airflow passageway. JX-0632C (Leinsing Opening Report) ¶¶ 345-352. All four are reproduced below for ease of reference:

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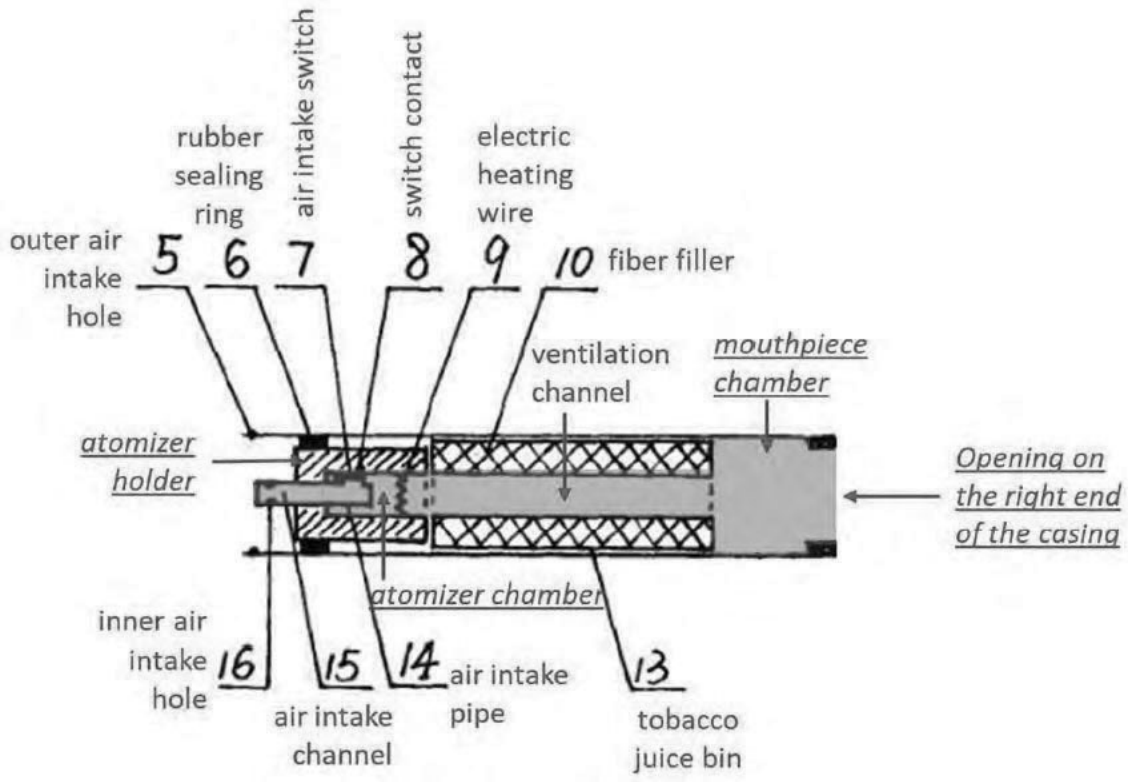
[redacted]



JX-0632C (Leinsing Opening Report) (Mr. Leinsing's First Proposed Airflow Passageway ¶ 347)

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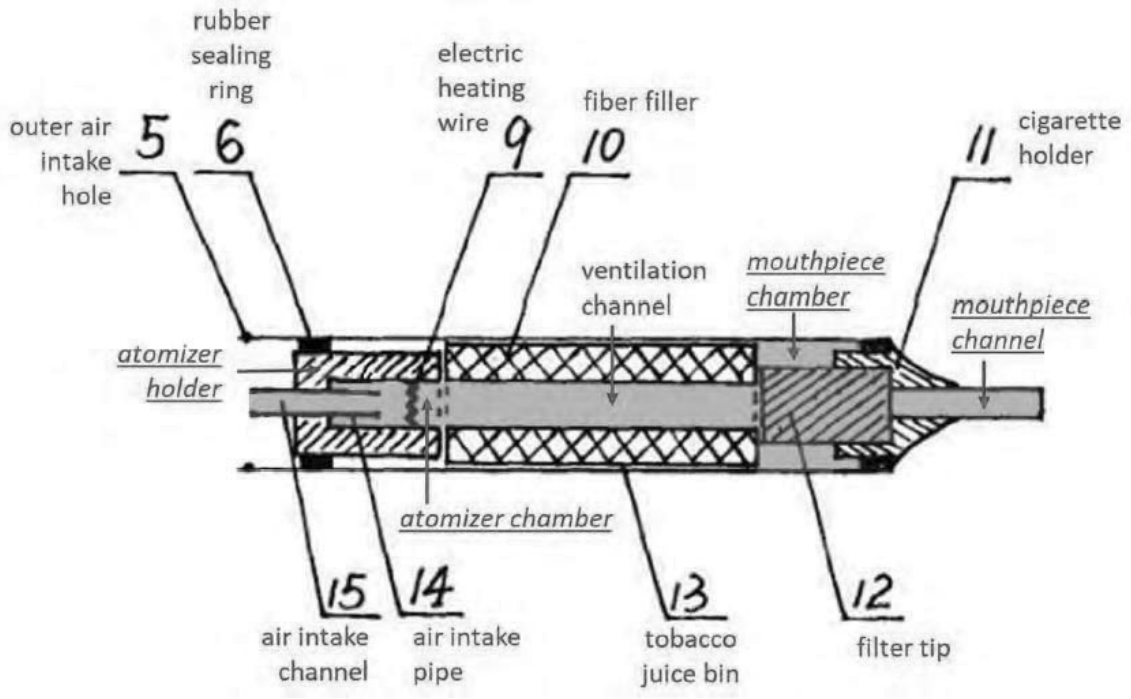
[redacted]



JX-0632C (Leinsing Opening Report) (Mr. Leinsing's Second Proposed Airflow Passageway ¶ 349)

NJOY Exhibit 2007.586
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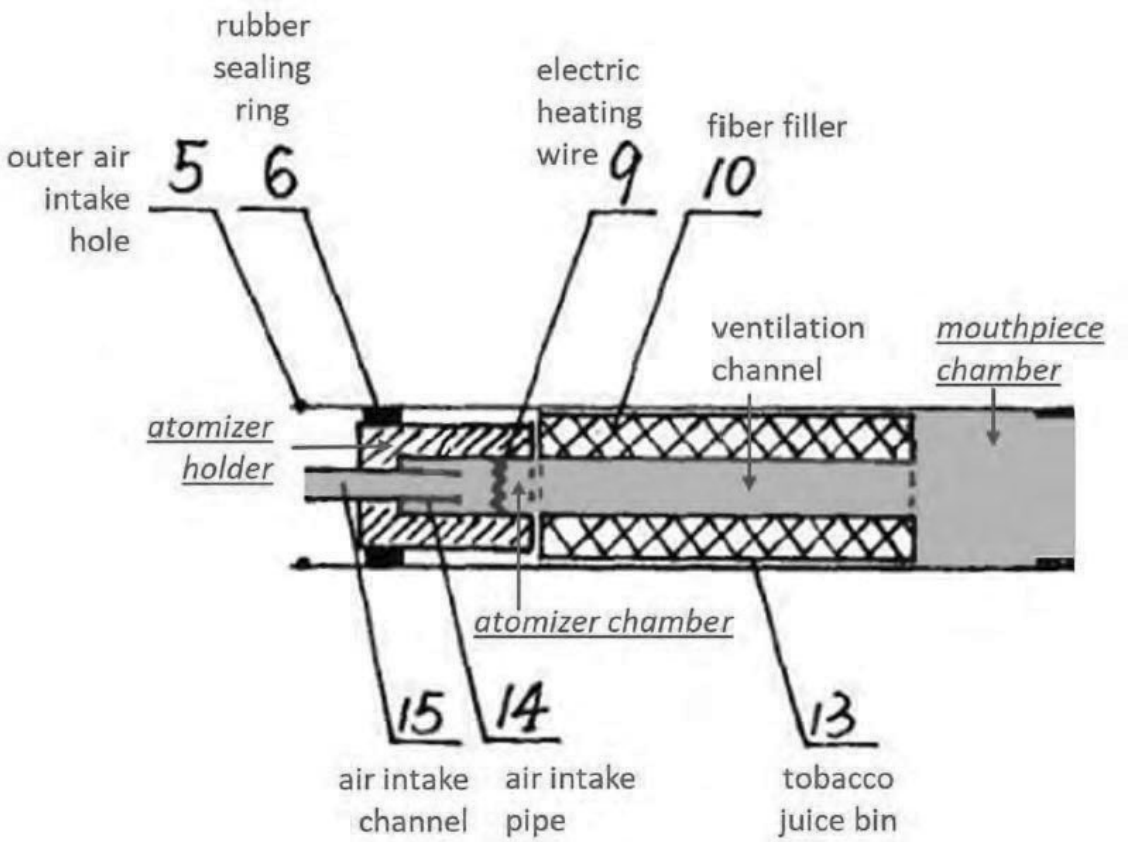
[redacted]



JX-0632C (Leinsing Opening Report) (Mr. Leinsing's Third Proposed Airflow Passageway ¶ 351)

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[redacted]



JX-0632C (Leinsing Opening Report) (Mr. Leinsing's Fourth Proposed Airflow Passageway ¶ 352)

Respondent's expert's first proposal appears to modify Wang 927 by dividing casing 18 where air intake pipe 14 contacts electrode 17. Respondent's expert's second proposal appears to depict a modification of the first proposal, namely by removing cigarette holder 11 and filter tip 12. Respondent's expert's third proposal appears to depict his proposed modified air intake pipe 14 with the inner air intake hole 16 moved to the end of the air intake pipe. Respondent's expert's fourth proposal appears to depict a combination of his second and third proposals.

It appears Mr. Leinsing opines that tobacco juice bin 13 is located in "the tail end," as he depicts in an improperly modified version of Figure 1. JX-0632C (Leinsing Opening Report) ¶

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[redacted]

354. If he does, Respondent will not be able to show this at the hearing. As the evidence will show, casing 18 is a single unitary component.

Additionally, Respondent's expert mischaracterizes Wang 927 by stating that "electric heating wire 9 [] generates heat to vaporize tobacco juice." As the specification of Wang 927 makes clear, however, electric heating wire 9 only heats air, which then carries the generated heat away from the heating element into the tobacco juice bin 13. JX-0594 (Wang 927) at 5 ("Air carries heat generated by the electric heating wire 9, causing tobacco juice filled into the fiber filler in the tobacco juice bin 13 to vaporize to form smoke."). As such, Respondent will not be able to support any of its positions which rely on Mr. Leinsing's mischaracterization.

(5) Han 364

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are anticipated by Han 364 and rendered obvious in view of Han 364, Fang 044, Smoke Fifty-One Duo, Red Dragon, and NJOY NPRO Style.[16] The evidence will show that these assertions are false and that Respondent's characterization of Han 364 is flawed. *See* Sections IV.E.4.b)(5) and IV.F.4.b)(5).

As a preliminary note, KR20100004364U is currently referred to as Han 364 by the parties in this investigation. This reference was previously designated as Soo 364 in JLI's Initial Invalidity Contentions and First Supplemental Invalidity Contentions. This does not change the arguments made with respect to the reference.

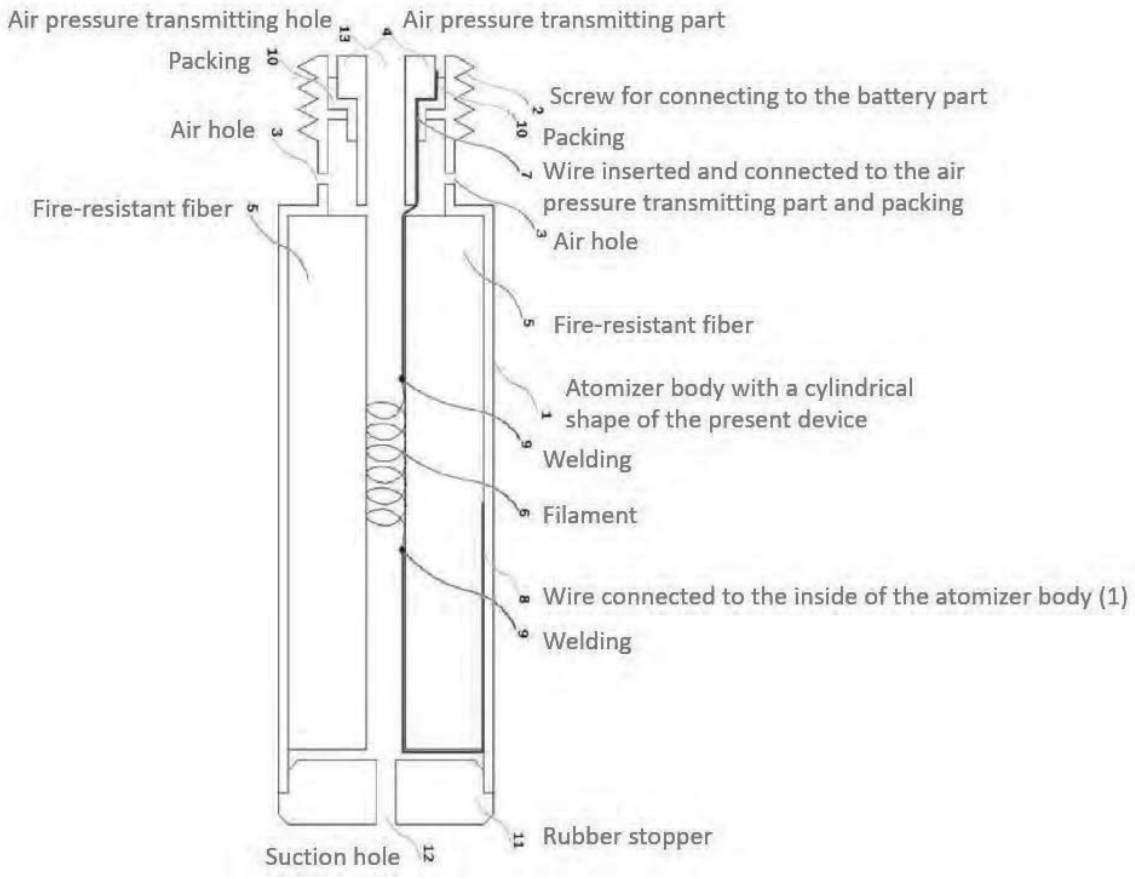
[16] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on Han 364 (§102) and the combination of Han 364, Fang 044, Smoke Fifty-One Duo, Red Dragon, and NJOY NPRO Style (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(5) and IV.F.4.b)(5), below.

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[redacted]

Additionally, Han 364 was purportedly published on April 29, 2010. JX-0631 (Han 364). *See also* JX-0632C (Leinsing Opening Report) ¶ 357. As the evidence will show, the claims of the Asserted Patents were invented and reduced to practice in 2009. *See* Section IV.C, above. As such, Han 364 is not prior art to the Asserted Patents. Any analysis and argument as rebuttal to Respondent's validity arguments should not be construed as an admission otherwise.

Han 364 describes an "atomizer for electronic cigarettes" "adopting an integrated method of supplying nicotine liquid directly into the atomizer rather than a cartridge method (Diagram 8) that uses a separate plastic cartridge (33) that is discarded after one use." JX-0631 (Han 364) at Summary. It further describes re-filling the device with nicotine liquid and replacing the internal filling fiber. *Id.*

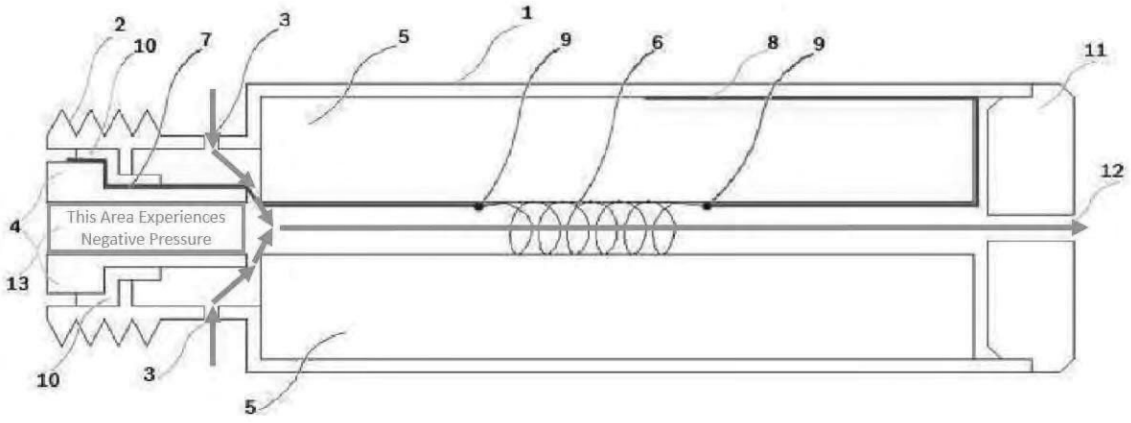


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[redacted]

JX-0631 (Han 364), Fig. 1 (With Labels)

When suction is applied to rubber stopper 11, air enters the atomizer through air holes 3 (Figs. 1 & 2)/17 (Fig. 5), and negative pressure is applied at air pressure transmitting hole 13. *See, e.g.*, *id.* at [0013], [0034], Fig. 1, Fig. 2, Fig. 5. An annotation of Figure 1 below illustrates this. The blue arrows represent air flow, while the orange area represents the negative pressure applied.



CX-2726 (Vallee Rebuttal Report) ¶ 305 (With Labels)

The negative pressure applied at air pressure transmitting hole 13 activates the suction sensor inside the battery part with built-in battery and suction sensor 14. JX-0631 (Han 364), at [0013], [0034], Fig. 1, Fig. 2, Fig. 5. The activated suction sensor inside the battery part with built-in battery and suction sensor 14 operates to supply power to the filament 6, heating and vaporizing the liquid contained in the fire-resistant fiber 5, generating smoke along with air entering through air holes 3 which may be inhaled through suction hole 12. *Id.*

As will be explained by Complainant's expert, Dr. Vallee, Respondent and its expert, Mr. Leinsing, at times characterize Han 364 inconsistent with its disclosure. Respondent will be unable to support any of its positions which rely on such opinions.

Additionally, in his obviousness analysis of Han 364, Mr. Leinsing raises Han 364 in view of Xia 610 only once, in a sentence with several typos. JX-0635 (Leinsing Opening Report, Appx.

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[redacted]

C) ¶ 3. He then fails to make any further mention of Xia 610 in his following analysis of Han 364. *See generally* JX-0635 (Leinsing Opening Report, Appx. C). Accordingly, Complainant treats this single reference to Xia 610 as a typographical error, and reserves all rights to respond regarding Han 364 in view of Xia 610 if Respondent intends to present this as a 103 combination.

The evidence will show that Han 364 is directed to specific improvements over prior e-cigarette design. *See generally* JX-0631 (Han 364). Yet Respondent's invalidity arguments are based primarily on a prior art design described by Han 364, which Han 364 expressly characterizes as overly expensive and not consumer friendly. *See, e.g.*, *id.* at Cl. 3 ("Unlike the existing disposable integrated-type atomizer (Diagram 9)…"); Summary ("The present device, as an atomizer for electronic cigarettes, eliminates the cost of cartridge consumption by adopting an integrated method of supplying nicotine liquid directly into the atomizer rather than a cartridge method (Diagram 8) that uses a separate plastic cartridge (33) that is discarded after one use."); [0014] ("All atomizers for electronic cigarettes currently on the market are made in China and are divided into two main types. One is a very widely used method, as shown in (Diagram 8), the cartridge method…Another is, as shown in (Diagram 9), the integrated method…; [0016] Based on this awareness of the problem, the present device (Diagram 1) adopts…rather than the cartridge method (Diagram 8)…rather than using the atomizer once and discarding it like the existing integrated-type atomizer (Diagram 9)…").

Accordingly, given Han 364's treatment of this prior art, the evidence will show that a POSITA would not have been motivated to consider this prior art in combination with the device Han 364 describes. CX-2732 (Vallee Rebuttal Report, Appx. C) ¶ 4.

Additionally, the evidence will show that Han 364 is not an operable device. As Respondent's expert Mr. Leinsing himself describes, "both sides of the wire…are connected to the

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[redacted]

positive pole of the DC battery." JX-0632C (Leinsing Opening Report) ¶ 359 (citing JX-0631 (Han 364) at [0017]). A circuit cannot be completed by connecting both sides to a single pole of a battery. Thus, Han 364's e-cigarette cannot be operable.

Respondent and its expert argue that "a [POSITA] would have found it obvious to modify the solution holding medium to completely surround the airflow passageway." JX-0632C (Leinsing Opening Report) ¶ 381. However, Respondent's expert has not provided, and will not be able to, any evidence or analysis supporting his entirely conclusory statement, and thus Respondent will not be able to support this position at the hearing. *See* Section IV.E.4.b)(5)(a) (rebutting the proposed modification of Han 364).

Respondent and its expert argue that "Han '364 discloses multiple types of heating elements." JX-0632C (Leinsing Opening Report) ¶ 384. *See also id.* ¶¶ 387-400. However, Han 364 only proposes for its device one type of heating element, an axial resistive heating filament with a coiled portion. The other disclosures of heating elements are those that Han 364 disparages. *See, e.g.*, JX-0631 (Han 364) at Summary ("The present device, as an atomizer for electronic cigarettes, eliminates the cost of cartridge consumption by adopting an integrated method of supplying nicotine liquid directly into the atomizer rather than a cartridge method (Diagram 8) that uses a separate plastic cartridge (33) that is discarded after one use."); [0014] ("All atomizers for electronic cigarettes currently on the market are made in China and are divided into two main types. One is a very widely used method, as shown in (Diagram 8), the cartridge method…; [0016] Based on this awareness of the problem, the present device (Diagram 1) adopts…rather than the cartridge method (Diagram 8)…"). As shown by the specification, Han 364 in fact teaches away from and claims to improve upon these other heating element configurations.

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[redacted]

Respondent's expert contends that "[a]irflow through the airflow passageway . . . would therefore move in a direction perpendicular to the end portions of filament 6 annotated in pink below," which Respondent identifies as a transverse portion of the heating element. JX-0632C (Leinsing Opening Report) ¶ 386. Respondent will be unable to show that these end portions constitute a transverse heating element. *See also* Section IV.4.b)(4)(b)(ix). The coil as a whole is axial to the airflow. Indeed, Mr. Leinsing admits filament 6 is "oriented vertically [*i.e.*, axially] within the airflow passageway." JX-0635 (Leinsing Opening Report, Appx. C) ¶ 80.

Mr. Leinsing further opines regarding a POSITA's motivation to purportedly combine Han 364's Figure 8 with the teachings of Han 364. JX-0632C (Leinsing Opening Report) ¶¶ 393-400. As a preliminary matter, as explained above, Han 364 in fact teaches away from a transverse heating element, by disparaging the prior art configuration shown in Figure 8. Additionally, the purported motivation to combine the teachings of Han 364, including the elements disclaimed, disavowed, or disparaged for argument only, are addressed further in Section IV.E.4.b)(4), below. As described, Respondent will not be able to demonstrate that a POSITA would have been motivated to perform such a combination.

(6) Smoke Fifty-One Duo

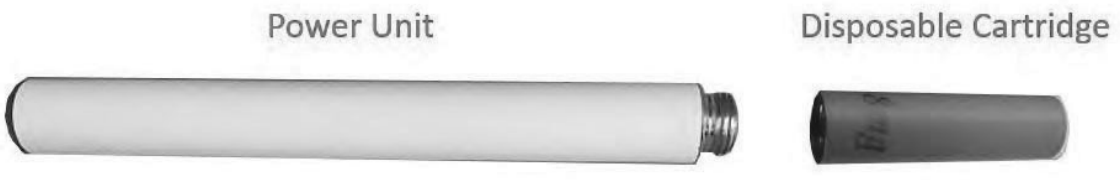
Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are rendered obvious in view of Smoke Fifty-One Duo, Fang 044, and Wang 927.[17] The evidence will show that these assertions are false and that Respondent's characterization of Smoke Fifty-One Duo is flawed. *See* Sections IV.E.4.b)(6) and IV.F.4.b)(6).

[17] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on the combination of Smoke Fifty-One Duo, Fang 044, and Wang 927 (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(6) and IV.F.4.b)(6), below.

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[redacted]

The Smoke Fifty-One Duo is an electronic cigarette with two parts that screw into one another, one part being a disposable cartridge and the second being a power unit, including a battery. An atomizer is integrated into the disposable cartridge with a batting material, making it a cartomizer. An axial heating coil is housed in the cartridge.



RX-0130C.0036 (Power Unit) (annotated), .0037 (8mg Cartridge) (annotated)

When an adult consumer inhales on the mouth end of the cartridge, the heating coil in the cartridge receives power from the battery, via the power unit's male conductor and the cartridge's female conductor. The heating coil vaporizes nicotine solution held in the batting material. Air flows into an opening on the cartridge's female conductor, mixes with the vaporized solution, and travels to another opening on the second end that releases the vaporized solution to the adult consumer.

The Smoke Fifty-One Duo has a similar structure and design as the Red Dragon E-Cig, and Respondent's expert, Mr. Leinsing, agrees. *See* JX-0632C (Leinsing Opening Report) ¶ 472. As such, many of the reasons that the Asserted Patents are valid in view of the Red Dragon E-Cig are the same reasons that the Asserted Patents are valid in view of the Smoke Fifty-One Duo. *See* Sections IV.E.4.b)(7) and IV.F.4.b)(7).

Complainant anticipates that Respondent and its expert, Mr. Leinsing, will rely on conflicting pieces of evidence to support a contention that the Asserted Patents are invalid in view of the Smoke Fifty-one Duo. Their reliance on such conflicting pieces of evidence, much of which

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[redacted]

is dated after the invention of the Asserted Patents, will undermine Respondent's contention. *See, e.g.,* JX-0632C (Leinsing Opening Report) ¶¶ 414-417.

The evidence at the hearing will show that the Smoke Fifty-One Duo devices relied upon by Respondent and its expert, or Smoke Fifty-One Duo devices having the same designs, do not qualify as prior art. Neither Respondent nor its expert, Mr. Leinsing, has shown, or will be able to show, that Smoke Fifty-One devices relied upon, or Smoke Fifty-One devices having the same designs, were publicly known or used, or on sale in the United States, prior to the inventions of the Asserted Patents, or more than one year prior to the priority date of the Asserted Patents.

Respondent's expert and its expert, Mr. Leinsing, contend that the "Smoke Fifty-One Duo was offered for sale in the United States on no later than October 18, 2008." JX-0632C (Leinsing Opening Report) ¶ 415. The evidence will not bear this out. To support this contention, Mr. Leinsing identifies a printout of a webpage (JX-0624). However, that page is missing graphics and does not clearly demonstrate that it is for the Smoke Fifty-One Duo, let alone for the same Smoke Fifty-One designs relied upon. Moreover, the webpage does not clearly demonstrate that the Smoke Fifty-One Duo was on sale in the United States at least as early as October 18, 2008, does not indicate how to purchase the products, and does not include any price. In fact, there is nothing to link any product on the website and the specific Smoke Fifty-One Duo devices and designs relied upon by Respondent and Mr. Leinsing. Mr. Leinsing also relies on Greg Conley's testimony that "[a]t some point in time, Smoke 51's brand of that general product became known as a Duo." JX-0548 (12/04/2019 Conley) at 67:7-10. Mr. Conley's testimony does not demonstrate that the Smoke Fifty-One Duo devices and designs relied upon by Respondent and Mr. Leinsing were on sale in the United States at least as early as October 18, 2008.

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[redacted]

Complainant anticipates that Respondent and Mr. Leinsing will also rely on a website screengrab (JX-0614) as showing that the "Smoke 51 Duo-cigarette was sold no later than July 7, 2009 and used a 2-piece design." JX-0632C (Leinsing Opening Report) ¶ 53. However, the figure does not depict an internal airflow passageway, a solution holding medium, or clearly depict the location or design of a heating element.



JX-0614.0001

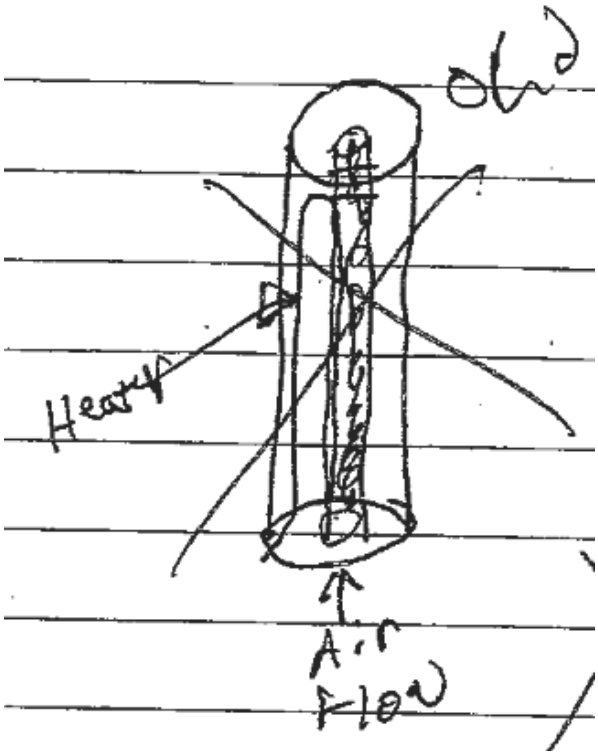
Specifically, zooming in on the figure of the e-cigarette depicted on the webpage, it appears to show a "Heating Vapor Coil" downstream from an "Atomization Chamber." There is no central airflow passageway and no solution holding medium surrounding an airflow passageway and a heating element. Without more detail as to the configuration of the internal device (which otherwise appears inconsistent with the devices Mr. Leinsing relies upon), the website does not clearly demonstrate that the Smoke Fifty-One Duo was on sale in the United States no later than July 7, 2009.

Complainant also anticipates that Respondent or its expert, Mr. Leinsing, will rely on a sketch from Greg Conley (JX-0507), which depicts Mr. Conley's understanding of the configuration of the Smoke Fifty-One Duo. JX-0632C (Leinsing Opening Report) ¶ 416. In his report, Mr. Leinsing contends that "both Mr. Conley's sketch and the Smoke Fifty-One Duo cartridges include a central and axial airflow passageway with a heating coil inside, with both the airflow passageway and the heating coil being wrapped within a batting material holding nicotine solution." JX-0632C (Leinsing Opening Report) ¶ 416. This contention is incorrect – Mr. Conley's sketch does not show that a Smoke Fifty-One Duo that Mr. Conley examined prior to the invention

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[redacted]

of the Asserted Patents had a central and axial airflow passageway with a heating coil inside. *See* CX-1377C (02/29/2024 Conley) at 92:4-14. Indeed, Mr. Conley's sketch identifies a "Heater" with an arrow pointing to a portion of the cartridge that is not central and axial.



JX-0507.0001

Mr. Leinsing also contends that Mr. Conley's sketch "is materially consistent with the structure of the Smoke Fifty-One Duo cartridges analyzed in the *Fuma v. RJRV* litigation." JX-0632C (Leinsing Opening Report) ¶ 416. However, it is not clear exactly what Smoke Fifty-One cartridges Mr. Leinsing is referring to. To the extent that Mr. Leinsing is referring to the devices he and Respondent rely upon to support their invalidity argument, this contention is incorrect.

To support their contention regarding the Smoke Fifty-One Duo, Complainant expects that Respondent and Mr. Leinsing will rely upon "the Wang Declaration, where Mr. Wang declared

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[redacted]

that he provided the cartridges analyzed in the *Fuma v. RJRV* litigation and that they were the same as Smoke Fifty-One Duo products Mr. Wang sold in the 2008-2009 timeframe." JX-0632C (Leinsing Opening Report) ¶ 417 (citing RX-0129C ("Wang Declaration")). They will also rely upon a declaration provided by Atif Yardimici, Exponent senior manager (RX-0130C ("Yardimici Declaration")), who conducted technical analyses (including CT scans) on the three Smoke-Fifty One Duo devices purportedly supplied by Mr. Wang. Notably, Mr. Lesinsing has not inspected any of these physical samples. Respondent's and Mr. Leinsing's reliance on these declarations that discuss the three devices purportedly supplied by Mr. Wang, which do not share the same design, is misplaced.

The Wang Declaration, in which Mr. Wang provides uncorroborated testimony, is unreliable and inconsistent. Indeed, the ALJ in this Investigation declared during the February 16, 2024 Case Management Conference that "[i]t doesn't appear that Mr. Wang is necessarily completely truthful. So I would take with a grain of salt what he has said with respect to the prior art. I don't believe from what I have seen it is necessarily true." 2/16/2024 Case Management Conference Tr. at 85:9-13. Complainant concurs with the ALJ and does not agree with Respondent's and Mr. Leinsing's reliance on the Wang Declaration.

In the Wang Declaration, Mr. Wang refers to "Cartridge 1," "Cartridge 2," and "Cartridge 3," which correspond to the "16 mg cartridge," "8 mg cartridge," and "4 mg cartridge," respectively.

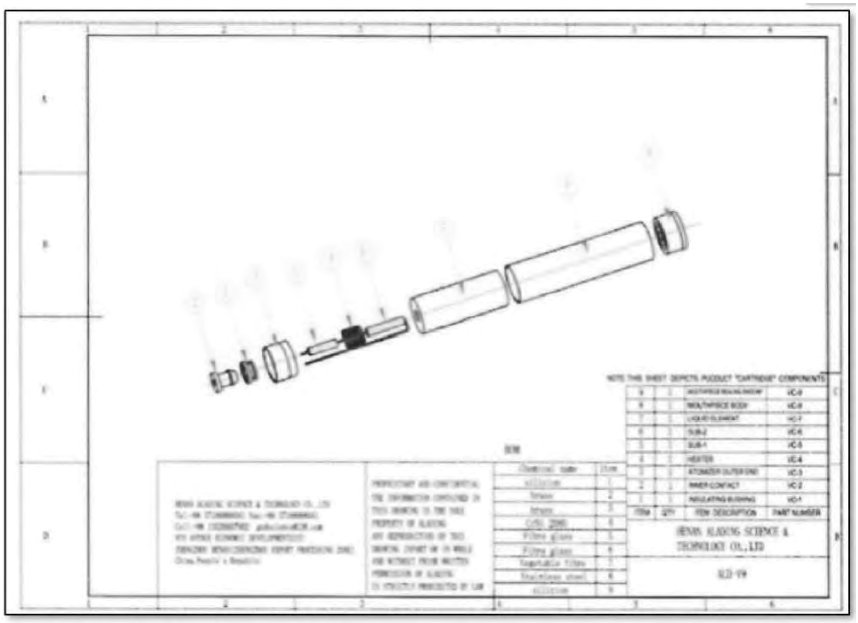
In paragraph 7 of the Wang Declaration, Mr. Wang asserts without corroboration that "Cartridge 1" depicted in Exhibit 3 is the "same as the product I was selling in the timeframe of 2008-2009." RX-0129C.0003 ¶ 7. Mr. Wang does not allege that "Cartridge 1" is an actual cartridge from that time, nor is there any evidence of that being the case. Mr. Wang also does not

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[redacted]

state that this cartridge was one he sold to "LoongTotem" or "Smoke Anywhere," or in fact to anyone in the United States whatsoever – which is a requirement for the sale of a system to be prior art. Because "Cartridge 1" was provided by Mr. Wang without a box, there is no way to assess its provenance other than through his uncorroborated testimony.

In fact, Mr. Wang states that a cartridge different from "Cartridge 1" was sold to LoongTotem, the "ALD-V9." Mr. Wang provides an undated drawing purporting to depict the "ALD-V9" which is clearly different than the device he identifies as "Cartridge 1":

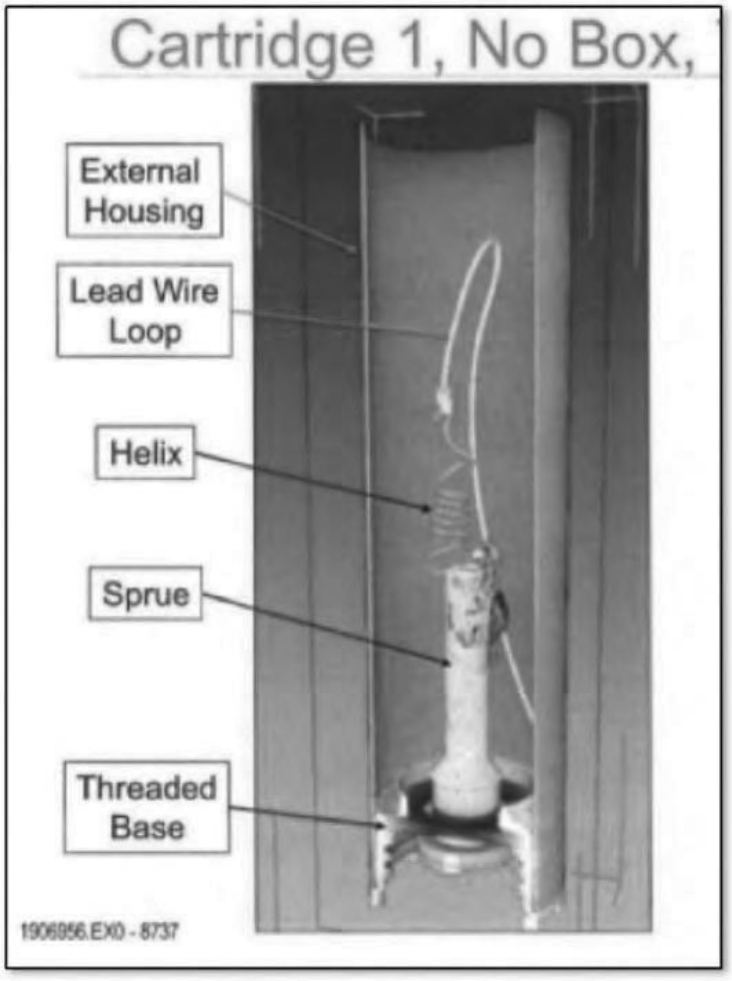


RX-0129.0050

As an initial matter, nowhere does Mr. Wang state that the above diagram was published in any way, and the caption (when zoomed in) reads that the diagram is "PROPRIETARY AND CONFIDENTIAL." Additionally, unlike the above drawing, the images produced by Exponent of "Cartridge 1" show that it has an elongated metal sprue and no separate sleeve:

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[redacted]

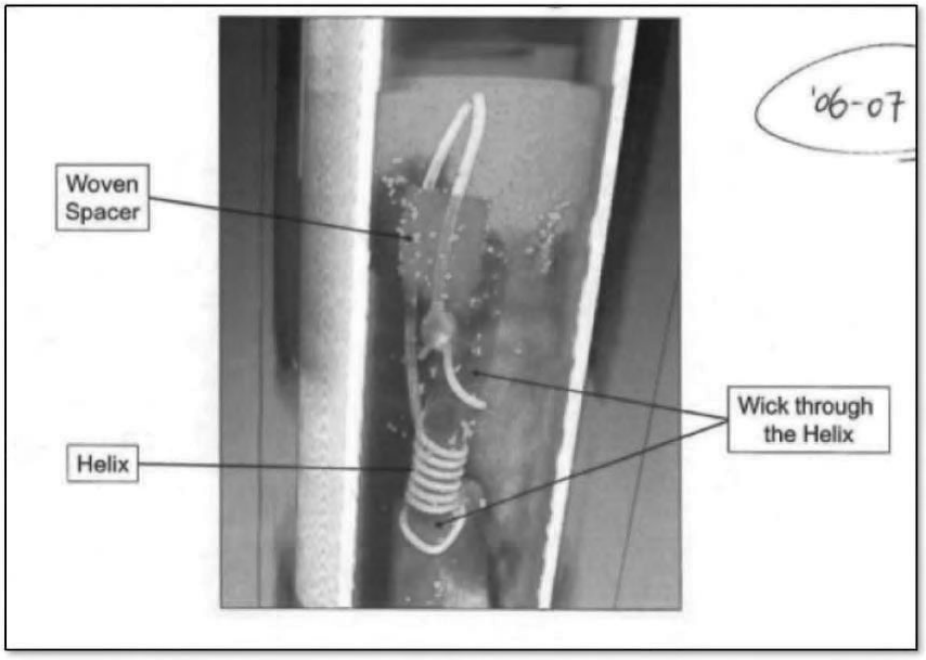


RX-0129.0035

"Cartridge 1" is also annotated by Exponent with a "[w]ick through the Helix" that is not a part of the ALD-V9 design drawing:

NJOY Exhibit 2007.601
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[redacted]



RX-0129.0037

"Cartridge 1" and the ALD-V9 that Mr. Wang claims to have sold to LoongTotem are therefore not the same devices based on the Wang Declaration. Moreover, no sprue or sleeve is depicted in Wang 554, so none of Cartridges 1, 2, or 3 in the Wang Declaration are the same as the device disclosed by Wang 554.

Mr. Wang also does not state that he sold Cartridge 1 to Smoke Anywhere, instead stating that "I also sold two-piece electronic cigarettes to Smoke Anywhere in 2008 and 2009" and that "[d]iagrams of the cartridge for the Fifty-One two-piece electronic cigarettes are depicted in the attached hereto as Exhibit 3." RX-0129C.0005 ¶¶ 11, 12. Mr. Wang also states that "[t]hese cartridges are labeled as Cartridge 2 (Menthol, 8 mg) and Cartridge 3 (Tobacco, 4 mg) in Exhibit 3." *Id.* ¶ 12. Cartridges 2 and 3 differ from Cartridge 1. *See id.* .0006 ¶ 13 (noting some differences). Moreover, Cartridges 2 and 3 could not possibly have been sold to Smoke Anywhere in the 2008-2009 timeframe. Both Cartridges 1 and 2 were labeled as being products of "Vapor Corp":

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[redacted]



CX-2800 (Cartridge 2 Photograph from the Aug. 10, 2020 Inspection of the Wang Devices at Exponent Facilities)



RX-0129.0044

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As explained in Vapor Corp's Annual Report (filed March 31, 2010) for the year ending December 31, 2009, in the section entitled "Company Background":

> Vapor Corp. and its wholly-owned subsidiaries (collectively "Vapor" or the "Company") design, market, and distribute personal vaporizers, under the Fity-One™, Krave™, EZ Smoker™, Smoke Star™ and Green Puffer™ brands .... The Company was originally incorporated as Miller Diversified Corp in 1987 as a Nevada corporation, and operated in the commercial cattle feeding business until October 31, 2003 when the company sold substantially all of its assets and became a discontinued operation. On September 1, 2009, the Company acquired Smoke Anywhere USA, Inc. in a reverse triangular merger; and as a result of the merger Smoke Anywhere became our sole operating business. ***On January 7, 2010 the Company changed its name to Vapor Corp***. Our corporate website is located at www.vapor-corp.com.

Vapor Corp 10-K of 3/31/2010 at 2 from SEC.gov, available at https://www.sec.gov/Archives/edgar/data/0000844856/000095012310030980/ c98669e10vk.htm (emphasis added).

Because Cartridges 2 and 3 are labeled with "Vapor Corp" they must have been made after January 7, 2010, as "Vapor Corp." did not exist before then.

Moreover, a review of the packaging of Cartridges 2 and 3 show that they were made on June 6, 2013 and August 31, 2011, respectively. Both packages have date codes on the box starting with "#D" followed by a date in YYMMDD format.[18]

[18] "The date format follows the Chinese hierarchical system, which has traditionally been big-endian. Consequently, it correlates with ISO 8601 - year first, month next, and day last (e.g. 2006-01-29)." https:/ /en.wikipedia.org/wiki/Date and_ time_ notation_ in_ Asia#Date 2

NJOY Exhibit 2007.604
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[redacted]

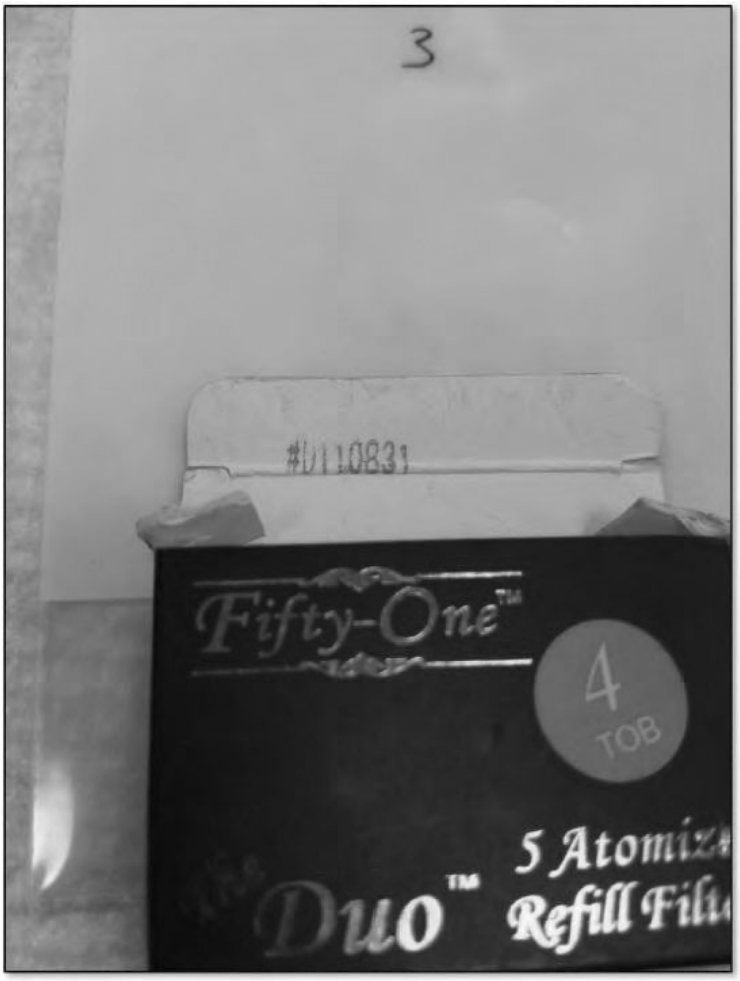


CX-2799 (Cartridge 2 Photograph from the Aug. 10, 2020 Inspection of the Wang Devices at Exponent Facilities)

Cartridge 3 has a date code printed on the inside lid of "#D110831" corresponding to August 31, 2011.

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[redacted]



CX-2798 (Cartridge 3 Photograph from the Aug. 10, 2020 Inspection of the Wang Devices at Exponent Facilities)

Mr. Wang also includes a single invoice to Smoke Anywhere USA, Inc. as Exhibit 5 to his Declaration, but the device has no identifying information other than "Electronic smoking device." RX-0129.0052. Mr. Wang also does not establish whether any of the devices allegedly sold by his company were actually distributed to Fuma or Tri-C Technologies, and Mr. Wang also does not claim to be the sole supplier to Smoke Anywhere.

In sum, the Wang Declaration cannot show that the device purportedly sold by Mr. Wang was prior art, or even whether or which of the three product designs discussed by Mr. Wang ((i)

NJOY Exhibit 2007.606
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[redacted]

the product depicted in Cartridge 1 or (ii) Cartridges 2 and 3) were even sold by Mr. Wang before the invention date of the 864 and 881 Patents.

Respondent's expert, Mr. Leinsing, makes a conclusory assertion that the Smoke Fifty-One Duo cartridges he relies upon have "substantially similar structure." JX-0632C (Leinsing Opening Report) ¶ 428. The evidence will show that this assertion is incorrect. Moreover, Mr. Leinsing's report primarily focuses on the 8 mg cartridge, and "[t]o the extent I do not separately discuss the 4 mg cartridge and the 16 mg cartridge, it is my opinion that my analysis of the 8 mg cartridge would similarly apply to those cartridges." *Id.* However, Mr. Leinsing notes "that while the 8 mg cartridge and the 4 mg cartridge share similar features, the 16 mg cartridge has a different configuration." JX-0632C (Leinsing Opening Report) ¶ 448; *see also id.* ¶ 449.

Even assuming the relied-upon Smoke-Fifty One devices were prior art (they are not), Respondent will not be able to show that these devices invalidate the asserted claims of the Asserted Patents. Respondent's expert, Mr. Leinsing, further contends that "[t]he heating coil in the Smoke Fifty-One Duo extends across the entire diameter of the airflow passageway, thereby extending crosswise across the airflow passageway." JX-0632C (Leinsing Opening Report) ¶ 455. This is incorrect, at least for the reasons explained in Sections IV.E.4.b)(6) and IV.F.4.b)(6).

Moreover, Mr. Leinsing opines that "[a]s the helical-shaped heating element in this embodiment wraps around the airflow passageway, in this embodiment, the direction of an axis about which the heating element is wound is parallel to the airflow passageway." JX-0632C (Leinsing Opening Report) ¶ 669. Thus, Mr. Leinsing acknowledges that the direction in which the heating element is wound defines the direction in which the coil is defined. By Mr. Leinsing's logic, the Smoke Fifty-One Duo coil is an axial, not transverse, heating element.

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[redacted]

Mr. Leinsing also contends that the heating coil "has a maximum diameter that is smaller than the diameter of the Smoke Fifty-One Duo Passageway." JX-0632C (Leinsing Opening Report) ¶ 453. However, Mr. Leinsing appears to contradict himself, stating that the heating coil is at least the diameter of the airflow passageway: "[t]he heating coil in the Smoke Fifty-One Duo extends across the ***entire*** diameter of the airflow passageway." JX-0632C (Leinsing Opening Report) ¶ 455 (emphasis added).

Mr. Leinsing contends that "[t]o the extent NJOY contends that the Asserted Claims require the axis of the heating element of Smoke Fifty-One Duo to be oriented horizontally relative to the axis of the cartridge housing, I disagree, as it is my opinion that such limitations are not disclosed in the written description of the Asserted Patents." JX-0632C (Leinsing Opening Report) ¶ 456. The evidence at the hearing will show this is incorrect. Mr. Leinsing further contends that such a modification would have been obvious and beneficial given the knowledge of a POSITA. JX-0632C (Leinsing Opening Report) ¶ 456. This is also incorrect, at least for the reasons explained in Section IV.E.4.b)(6) and IV.F.4.b)(6).

Mr. Leinsing contends that "[f]or the same reason why a person of ordinary skill in the art would have been motivated to look to a reference like Fang '044 or Wang '927 to modify Wang '554," a POSITA "would have been motivated to modify the Smoke Fifty-One Duo with the horizontal coil orientation disclosed in Fang '044 or Wang '927." JX-0632C (Leinsing Opening Report) ¶ 457; *see also id.* ¶¶ 458-460. This is incorrect. As explained in Sections IV.E.4.b)(6) and IV.F.4.b)(6), the evidence will show that a POSITA would not have been motivated to modify a device to incorporate a heating element extending transversely across the airflow passageway.

Furthermore Mr. Leinsing's statement that, "Smoke Fifty-One Duo and Wang '554 have substantially similar cartridge design. For example, both prior art pieces include a central and axial

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[redacted]

airflow passageway with a heating coil in the middle . . .” is incorrect. JX-0632C (Leinsing Opening Report) ¶ 456 n. 7. Wang 554 does not disclose a central and axial airflow passageway through a solution holding medium. *See* IV.E.4.b)(4).

(7) Red Dragon

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are rendered obvious in view of Red Dragon, Fang 044, and Wang 927.[19] The evidence will show that these assertions are false and that Respondent’s characterization of Red Dragon is flawed. *See* Sections IV.E.4.b)(7) and IV.F.4.b)(7).

Complainant anticipates that Respondent and its expert, Mr. Leinsing, will rely on what has been identified as the Red Dragon 3-Piece Kit #1 and the Red Dragon 3-Piece Kit #2 (hereinafter “Red Dragon Kits”) that include electronic cigarettes (Red Dragon E-Cig) to support its invalidity defense. As the evidence will show, in this specific context, “3-Piece” refers to a label on the product packaging describing the fact that the ***Red Dragon Kits*** were sold with (1) one or more cartomizers, (2) a power unit, and (3) a charger. The Red Dragon E-Cig itself is a two-piece e-cigarette comprising a power unit and a cartomizer as shown below.

[19] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on the combination of Red Dragon, Fang 044, and Wang 927 (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt “not to present one or more references in a combination, thus resulting in a shorter combination.” Complainant addresses these combinations in Sections IV.E.4.b)(7) and IV.F.4.b)(7), below.

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[redacted]



Red Dragon 3-Piece Kit #1 (left) (CX-2770); Red Dragon 3-Piece Kit #2 (right) (CX-2757.0175)



Red Dragon E-Cig from Red Dragon 3-Piece Kit #1 (CX-2757.0044)

Specifically, the Red Dragon E-Cig is an electronic cigarette with two parts that screw together, one part being a disposable cartridge and the second being a power unit, including a battery. An atomizer is integrated into the disposable cartridge with a batting material, making it a cartomizer. An axial heating coil is housed in the cartridge.

When an adult consumer inhales from the second end of the cartridge, the heating coil in the cartridge receives power from the battery, via the power unit's male conductor and the

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[redacted]

cartridge's female conductor. The heating coil vaporizes nicotine solution held in the batting material. Air flows into an opening on the cartridge's female conductor, mixes with the vaporized solution, and travels to another opening on the second end that releases the vaporized solution to the adult consumer.

The Red Dragon E-Cig has a similar structure and design as an 8mg Smoke Fifty-One Duo devices that Respondent relies on for its invalidity defense based on the Smoke Fifty-One Duo. Respondent's expert, Mr. Leinsing, agrees. *See* JX-0632C (Leinsing Opening Report) ¶ 472. As such, many of the reasons that the Asserted Patents are valid in view of the Smoke Fifty-One Duo are the same reasons that the Asserted Patents are valid in view of the Red Dragon. *See* Sections IV.E.4.a)(6), IV.E.4.b)(6), and IV.F.4.b)(6).

Mr. Leinsing's characterizations of Red Dragon E-Cig are incorrect to the extent such characterizations are inconsistent with Complainant's overview of the Red Dragon E-Cig and the analysis set forth below in Sections IV.E.4.b)(6) and IV.F.4.b)(6).

Complainant anticipates that Respondent and its expert will rely on certain information regarding whether and when the Red Dragon E-Cig was known or used, or on sale in the United States. *See* JX-0632C (Leinsing Opening Report) ¶¶ 464-467. In his report, Respondent's expert, Mr. Leinsing, points to a purported "date stamp" on the packaging of each of the Red Dragon Kits. *See* JX-0632C (Leinsing Opening Report) ¶¶ 464-465. According to Nicholas Evans, who appears to have founded and was the Vice President of operations for Red Dragon Products, and who submitted a declaration and was deposed in this investigation, the date stamp indicates that the blister cards (*i.e.*, the cardboard backing for the packaging) were printed on November 23, 2008. RX-1126C (03/11/2024 Evans) at 25:20-26:17. Notably, these date stamps do not represent the

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[redacted]

date any Red Dragon Kit or Red Drag E-Cig was publicly known, used, or sold in the United States.

Mr. Leinsing also identifies printouts of waybackmachine pages (JX-0604, JX-0611). JX-0632C (Leinsing Opening Report) ¶ 467. However, these pages are missing graphics (including graphics of the interior of the device) and do not clearly demonstrate what product, if any, is offered, there is no price, and there is no verification of the content and date of the pages by the Internet Archives.

Additionally, Mr. Leinsing relies on the declaration of Nick Evans (RX-1308). JX-0632C (Leinsing Opening Report) ¶ 467. Mr. Evans' declaration cites to three exhibits, none of which clearly show the Red Dragon E-Cig was on sale before the priority date of the Asserted Patents. With respect to the invoice (RX-1308.0009-0011), Respondent's expert, Mr. Leinsing, has not adequately mapped the specific Red Dragon E-Cigs he analyzes in his report to the devices purportedly sold on January 6, 2009. Exhibits 2 and 3 to the Evans declaration are the same printouts of the waybackmachine pages discussed above (RX-1308.0012-0019). Those pages are missing the waybackmachine banner, have a partial URL, are missing graphics (including graphics of the interior of the device), it is unclear what product is offered, and there is no verification of the content and date of the webpage by the Internet Archives. Therefore, Respondent will not be able to meet its burden that the Red Dragon E-Cig is prior art.

Even assuming the relied-upon Red Dragon E-Cig devices were prior art (they are not), Respondent will not be able to show that these devices invalidate the asserted claims of the Asserted Patents. Mr. Leinsing contends that, "[t]he Red Dragon E-Cig includes a central and axial airflow passageway." JX-0632C (Leinsing Opening Report) ¶ 492. As further explained below in Sections IV.E.4.b)(6) and IV.F.4.b)(6), this is incorrect. Moreover, the images below show a top

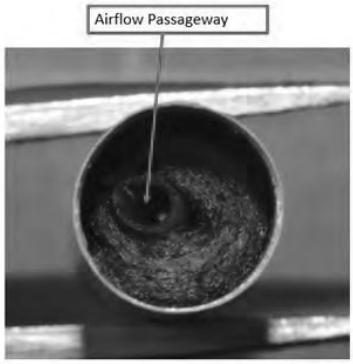
NJOY Exhibit 2007.612
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[redacted]

down view of the cartridge for the Red Dragon E-Cig device. It is apparent that the air exit hole of the device is neither central nor axial.



CX-2757.0068 (annotated)

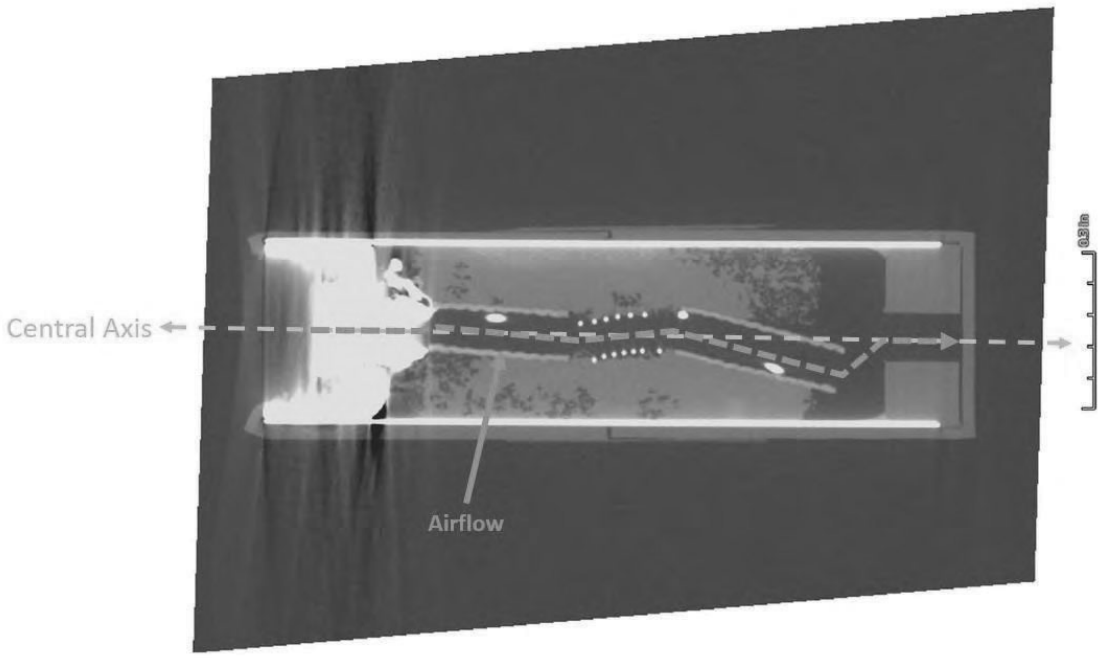


CX-2757.0062 (annotated)

As shown by the CT scan image annotated below of the Red Dragon E-Cig device, the airflow passageway is neither central nor axial.

NJOY Exhibit 2007.613
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[redacted]



CX-2757.0135 (annotated)

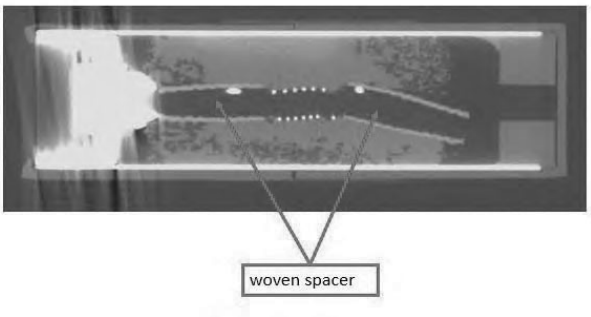
Respondent's expert, Mr. Leinsing, further states that, "[t]he Red Dragon Airflow Passageway allows air coming in from the air inlet to flow through the center of the housing in a straight line to the air exit hole." JX-0632C (Leinsing Opening Report) ¶ 492. As shown above, and as further explained below in Sections IV.E.4.b)(6) and IV.F.4.b)(6), this is incorrect.

Mr. Leinsing also contends that, "the woven spacers each have a uniform cross-section (*i.e.*, uniform diameter) across the length of each spacer, including between the heating element and the first aperture for the lower woven spacer, and between the heating element and the second aperture for the upper woven spacer." JX-0632C (Leinsing Opening Report) ¶ 493. Respondent's expert further states that "the diameter of each woven spacer is at least the same size as each of the first and second apertures." *Id.* Respondent and its expert have not demonstrated sufficient support for these statements. *See* Sections IV.E.4.b)(6) and IV.F.4.b)(6).

NJOY Exhibit 2007.614
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[redacted]

As shown by the annotated CT scan image below of the Red Dragon E-Cig device, woven spacers are not uniform and of the same size as the first and second aperture. *See* Sections IV.E.4.b)(6) and IV.F.4.b)(6).



CX-2757.0117

Furthermore, Mr. Leinsing contends that the "Red Dragon E-Cig and Wang '554 have substantially similar cartridge design. For example, both prior art pieces include a central and axial airflow passageway with a heating coil in the middle." JX-0632C (Leinsing Opening Report) ¶ 499. This is incorrect. Wang 554 does not disclose a central and axial airflow passageway through a solution holding medium. *See* Sections IV.E.4.a)(2), IV.E.4.b)(2), IV.F.4.b)(2). Additionally, as set forth above, the Red Dragon E-Cig does not have a central airflow path. Furthermore, as set forth below in Sections IV.E.4.b)(6) and IV.F.4.b)(6), Respondent's expert does not provide any explanation or specific opinion as to why a POSITA would have been motivated to modify the Red Dragon E-Cig to incorporate an airflow passageway that extends centrally and axially with respect to the housing.

Mr. Leinsing also contends that the Red Dragon E-Cig comprises a transverse heating element, that it would have been obvious to modify the Red Dragon E-Cig to include a transverse heating element, and that the Red Dragon E-Cig discloses or renders obvious airflow that passes on both transverse sides of the heating element. *See, e.g.*, JX-0632C (Leinsing Opening Report)

NJOY Exhibit 2007.615
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[redacted]

¶¶ 499-505. This is incorrect, at least for the reasons provided below in IV.E.4.b)(6) and IV.F.4.b)(6).

(8) Cigarette Electronique

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are anticipated by Cigarette Electronique and rendered obvious in view of Cigarette Electronique, Wang 554, and Fang 044.[20] The evidence will show that these assertions are false and that Respondent's characterization of Cigarette Electronique is flawed. *See* Sections IV.E.4.b)(8) and IV.F.4.b)(8).

Respondent and its expert, Mr. Leinsing, contend that the Cigarette Electronique device qualifies as prior art and was sold or offered for sale in in the United States at least as early as June 30, 2009. JX-0639C (Leinsing Opening Report, Appx. F) ¶ 2. But Respondent will not be able to establish that the specific Cigarette Electronique device relied upon, or a Cigarette Electronique having the same design, is in fact prior art.

To support his contention that the Cigarette Electronique is prior art, Respondent's expert, Mr. Leinsing, relies on a declaration from Philip Busardo (RX-0096) ("Busardo Declaration") who provides testimony regarding his recollection of his inspection of a product allegedly purchased in 2009. Exhibit 1 to Mr. Busardo's declaration is a printout of a waybackmachine webpage from ryanddirect.com that is allegedly from June 24, 2009. That page is missing the waybackmachine banner, missing graphics (including of the interior of the device), has an incomplete URL, does

[20] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on Cigarette Electronique (§102) and the combination of Cigarette Electronique, Wang 554, and Fang 044 (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(8) and IV.F.4.b)(8), below.

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not reference a product called Cigarette Electronique, and there is no verification of the content and date of the page by the Internet Archives. *Id.* at .0008-.0011.

Mr. Busardo states in his declaration that he "purchased ***and received*** a couple different e-cigarettes before June 30, 2009 at my home in Rochester, NY, including the Cigarette Electronique e-cigarette pack," and the "Cigarette Electronique e-cigarette pack counsel for JLI brought for my inspection is identical to the Cigarette Electronique e-cigarette pack I purchased ***and received by June 30, 2009***," which is fifteen years ago. RX-0096.0002-0003 (emphasis added). Exhibit 2 to the Busardo Declaration is purportedly a website printout from www.e-cigarette-forum.com that includes forum post by "pbusardo" on June 30, 2009, which states "I have a couple of different E-cigs on order." RX-0096.0013. There is no information regarding where the "E-cigs" were purchased or purchase from, what was purchased, who shipped the product, if it was received, when it was received, or the design/components of the e-cigarettes (including the internal design). User "pbusardo" did not even apparently know what product he allegedly ordered, and asked "Does anyone know the make or model of these in the pics?" *Id.* Mr. Busardo has not provided an invoice or other material regarding his alleged purchase of a Cigarette Electronique device. Mr. Busardo was also unable to confirm the website in his declaration was the one he used to purchase a Cigarette Electronique or that the photos of the products in his declaration were the specific devices he purchased. RX-1129C (03/08/2024 Busardo) at 51:24-54:1, 61:16-63:17, 65:17-66:3.

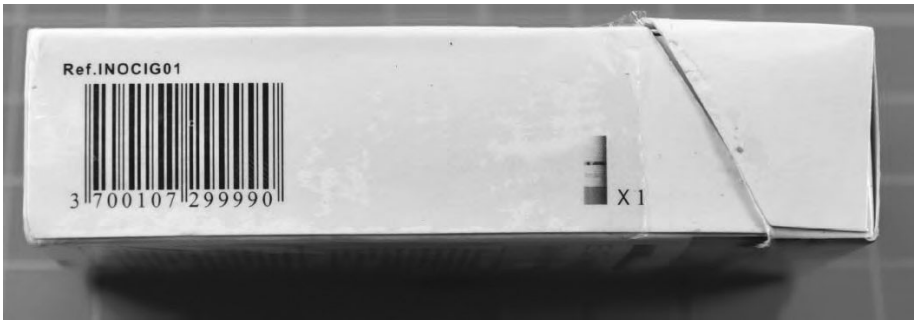
The device that Respondent and Mr. Leinsing will rely upon at the hearing was obtained by Nick Evans. RX-1308 (Evans Declaration). Mr. Evans' uncorroborated testimony regarding the Cigarette Electronique indicates that he purchased one in 2010, after the priority date of the Asserted Patents, and sent an unsealed version of that product to Respondent. Mr. Evans did not provide an invoice or other material regarding his purchase of the Cigarette Electronique. Mr.

NJOY Exhibit 2007.617
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[redacted]

Evans' declaration will not be able to establish that the Cigarette Electronique relied on by Respondent and Mr. Leinsing, or a Cigarette Electronique having the same design, was in use, offered for sale or sold before the priority date of the Asserted Patents.

Moreover, the packaging of the Cigarette Electronique that Respondent and Mr. Leinsing will rely on includes bar code number 3700107299990 and "REF.INOCIG01" on the side of the box.



CX-2756.0012

As the evidence will show, a search on Google for "370010729990" resulted in four total hits, two of which related to an electronic cigarettes. CX-2797 is a screen capture of one of those e-cigarette results, and shows a device called "eGo T-TM Red" for sale in France:

2x origin. eGo T-TM RED inkl umfangreichem Zubehör / Double Ego-T, 650mAh

PREIS	38.17 USD
EAN/UPC/ISBN Code	3700107299990
Marke	e-smoker-heaven (/ven...
Land	France



(/photo/53505a0e59eceaf55b00c8ca.jpg)



(/photo/53505a0e59eceaf55b00c8cc.jpg)

CX-2797

NJOY Exhibit 2007.618
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[redacted]

CX-2801 is a screen capture of the other e-cigarette result, and purports to show a version of the Cigarette Electronique for sale from a Slovakian website. Notably, the purported date this device was posted for sale is December 2010.



CX-2801.0001



CX-2801.0001



CX-2801.0002

Evening assuming a version of the Cigarette Electronique was sold on or before June 30, 2009, Respondent has not shown, and will not be able to show, any evidence demonstrating that the design of Cigarette Electronique did not change over time. However, the evidence will show

NJOY Exhibit 2007.619
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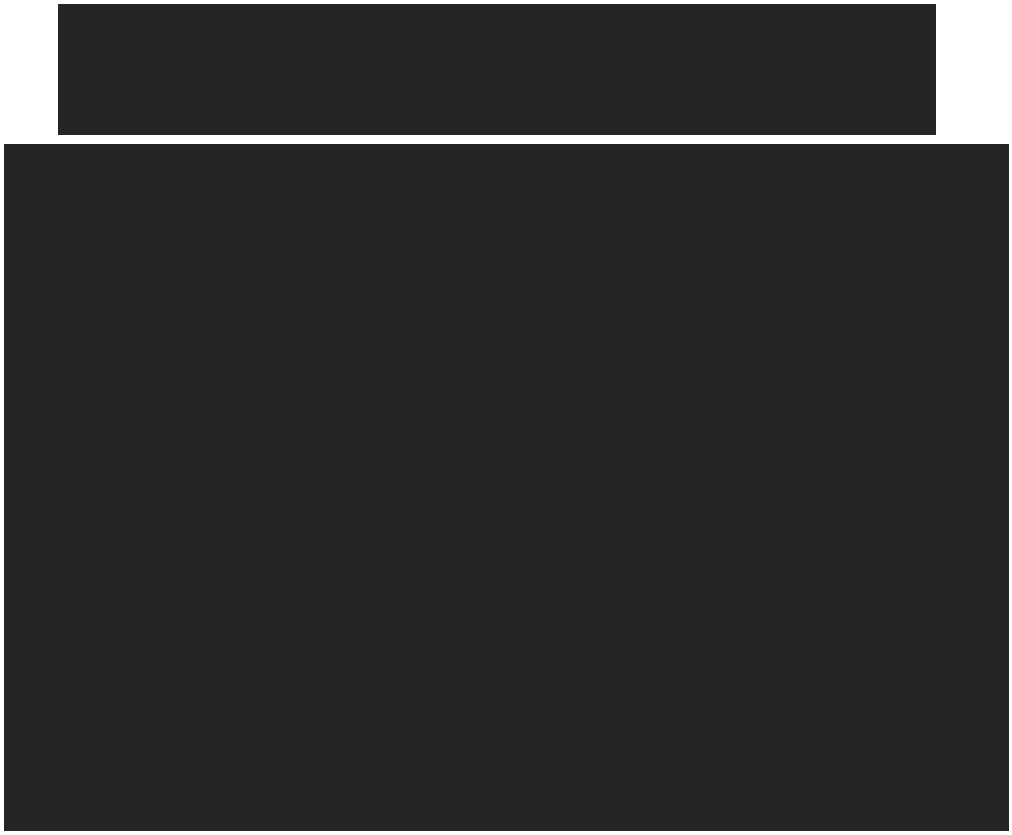
[redacted]

that it was not uncommon for cartridges to change design without a change to the name, labeling, or packaging of the cartridges. [redacted] *See, e.g.*, JX-0620C. In fact, even though the internal structure of the cartridge changed between the 3rd and 4th generation cartridge, the cartridges continued to be sold in ***the same*** external packaging and the cartridges appeared nearly identical from the outside.


[redacted]

JX-0620C.0003

NJOY Exhibit 2007.620
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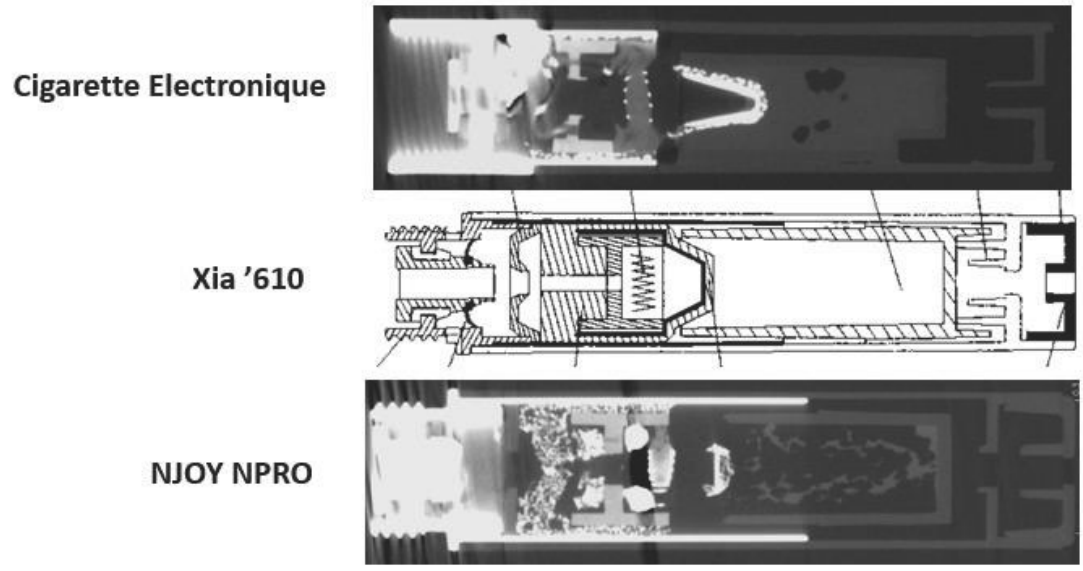
JX-0620C.0004

Thus, Respondent will not be able to show that the Cigarette Electronique relied upon, or a Cigarette Electronique having the same design, is prior art to the Asserted Patents.

The Cigarette Electronique is a three-piece e-cigarette, which, as depicted below, has a similar structure and design as the NJOY NPRO and Xia 610:

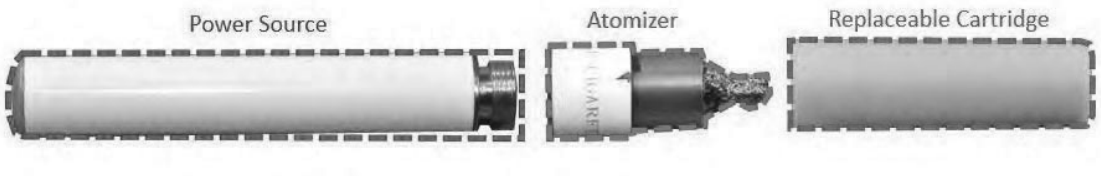
NJOY Exhibit 2007.621
Juul v. NJOY
IPR2024-00160

[redacted]



CX-2756.0125; RX-0026 (Xia 610) at Fig. 2; CX-2760.0131

Respondent's expert, Mr. Leinsing, contends that "[t]he Cigarette Electronique device discloses the use of a cartridge configuration" that includes a "cartridge section" that includes "a removable component called an atomizer" and "a portion of the cartridge section that includes the solution holding medium." JX-0632C (Leinsing Opening Report) ¶¶ 516-518. The three components of the Cigarette Electronique device are pictured below.



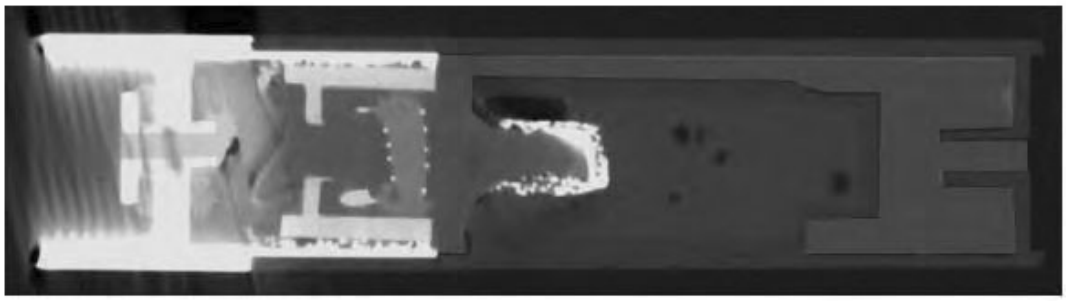
CX-2756.0047, 0061

Respondent's expert's, Mr. Leinsing's, characterizations of Cigarette Electronique are incorrect to the extent such characterizations are inconsistent with Complainant's overview of Cigarette Electronique and analysis set forth below in Sections IV.E.4.b)(8) and IV.F.4.b)(8).

NJOY Exhibit 2007.622
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[redacted]

Respondent's expert, Mr. Leinsing, contends that the Cigarette Electronique device includes an airflow passageway that is defined by the entire interior of the "cartridge section." When the atomizer and replaceable cartridge parts are assembled, this structure annotated below in blue, and not the entire interior of the assembly, would more closely resemble the airflow passageway.



CX-2756.0128(annotated)

(9) NPRO/NCIG

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are anticipated by NJOY NPRO/NCIG and rendered obvious in view of NJOY NPRO/NCIG, Wang 554, Fang 044, and Wang 927.[21] The evidence will show that these assertions are false and that Respondent's characterization of NJOY NPRO/NCIG is flawed. *See* Sections IV.E.4.b)(9) and IV.F.4.b)(9).

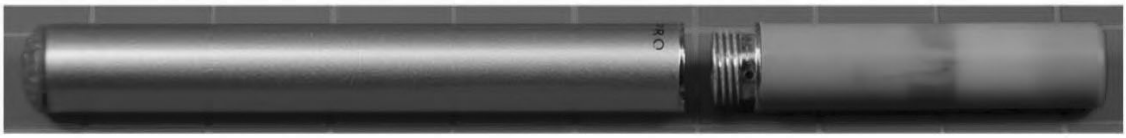
Respondent and its expert, Mr. Leinsing, contend "[t]he NPRO E-Cig is an e-cigarette including a cartridge … and a power source …." JX-0632C (Leinsing Opening Report) ¶ 553. Mr.

[21] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on NJOY NPRO/NCIG (§102) and the combination of NJOY NPRO/NCIG, Wang 554, Fang 044, and Wang 927 (§103). Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(9) and IV.F.4.b)(9), below.

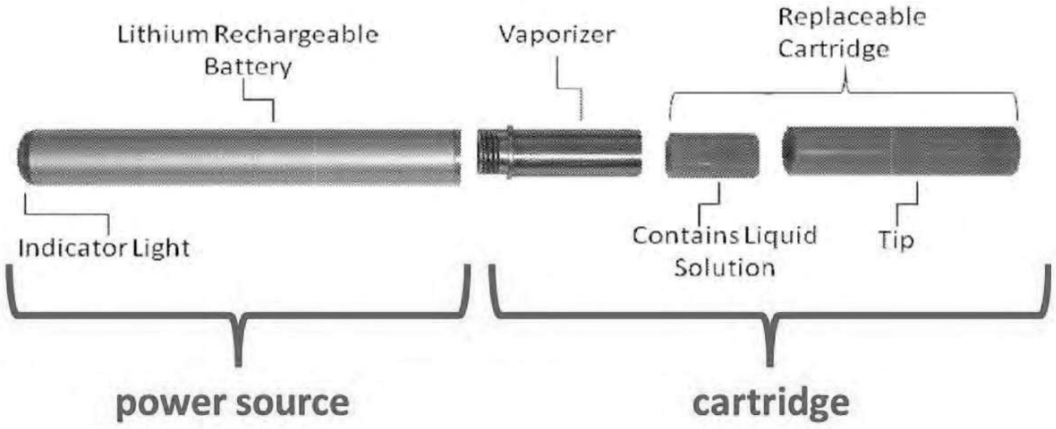
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[redacted]

Leinsing contends the NPRO includes a "cartridge that further includes the vaporizer (also known as atomizer) and a 'Replaceable Cartridge,' which further includes a structure that contains liquid solution and a tip." JX-0632C (Leinsing Opening Report) ¶ 557. Mr. Leinsing includes the annotated photo and annotated figure below as allegedly showing the "cartridge" of the NPRO.



JX-0632C (Leinsing Opening Report) ¶ 554 (citing CX-2768.0001)



JX-0632C (Leinsing Opening Report) ¶ 554 (JX-0482C.0004 (annotated in red))

The evidence will show that the NPRO does not include a "cartomizer" and instead is a three-piece device that includes the power source, vaporizer, and replaceable cartridge, as Mr. Leinsing acknowledges. The three components of the NPRO are pictured below.

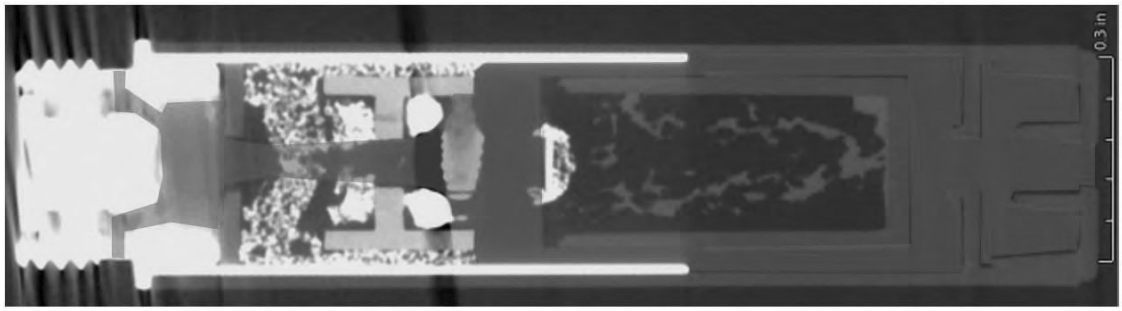


CX-2768.0001, .0003 (annotated)

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[redacted]

Respondent and its expert, Mr. Leinsing, further contend that the NPRO device includes an airflow passageway that is defined by the entire interior of the "cartridge section." However, as the evidence will show, when the atomizer and replaceable cartridge parts are assembled, this structure annotated below in blue, and not the entire interior of the assembly, would more closely resemble the airflow passageway.



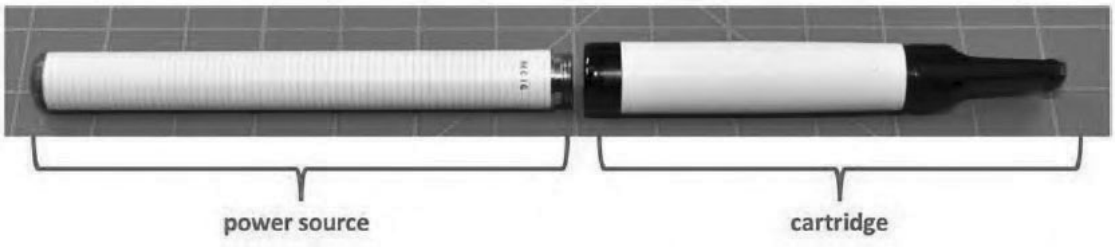
JX-0404.0024 (annotated)

Mr. Leinsing contends that "[b]ased on my review of the NPRO E-Cig and the NCIG E-Cig, the two devices are substantially similar to each other. My analysis on the NPRO E-Cig applies to the NCIG E-Cig and vice-versa." JX-0632C (Leinsing Opening Report) ¶ 553. While Complainant separately addresses the NJOY NPRO and NCIG for certain limitations below in Sections IV.E.4.b)(9) and IV.F.E.4.b)(9) below, Complainant's analysis with respect to NPRO applies to the NCIG and vice-versa.

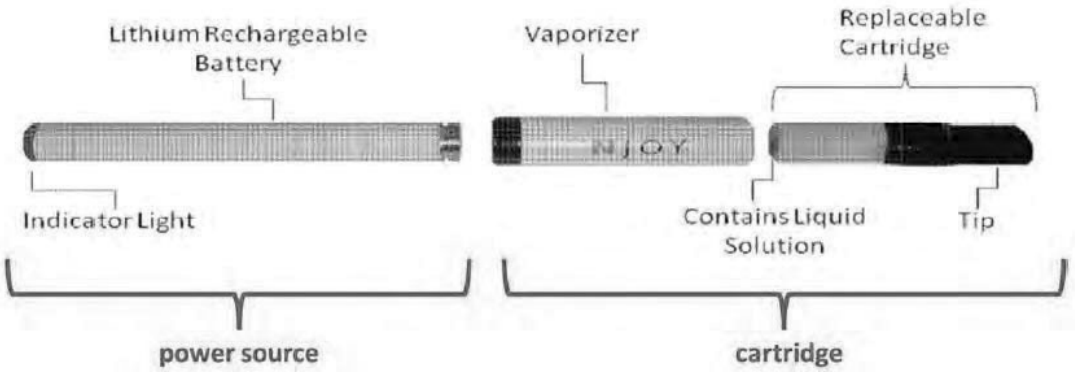
Mr. Leinsing contends "[t]he NCIG E-Cig is an e-cigarette including a cartridge portion and a power source portion." JX-0632C (Leinsing Opening Report) ¶ 589. Mr. Leinsing includes the annotated photo and annotated figure below as allegedly showing the "cartridge" of the NCIG:

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[redacted]

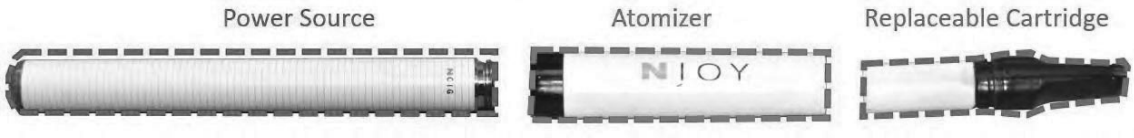


JX-0632C (Leinsing Opening Report) ¶ 589 (citing CX-2764 (annotated in red))



JX-0632C (Leinsing Opening Report) ¶ 589 (citing JX-0482C.0003 (annotated in red))

The evidence will show that the NPRO does not include a "cartomizer" and instead is a three-piece device that includes the power source, vaporizer, and replaceable cartridge, as Mr. Leinsing acknowledges. The three components of the NPRO are pictured below.



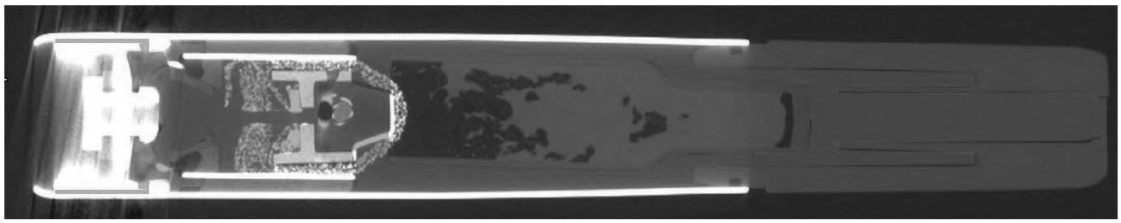
CX-2764; CX-2765 (annotated)

Respondent and its expert, Mr. Leinsing, contend that the NPRO device includes an airflow passageway that is defined by the entire interior of the "cartridge section." However, as the evidence will show, when the atomizer and replaceable cartridge parts are assembled, this structure

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[redacted]

annotated below in blue, and not the entire interior of the assembly, would more closely resemble the airflow passageway.



JX-0402.0008 (annotated)

(10) NPRO Style

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are rendered obvious in view of Wang 927, Wang 554, and NJOY NPRO Style. Complainant also anticipates that Respondent and its expert will contend that the Asserted Claims are rendered obvious in view of Han 364, Fang 044, Smoke Fifty-One Duo, Red Dragon, and NJOY NPRO Style.[22] The evidence will show that these assertions are false and that Respondent's characterization of NJOY NPRO Style is flawed. *See* Sections IV.E.4.b)(4), IV.F.4.b)(4), IV.E.4.b)(5), and IV.F.4.b)(5).

As the evidence will show, and as will be demonstrated at the hearing, the NJOY NPRO Style is not prior art, and Respondent will not be able to demonstrate otherwise.

The packaging of the NJOY NPRO Style relied upon in this investigation is shown below.

[22] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on the combination of Wang 927, Wang 554, and NJOY NPRO Style (§103) and the combination of Han 364, Fang 044, Smoke Fifty-One Duo, Red Dragon, and NJOY NPRO Style. Based on an earlier email to just the parties on April 26, 2024, Complainant understands that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination." Complainant addresses these combinations in Sections IV.E.4.b)(4), IV.F.4.b)(4), IV.E.4.b)(5), and IV.F.4.b)(5), below.

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JX-0632C (Leinsing Opening Report) ¶ 636 (citing CX-2769)

As Respondent's expert, Mr. Leinsing, acknowledges, the NPRO Style he inspected and relies on is the version with "2N1" cartridges. JX-0632C (Leinsing Opening Report) ¶ 638 ("The NPRO Style starter kit includes: (1) two rechargeable battery portions, (2) one battery charger, (3) ***a bottle of ten "2N1 Cartridges,"*** (4) one user's guide, and (5) one contact info sheet.").



CX-2767 (annotated)

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[redacted]

Mr. Leinsing contends that "NJOY's NPRO Style starter kit, including the NJOY NPRO Style e-cigarette (hereinafter, the 'NPRO Style'), was sold in the United States by no later than August 28, 2008." JX-0632C (Leinsing Opening Report) ¶ 636.

Contrary to Mr. Leinsing's contentions, the evidence will show that the NPRO Style with 2N1 cartridges, which is the device Mr. Leinsing relies on, was not available until approximately July 6, 2010. For example, the product availability chart that Mr. Leinsing relies on (JX-0619C) lists July 6, 2010 as the "approximate" date of availability for the NPRO Style with 2N1 Cartridges.



JX-0618C (highlighted)

While there is an "NPRO Style Starter Kit" listed on the product availability chart above with an approximate date of availability of August 28, 2008, that particular product corresponds to the original NPRO ***without*** the 2N1 cartridges. This non-2N1 NPRO was a three-piece design.

July 6, 2010 is the approximate availability date for the NPRO Style with 2N1 Cartridges, as asserted in Complainant's interrogatory responses. RX-1224C.0008.

NJOY NPRO STYLE with 2N1 Cartridges	Weil, DC (sample sent to Mintz, Boston)	Approximately available July 6, 2010

(11) The Fuma E-Cigarette

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[redacted]

Complainant anticipates that Respondent and its expert will contend that the Asserted Claims are anticipated by the Fuma prototype and rendered obvious in view of the Fuma prototype.[23]

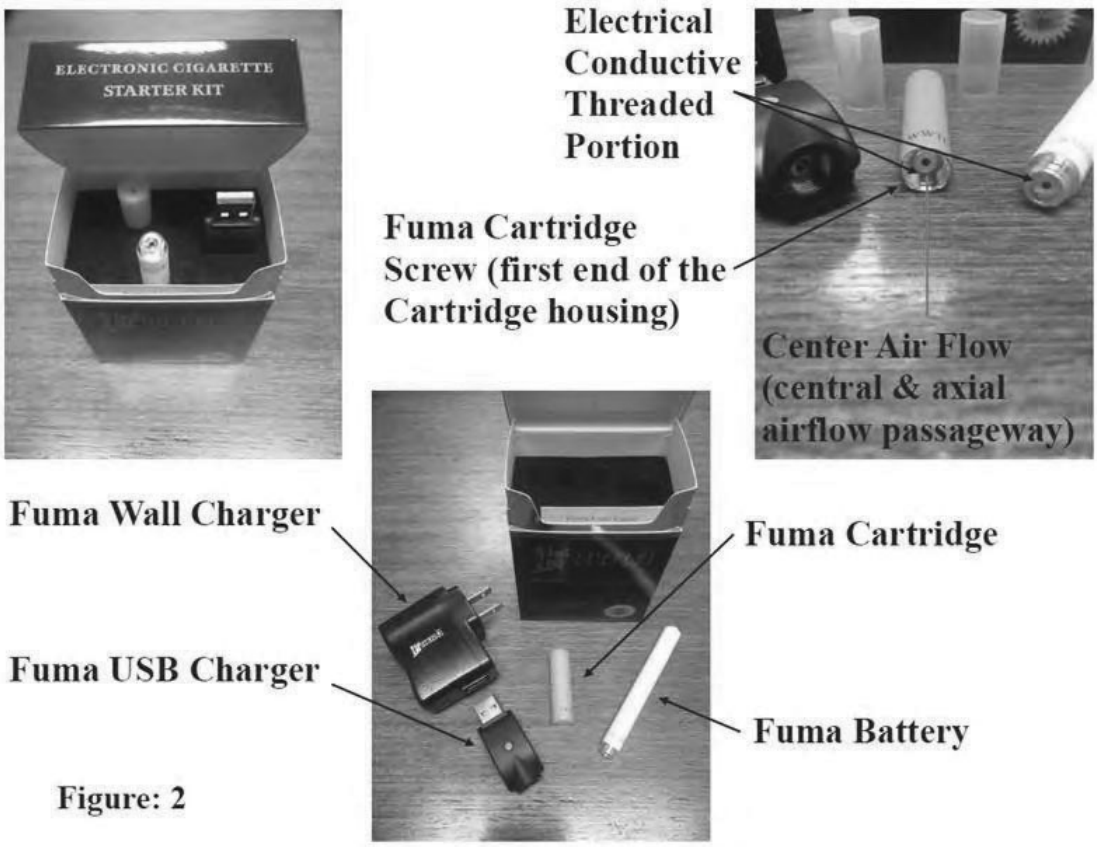
As set forth above, and as will be demonstrated at the hearing, Greg Conley and Dan Hillenbrandt, conceived of the asserted claims of the Asserted Patents by July 28, 2009 and reduced to practice the asserted claims of the Asserted Patents by August 12, 2009 when Greg Conley demonstrated prototypes of the claimed invention at the Tri-State Tobacco and Candy Convention and by no later than when the first commercial production run of the Fuma E-cigarette was available or sold in the United States in 2009. *See* Section IV.C. The evidence, including at least the testimony evidence, the Conception Sketch, the Tolerance Drawings, the first commercial run Fuma E-Cigarette, and the 131 Declarations, will establish these facts.

Exemplary photographs of the first commercial run Fuma E-Cigarette are shown below. These images are excerpted from one of the 1.131 Declarations submitted by Mr. Conley during the prosecution of the Asserted Patents.

[23] In an April 26, 2024 email to the ALJ and the parties, Respondent indicated that it will rely on the Fuma prototype (§102) and the Fuma prototype (§103).

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[redacted]



JX-0543.0015

Respondent's expert, Mr. Leinsing, contends that "[i]n the event the Asserted Claims would not be entitled to any conception and/or reduction to practice date until August 25, 2012, I understand that the Fuma Prototype would be a prior art system under 35 U.S.C. § 102(b) because it was in public use and on sale in the U.S. more than one year prior to August 25, 2012." JX-0632C (Leinsing Opening Report) ¶ 613. To support this contention, Mr. Leinsing cites to numerous disclosures in NJOY's Thirteenth Supplemental Responses and Objections to JLI's First Set of Rogs ("NJOY's 13th Supp. ROG Responses"). For example, Mr. Leinsing cites to page 7 as "contending that Mr. Conley 'provide[d] appropriate instructions to the fabricators in China' before 'July 28, 2009 when they [Mr. Conley and Mr. Hillenbrandt] were instructed by their

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[redacted]

supplier to pay for prototypes'" and pages 7-8 as "contending that the Fuma Prototypes were delivered to the U.S. before August 12, 2009." JX-0632C (Leinsing Opening Report) ¶ 613. To the extent that Mr. Leinsing intended to opine that the Fuma prototype qualifies as prior art before or as early as July 2009, Mr. Leinsing has not explained how or why that is the case. Any disclosures regarding any such Fuma device were confidential prior to the Tri-State Tobacco and Candy Convention in August 2009. *See, e.g.*, JX-0548 (12/04/2019 Conley) at 104:15-23. Respondent will not be able to demonstrate that any Fuma device embodying the claimed inventions of the Asserted Patents was publicly known, used in this country, on-sale, offered for sale, and ready for patenting before or as early as July 2009.

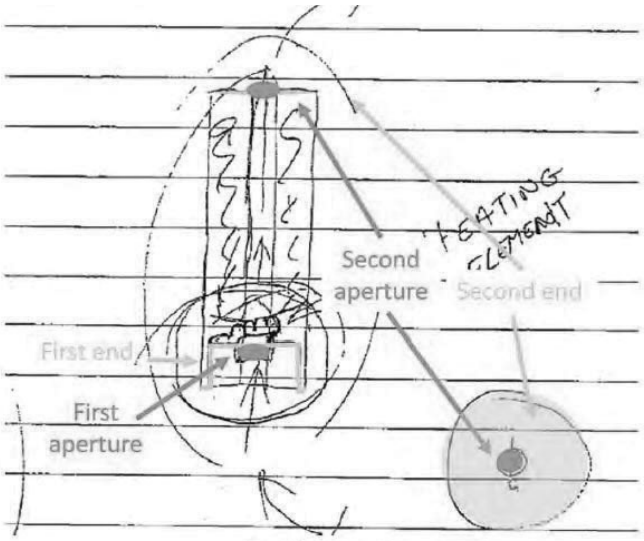
Respondent's expert, Mr. Leinsing, opines that "the Asserted Claims are disclosed by the Fuma Prototype under NJOY's proposed constructions and interpretations, to the extent the Asserted Claims would not be entitled to any conception and/or reduction to practice date until August 25, 2012." JX-0641C (Leinsing Opening Report, Appx H) ¶ 2. For the same reasons that Mr. Leinsing opines that the asserted claims are disclosed by the Fuma Prototype, the inventors reduced to practice all of the claims of the Asserted Patents by August 12, 2009 when Greg Conley demonstrated prototypes of the claimed invention at the Tri-State Tobacco and Candy Convention and by no later than when the first commercial production run of the Fuma E-cigarette was available or sold in the United States under Complainant's proposed constructions. *See also* Section IV.C (explaining how the Fuma E-Cigarette practices all of the asserted claims of the 881 and 864 Patent).

In his report, Respondent's expert, Mr. Leinsing, repeatedly cites to NJOY's 13th Supp. ROG Responses, including attachments thereto. However, NJOY's Fifteenth Supplemental Responses and Objections to Respondent's First Set of Interrogatories ("NJOY's 15th Supp. ROG

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Responses") includes additional information, as well as updated versions of Attachments A and B (priority claim charts for the Asserted Patents). For example, Mr. Leinsing relies on an annotated figure from Attachment B to NJOY's 13th Supp. ROG Responses (881 Priority Chart). *See* JX-0632C (Leinsing Opening Report) ¶ 626. This figure, however, was updated in NJOY's 15th Supp. ROG Responses, as shown below. There are other examples of figures from NJOY's 13th Supp. ROG Responses that Mr. Leinsing cites, despite the fact that those figures were updated in NJOY's 15th Supp. ROG Responses. Nonetheless, the asserted claims of the Asserted Patents are practiced by the Fuma Prototype.



Attachment C

RX-1388C.0193

b) The Claims at Issue Are Not Anticipated Under Pre-AIA 35 U.S.C. § 102 or Rendered Obvious Under Pre-AIA 35 U.S.C. § 103

(1) The Xia 610 Grounds Do Not Anticipate or Render Obvious the Claims at Issue

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Complainant anticipates that Respondent will argue that claims 1, 16, 18, 19, and 26 of the 881 Patent are invalid under 35 U.S.C. §§ 102, 103 based on the Xia 610 reference. Specifically, Respondent argues the following grounds ("the Xia 610 Grounds"):[24]

1) Xia 610 (§102);
2) Xia 610 (§103);
3) Xia 610 in combination with Wang 554 (§103);
4) Xia 610 in combination with Fang 044 (§103);
5) Xia 610 in combination with Smoke Fifty-One Duo (§103);
6) Xia 610 in combination with Wang 554 and Fang 044 (§103);
7) Xia 610 in combination with Wang 554 and Smoke Fifty-One Duo (§103);
8) Xia 610 in combination with Fang 044 and Smoke Fifty-One Duo (§103);
9) Xia 610 in combination with Wang 554, Fang 044, Smoke Fifty-One Duo (§103).

As set forth herein, and as will be demonstrated at the hearing through at least documents, testimony from Complainant's expert Dr. Vallee, demonstrative exhibits and cross-examination, Respondent will be unable to show by clear and convincing evidence that claims 1, 16, 18, 19, and 26 of the 881 Patent are invalid based on these grounds.

(a) A POSITA Would Not Have Modified Xia 610 as Respondent Proposes

As set forth herein, and as will be shown at the hearing, a POSITA would not have been motivated to modify Xia 610 or motivated to combine, in the manner proposed by Respondent's expert Mr. Leinsing, (1) Xia 610 and Wang 554; (2) Xia 610 and Fang 044; (3) Xia 610 and Smoke

[24] In an April 26, 2024 email to ALJ and the parties, Respondent indicated that it will rely on Xia 610 (§ 102) and the combination of Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo (§ 103). Based on an earlier email to just the parties on April 26, 2024, Complainant understand that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination."

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[redacted]

Fifty-One Duo; (4) Xia 610, Wang 554, and Fang 044; (5) Xia 610, Wang 554, and Smoke Fifty-One Duo; (6) Xia 610, Fang 044, and Smoke Fifty-One Duo; and (7) Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo. There is no evidence of any apparent reason why a POSITA in the 2009-2010 timeframe would have been motivated to make modifications in the specific manner proposed. *See also* Section IV.E.4.a)(1), above.

To support these combinations, Respondent, through its expert Mr. Leinsing, argues that Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo use similar structures to achieve the same endeavor, relying on cylindrical, cigarette-like structures, and also contends that all of these references being published around the same time and all from Chinese inventors. JX-0633C (Leinsing Opening Report, Appx. A) ¶¶ 5 - 8. Although these pieces of prior art relate to electronic cigarettes or vaporizers, these devices do not use similar internal components as relevant to the challenged claims. The evidence will show also that a POSITA would not have been motivated to combine the teachings of the cited references merely because of the references being directed to the same endeavor or being released at similar times as it is common to have countervailing teachings in contemporaneous references in a given field. Rather, the relevant test is whether the teachings of these specific references would have motivated a POSITA under the *KSR* factors to make the modifications proposed. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 4.

Respondent's expert, Mr. Leinsing, proposes modifying Wang 554 in view of Xia 610, and Fang 044, and Smoke Fifty-One Duo (or a subset thereof) "as they are each also directed to the same endeavor." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 5. The evidence will show that a POSITA would have understood that although electronic cigarettes as a class of devices are all directed to providing an alternative to traditional smoking, the methods employed in electronic cigarettes can vary greatly from one device to another. *See* CX-2728 (Vallee Rebuttal Report,

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[redacted]

Appx. A-1) ¶ 5. Furthermore, the evidence will show that a POSITA would not have looked at another electronic cigarette device for inspiration simply because it was an electronic cigarette device. *Id.* For example, an electronic cigarette device using a combustion heating mechanism would differ greatly in design from an electronic cigarette using a resistive heating element. Similarly, an electronic cigarette having a solid fuel would unlikely have a compatible design with an electronic cigarette having a liquid fuel.

Instead, the evidence will show that a POSITA would look for inspiration from another electronic cigarette device if that device were tackling a specific problem in a similar compatible way. For example, if prior art devices used similar puff detection sensors, a POSITA might have been motivated to use the puff sensor from one device in another device. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 6. Respondent and its expert are effectively arguing that a POSITA would have been motivated to combine references on the basis that the references are analogous art. But references being analogous art is not the standard for obviousness.

Respondent and its expert further suggest that it would have been obvious to combine the references because:

> they are all use [sic] a similar device and structure to achieve the desired goals. For example, each is directed to the design and operation of handheld, cylindrical, cigarette-like, electronic cigarettes that use a heating coil within a device, powered by a battery, to vaporize liquid held within the device.

JX-0633C (Leinsing Opening Report, Appx. A) ¶ 6. However, as explained above, these devices accomplish their respective functions using greatly different designs. Indeed, several of these references are patents that have their own inventive aspects that a patent office deemed were non-obvious. This includes how the arrangement of the internal structures of the devices, the electrical designs, and the specific actuation mechanisms among other issues.

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Respondent's expert Mr. Leinsing argues that "none of [the references] describes any of their components as specifically designed or uniquely applicable to a particular e-cigarette design." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 7. However, as previously noted, many of these references are patents, with claims issued by a patent office as ostensibly novel and distinguishable over the prior art. None of the features that Respondent's expert Mr. Leinsing borrows from these references to make the proposed combinations is described as commonplace in the art. For example, Fang 044 does not describe the orientation of its heating element as commonplace and interchangeable with differently oriented heating elements. Moreover, Respondent's expert states that the components in these devices are "off the shelf" and "without the need for experimentation" yet provides no evidence that this is true. JX-0632C (Leinsing Opening Report) ¶ 324. However, a claim is not precluded patentability for including off-the-shelf components. The arrangement of the components may make the claim patentable.

Respondent's expert Mr. Leinsing argues that Xia 610, Wang 554, and Fang 044 "were also published within the same eleven-month period and from Chinese inventors[]" to argue that a POSITA would have had a higher chance of locating these references. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 8. None of these factors has any relevance. Many applications were published within this same eleven-month period and many applications were also from Chinese inventors.

Respondent's expert further suggests that any elements from these references could be used in any of the other references because it would be a "substitution of known elements." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 8. However, the evidence will show that this view is incorrect because it disregards how dissimilar the described devices are among these references.

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Respondent's expert further argues that the differences in the prior art references are "merely as [] different approaches" and therefore could be easily subbed in. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 10. As will be demonstrated at the hearing, this argument ignores that the references include very specific features for the specific purpose of addressing and solving problems with the respective devices. Respondent's expert's proposal to remove these features further compounds the very issues that these features are intended to address. Xia 610 includes several features, distributed at multiple points in its device, to combat excessive liquid in the vapor. The evidence will show that if Respondent's modifications were adopted, the resulting device will be non-functional for its intended purposes. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 11.

Respondent and its expert argue that the differing approaches taken by the prior art do not render them incompatible. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 10-13. The evidence will show this argument to be flawed because it fails to consider each device as a whole and the import of removing and replacing such features. For example, Xia 610 clearly discloses that liquid is drawn into the airstream due to the suction force of the adult consumer. JX-0596 (Xia 610) at .0013 ("[the liquid guiding mechanism's] working process is as follows: under the action of airflow, small droplets are sucked into the other side of the heat insulation seat 902 through the spray hole 904 in the heat insulation seat 902."). This is completely at odds with the mechanism of Wang 554, which requires the heating coil to be in direct contact with the liquid storage medium. RX-0027 (Wang 554) at .0008 ("The interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it"). The evidence will show that a POSITA would not have considered adapting Wang 554's features for inclusion in Xia

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610 and vice versa because any such adaptation would require a complete, and fundamental, redesign of the respective devices. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 12.

Respondent's expert, Mr. Leinsing, contends that "it would have been obvious to modify Xia '610 alone, in view of Wang '554, in view of Fang '044, and in view of Smoke Fifty-One Duo to move Xia '610's central aperture that is annotated in the above figures to the left of the cartridge, such that it is located at the end" and also states that "[t]his is how the first aperture is arranged in Wang '554 and in Fang '044 and in Smoke Fifty-One Duo." JX-0632C (Leinsing Opening Report) ¶¶ 230-231. However, none of Wang 554, Fang 044, or Smoke Fifty-One Duo teaches an air inlet in the connector portions of the device. Wang 554 includes an air inlet 115 on the opposite end of the cigarette rod shell, and, as discussed in more detail below, Fang 044 is a unitary device that lacks a disclosure of an air inlet altogether. The evidence will show that a POSITA would not have been motivated to make the modification of moving Xia 610's air inlets 702 to the controller portion (and extending through a hole in the center of the connection between the cartridge and the controller) as proposed by Respondent. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-3) ¶ 13.

Furthermore, the evidence will show that a POSITA would not have been motivated to make the proposed modification because it would not be beneficial to consumers. The original Xia 610 design includes air inlets on the generator. On the other hand, in the proposed modification, the air inlets are located in the power source part, the part that is re-used by the consumer for many use cycles. The evidence will show that POSITA would understand that with normal use, dirt, dust, and other environmental contaminants would accumulate in the modified inlets, decreasing the air intake efficiency of the device and potentially exposing the adult consumer to inhaling unwanted contaminants. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 14.

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As the evidence will show, a POSITA would not have been motivated to modify a three-piece e-cigarette (comprising a power source, atomizer, and liquid storage cartridge) to create a two-piece e-cigarette (comprising a power source and a cartomizer, which includes an atomizer and liquid storage in the cartridge). Moreover, the evidence will show that a POSITA would not have had a reasonable expectation of success in making that modification. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 15.

The predominant designs at the time of the invention of the Asserted Patents were "non-cartomizer" designs, where the atomizer was a separate reusable part and not disposed of along with the liquid storage cartridge. The ability to reuse the atomizer part prevented waste and kept costs low as the atomizer did not need to be discarded every time e-liquid became depleted. *See generally* JX-0595 (Fang 044), JX-0544 (Han 311). It was also known that cartomizer designs had other flaws besides cost and waste. The atomizer within the cartridge would often burn the absorbent material holding e-liquid, leaving an unwelcome waste. *See, e.g.*, CX-1377 (2/29/2024 G. Conley Dep. Tr.) at 75:12-21 (describing disadvantages of the Smoke Fifty-One Duo, a two-piece design), 86:5-15; JX-0631 (Han 364) at [0017] ("[I]n the current filament heating atomizer method, the organic substances contained in the liquid are inevitably burned, and the carbon residue is adsorbed into the filament and accumulates on the filling fiber (5), resulting in a burnt smell and the function of the atomizer deteriorates as it is used"); *see also* CX-1377 (2/29/2024 G. Conley Dep. Tr.) at 99:8-100:3 (describing difficulty inhaling from the device and excess liquid drop during inhale).

As the evidence will show, the Asserted Patents' inventions overcame the perceived limitations of cartomizer designs and revolutionized the accepted wisdom that cartomizers were too expensive and not desirable by producing a cartomizer that was more desirable than systems

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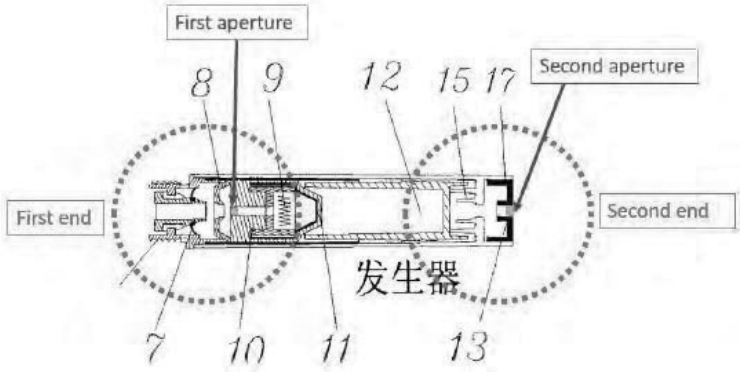
with only a disposable liquid storage element. The evidence will show also that regardless of the availability of two- and three-piece e-cigarettes, that availability is not sufficient to establish a motivation to modify a three-piece e-cigarette to create a two-piece e-cigarette or to establish a reasonable expectation of success.

(b) The Xia 610 Grounds Do Not Anticipate Or Render Obvious Claim 1

(i) Xia 610 Does Not Disclose Claim Limitation 1e

Claim limitation 1e of the 881 Patent recites "the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end."

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses a housing including a first aperture on the first end and a second aperture on the second end. Respondent's expert, Mr. Leinsing, contends that "Xia '610 illustrates the 'generator' portion as including first and second ends, and first and second apertures", relying on the following annotated version of Xia 610's Figure 2. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 74.



JX-0633C (Leinsing Opening Report, Appx. A) ¶ 74

Respondent and its expert also argue that the "identified 'first end' and 'second end' in the above annotated image are located opposite each other, and each contains an aperture" and that

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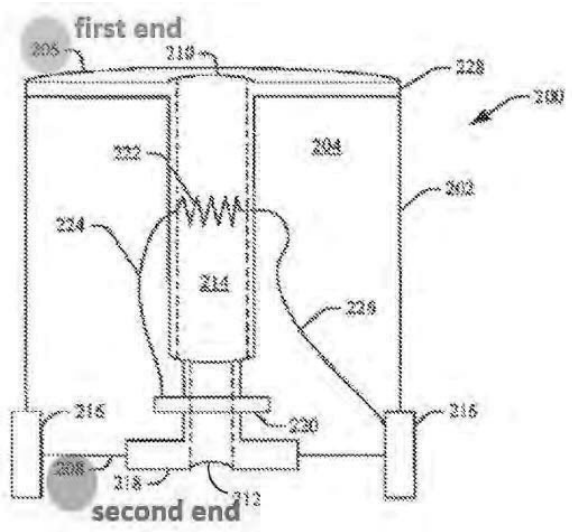


"by explaining that air flows in the inlets, past the diaphragm 7, and through the room with heater 9, Xia '610 makes clear that the identified first aperture is an aperture because air flows through it." JX-0633C (Leinsing Opening Report, Appx. A) ¶¶ 75-76. As the evidence will show, and as will be demonstrated at the hearing, while the hole identified by Respondent and its expert as the claimed first aperture in the figure above is an aperture, it is not an aperture in the housing and not an aperture at the first end of the housing. As the figure above shows, the identified aperture is a hole in the secondary liquid storage rather than the stainless steel shell of the generator, which Respondent and its expert identify as the housing.

The evidence will also show that the aperture identified by Mr. Leinsing is not at the first end because what Mr. Leinsing identifies as the first end is entirely arbitrary and contrary to the specification. The "first end" is the end of the device, not some indeterminate length of the device. The 881 Patent clearly states that the "electronic vaporizer comprises a housing that has an interior, a first end, and a second end." JX-0003 (881 Patent) at 1:41-43. The evidence will show that Respondent and its expert conflate the interior of the device with the first end of the device; but the 881 Patent clearly distinguishes between the two. This is made clear from at least Figure 2 of the 881 Patent, which identifies the end of the device as the first end and the other end of the device as the second end. Figure 2 does not identify a portion of the device as an end.

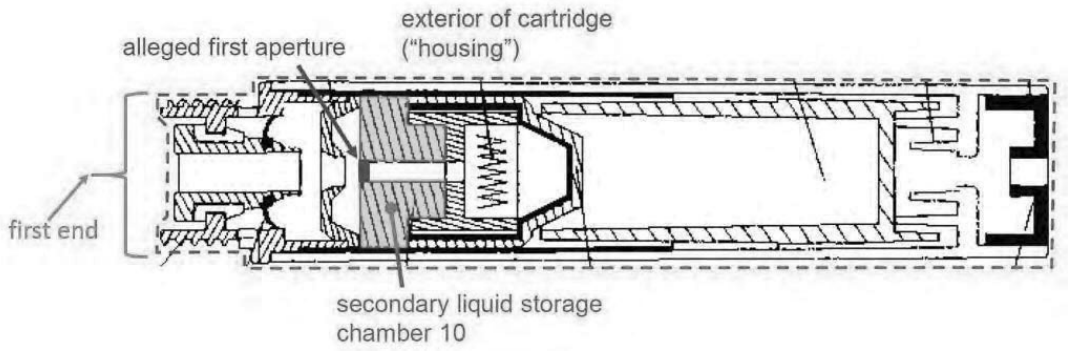
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JX-0005 (881 Patent) at Fig. 2 (annotated)

In sum, it will be demonstrated at the hearing that Xia 610 does not disclose a first aperture in the housing, nor does it disclose an aperture at the first end, as required by the claims. The following figure illustrates the proper characterization of the aperture identified by Respondent and its expert. To be clear, these annotations describe Respondent's and its expert's interpretations of Xia 610, not Complainant's. For example, Complainant disagrees that the structures boxed in red constitute the housing of the cartridge, as with this three-piece design the cartridge does not comprise the reusable atomizer part.



JX-0596 (Xia 610) at Fig. 2 (partial, annotated)

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The evidence will show that a POSITA would have understood that the hole Respondent's expert identifies as the claimed first aperture is a part of the internal structure of the device rather than the housing because it is separated from the left edge by other components that Respondent acknowledges to be internal to the housing, such as the vibrating diaphragm 7 and the liquid blocking plate 8.

(ii) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 1e

Claim limitation 1e of the 881 Patent recites "the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious a housing including a first aperture on the first end and a second aperture on the second end. Respondent's expert, Mr. Leinsing, contends that "[t]o the extent that Xia '610 does not disclose this feature, [combinations of Xia '610 in view of itself, Wang '554, Fang '044, and/or Smoke Fifty-One Duo] render it obvious." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 78. Mr. Leinsing also states that a POSITA would have been motivated by these references and devices to "move Xia '610's central aperture … to the left of the cartridge, such that it is located at the end." JX-0632C (Leinsing Opening Report) ¶ 231. The evidence will show this argument to be wrong for at least the following reasons.

First, as will be demonstrated at the hearing, a POSITA would not have been motivated to make the proposed modification. Respondent's expert contends that POSITA could move the first aperture to the edge of the cartridge by moving the air inlets to the controller part and having "the opening of the [generator's] connecting conductor A5 would serve as the first aperture and thus allow airflow down the middle of the housing." JX-0632C (Leinsing Opening Report) ¶ 233.

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However, the evidence will show that none of the cited references teach an air inlet system where air intake into the device occurs via holes in the connecting parts of the power source. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 15. In contrast, Wang 554 and Smoke Fifty-One Duo have their air inlets on the bottom edge of the power source, not at the threads, while Fang 044 does not disclose an air inlet for the device. *See* Sections IV.E.4.b)(2), IV.E.4.b)(3), and IV.E.4.b)(6).

Second, the evidence will show that Respondent's proposed modification of moving the air inlet holes to the battery portion is not a simple modification. Instead, such a modification requires a substantial redesign of Xia 610. It requires an entirely new actuation mechanism because the modification removes the vibrating diaphragms. It also requires an entirely new method of blocking the back flow of liquid into the battery portion. This is especially concerning because the connecting portion has now become part of the airflow passageway and the connecting portion provides access to the battery portion. E-liquid in the battery portion can have catastrophic effects on the operation of the device. Xia 610 relies on inhalation force to displace liquid into the airflow stream. Extending the airflow passageway into the connecting portion alters the airflow characteristics and necessitates further changes to ensure inhalation generates enough force to dislodge liquid while at the same time not being uncomfortable to the adult consumer.

Third, Respondent, through its expert, Mr. Leinsing, argues that modifications permit the extension of liquid storage 12. *See* JX-0632C (Leinsing Opening Report) ¶ 231. As will be demonstrated at the hearing, this argument fails to account for the space taken up by the changes proposed by Respondent's expert. For example, Respondent's expert proposes to make room by replacing the vibrating diaphragms with a different actuator – *e.g.*, the actuators from Wang 554 or Fang 044. JX-0632C (Leinsing Opening Report) ¶ 235. But the actuators from Wang 554 and

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Fang 044 are substantially larger (orders of magnitude larger) than Xia 610's vibrating diaphragms. As the evidence will show, removing the diaphragms does not create extra space, it sacrifices space and that space either needs to come from the battery portion or the cartridge. If it comes from the battery portion, the device will have a much shorter duration before the battery needs to be replaced. If it comes from the cartridge, the device will have even less room for liquid storage. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 32.

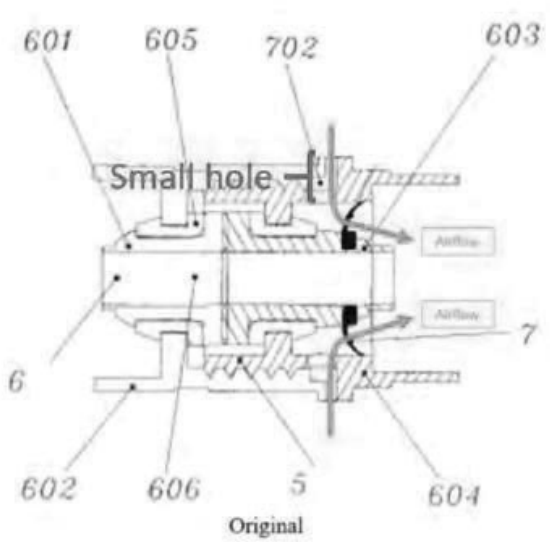
Fourth, the evidence will show the modified device would not be cheaper to manufacture as Respondent and its expert argue. The proposed new actuation components are off-the-shelf components, which means the manufacturer of the Xia 610 device will need to purchase these components (at a mark-up) from a third party. The evidence will show also that the battery/cartridge interiors need to be redesigned to accommodate these components – the components need to be secured with the device. And because these are "off-the-shelf" components, the device needs to be designed around the components rather than the other way around. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 33.

Moreover, the evidence will show that it would not be easier to create the new intake hole that Respondent's expert proposes. The modification requires a substantially deeper hole compared to the unmodified version. Thus, more material needs to be drilled out. Furthermore, Respondent's expert also appears to narrow the airflow passageway to provide back-flow protection. *See* JX-0632C (Leinsing Opening Report) ¶ 239. That requires even more material to be drilled out. Furthermore, the position of the hole abuts the screw thread of the cartridge portion. Accordingly, if the screw is over- or under-tightened, the channel will be disrupted, which will adversely impact the airflow characteristics through the channel and could create a whistling noise

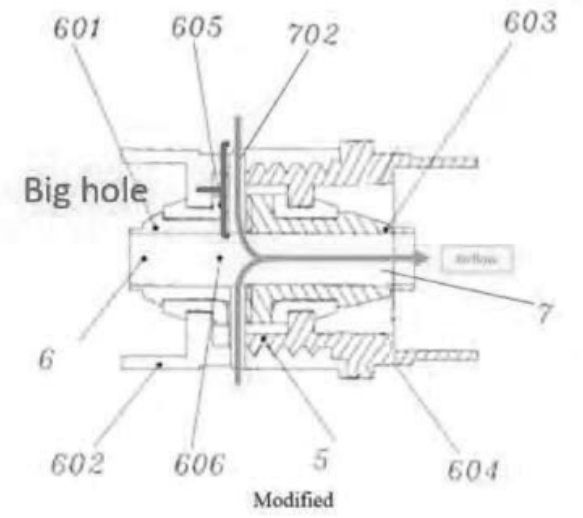
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that would be particularly annoying to the consumer. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 34.



Original



Modified

JX-0632C (Leinsing Opening Report) ¶ 236

In addition, the evidence will show that Respondent's expert's modification will result in greater failure rates in the device. The purported cartridge portion is allegedly replaceable while the battery portion is not intended to be replaced. By putting the air inlet holes on the battery

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portion, and making those holes have a substantial length, there is a real risk of those holes becoming clogged with dirt and debris over time. There is also a real risk that any accumulated debris is brought into the interior of the device during an inhalation. In contrast, with the air inlet hole on the alleged cartridge end, the hole is replaced every time that portion is replaced. Similarly, any failure in the actuation device in the modified version requires replacement of the battery portion, which is the more expensive component. By putting a more expensive actuating mechanism in the battery portion, the actuation mechanism will see more actuations that would be seen in the unmodified version (because it would regularly be replaced).

Finally, the evidence will show that the modification would not have predictable results as Respondent's expert suggests. The proposed modification does not simply move the air input holes to the battery portion but fundamentally changes the structure of the device. Respondent's expert also replaces the actuating mechanism with a completely new actuating mechanism, redesigns the airflow passageway to prevent backflow, and extends the liquid storage at the expense of diminishing the capacity of the battery. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 36.

(iii) Xia 610 Does Not Disclose Claim Limitation 1f

Claim limitation 1f of the 881 Patent recites "wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing."

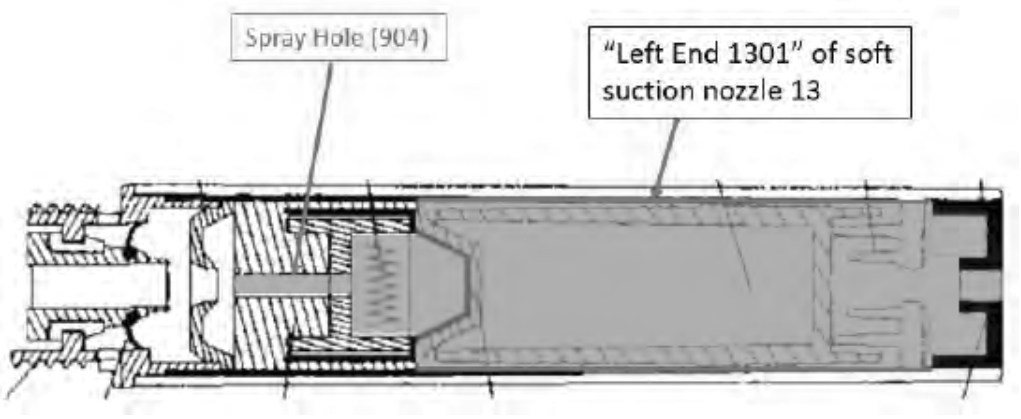
The parties have agreed that the term "an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from

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a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first end of the housing and the second aperture on the second end of the housing. Respondent's expert, Mr. Leinsing, contends that "Xia '610's airflow occurs within a region defined by the inner face of the left end of the suction nozzle 1301, which serves as the claimed 'airflow passageway' as NJOY interprets that term." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 88. Respondent's expert further states that "Xia '610 discloses a region defined by the interior of the left end 1301 of the suction nozzle, which itself tracks the interior of the generator's shell" and relies on the following annotated version of Xia 610's Figure 2. JX-0633C (Leinsing Report, Appx. A) ¶ 88.



JX-0633C (Leinsing Opening Report, Appx. A) ¶ 90

Further, Respondent, through its expert, argues that "[t]he region defined by the interior of the left end 1301 of the suction nozzle is central and axial with respect to the shell of the generator portion." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 91.

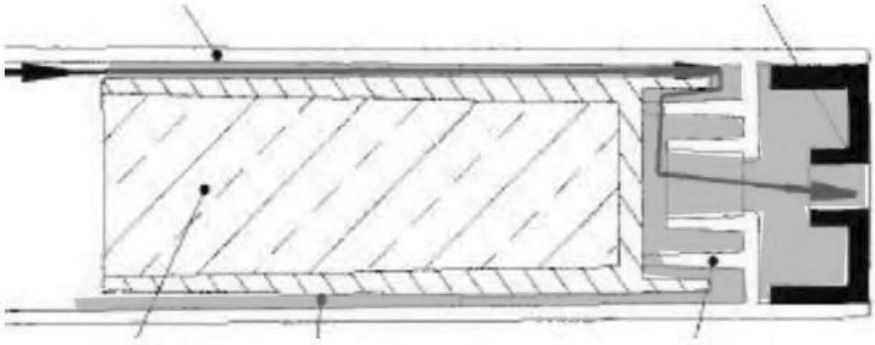
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As will be demonstrated at the hearing, Respondent and its expert rely on an incorrect interpretation of the airflow passageway. Respondent's expert focuses on the left end 1301 of the soft suction nozzle 13 as the boundary outlining the airflow passageway in Xia 610 but ignores how the internal components also define the shape of the passageway. The evidence will show that a POSITA would have understood that the airflow passageway in Xia 610 does not extend in a straight path between the two apertures identified by Respondent's expert. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 50. Besides the left end 1301, the airflow passageway is defined by the overflow holes 903, the liquid storage chamber 12, and the liquid blocking tank 15. Xia 610 discloses "a gap which is used as an airflow channel is left between the soft suction nozzle 13 and the liquid storage chamber 12." JX-0596 (Xia 610) at .0010. The evidence will show that a POSITA would have understood that while there is an empty space between the solution storage chamber 12 and the suction nozzle 13, the airflow passageway in this part of the device is defined by the shape of the liquid blocking tank 15. *Id.* The liquid blocking tank 15 includes a number of "fingers" that define the circuitous path of the airflow passageway in that section of the device's cartridge. The interpretation of the airflow passageway in Xia 610 put forth by Respondent's expert disregards that the inventors of Xia 610 highlighted the importance of this shape of the passageway by marking it with an arrow that illustrates how air moves around the solution storage chamber and the liquid blocking tank 15. Therefore, the evidence will show, and as will be demonstrated at the hearing, a POSITA would have understood the airflow passageway in Xia 610 to have the shape as shown in the following annotated version of Figure 5. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 51.

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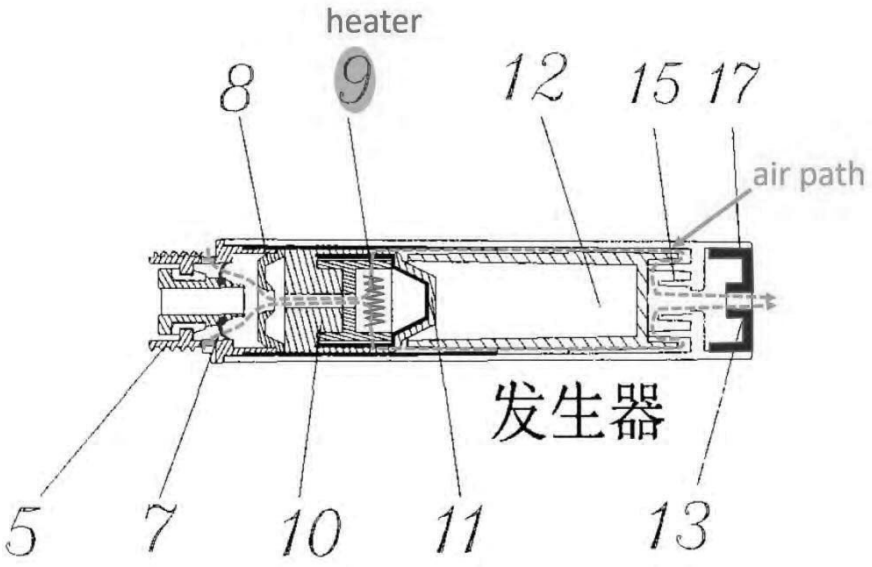
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JX-0596 (Xia 610) at Fig. 5 (annotated)

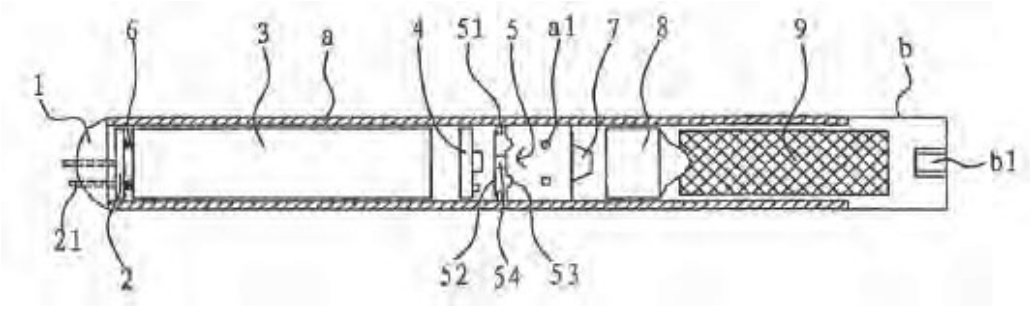
As the evidence will show, a POSITA would have understood the overflow holes 903, which serve as the section of the airflow passageway that carries vapor out of the working room of the heater toward the sucker 13, to also be oriented perpendicularly to the central longitudinal axis of the Xia 610's housing and, therefore, not extend centrally an axially with respect to the housing. Therefore, as will be demonstrated at the hearing, a POSITA would have understood the passageway to be neither central nor axial with respect to the shell of the generator intermediate of the two apertures identified by Respondent's expert. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 52.

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JX-0596 (Xia 610) at Fig. 2 (partial, annotated)

Complainant's interpretation of the airflow passageway is consistent with the file history of the patents in this family. During prosecution of the 864 Patent, the Examiner rejected the pending claims based on U.S. Patent Pub. US 2009/0095311A1 ("Han 311"), a remarkably similar device to Xia 610.



JX-0544 (Han 311) at Fig.1

Han 311 is very similar to Xia 610. For example, air enters the device via a peripheral aperture a1, and similarly to Xia 610, air is drawn into the heater chamber using a "spray" that relies on the inhalation force of the adult consumer. Furthermore, in the heater chamber, airflow goes through a vortex process to capture and reabsorb unvaporized drops. Han 311 and Xia 610

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also use the same words, for example, "spray" to describe the liquid draw from the secondary storage chamber and "vortex" to describe the principle for reabsorption of unvaporized liquid. To traverse Han 311, Applicant argued that Han's shell (b) lacks a central airflow passageway and instead places the perforated component for liquid storage (9) in the middle of shell (b), thereby forcing the airflow around the peripheral surface of perforated component for liquid storage (9). The Examiner stated in his response that "Applicant's arguments with the respect to Han as previously applied under 35 U.S.C. 102, have been fully considered and are persuasive." JX-0008.9016 (864 Patent File History).

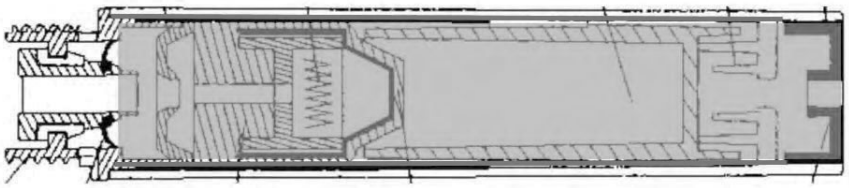
In contrast, the interpretation of the airflow passageway put forth by Respondent's expert is inconsistent with the determination made by the judge in the M.D.N.C. litigation between Fuma and RJR. There, at summary judgment, the judge acknowledged that the patents contemplate obstacles in the airflow passageway and the obstacles do not alter the fact that the airflow passage way "at all times extends straight through the center of the Ciro's cartridge." CX-2315.0016. The Judge clarified that the obstructions in the Ciro's cartridge "do not alter the direction of the Ciro's airflow passageway any more than the heating element." *Id*. As the evidence will show, the whole structure of Xia 610 is designed to create an airflow passageway that provides an exit from the heating chamber perpendicularly to the longitudinal axis of the housing to the space along the periphery of the housing and then snakes through the liquid catching fingers near the mouthend. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 55. This circuitous pathway constitutes a majority of the device. It is not simply a diversion that is quickly rectified.

As will be demonstrated at the hearing, Respondent's interpretation of the airflow passageway in Xia 610 is internally inconsistent in view of the text of Xia 610's specification. Respondent's expert annotated version of Xia 610's Figure 2 highlights in red the left end of 1301

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of the suction nozzle, ending it at the left edge of the solution storage chamber 12. *See* JX-0633C (Leinsing Opening Report, Appx. A) ¶ 90. However, as Xia 610 states, the "left end 1301 of the soft suction nozzle 13 extends to the bottom of the liquid stopping sheet 8." JX-0596 (Xia 610) at .0013. Therefore, under Respondent's interpretation of the airflow passageway, as the interior of the generator's shell defined by the left end 1301, and with the left end 1301 extending as far back as the specification explains it does, the airflow passageway would have to be considered extending further to the left, covering the secondary liquid storage 10, as shown in the following annotated version of Xia 610's Figure 2.



JX-0596 (Xia 610) at Fig. 2 (partial, annotated)

(iv) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 1f

Claim limitation 1f of the 881 Patent recites "wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing. Respondent, through its expert, Mr. Leinsing, argues that a modification of Xia 610 in view of Wang 554, Fang 044, and Smoke Fifty-One Duo renders this

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limitation obvious, particularly with respect to replacing Xia 610's airflow passageway with a central through-hole in the solution storage medium. The evidence will show that this modification would not have been obvious because Respondent underrepresents the difficulty of making the proposed modification and the lack of compatibility between the referenced designs.

As will be demonstrated at the hearing, Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo rely on significantly different mechanisms for how liquid is transported and vaporized. For example, in Xia 610, the adult consumer's inhalation from the sucker results in the nicotine liquid being pulled from the secondary liquid storage chamber into the working room of the heater where the liquid is vaporized. The heater working room constitutes a portion of the airflow channel. *See* JX-0633C (Leinsing Opening Report, Appx. A) ¶ 90. The vaporized liquid is then carried as part of the airflow in the direction of the sucker. The inventors of Xia 610 recognized that the disclosed vaporization process would result in significant amounts of unvaporized liquid, and therefore, included multiple safeguards aimed at preventing this free floating liquid from traveling either backwards into the controller or the adult consumer's mouth. These elements include a liquid-blocking plate 8, a liquid-guiding mechanism 11, the geometry of the heater's working room itself, liquid block tank 15, and liquid blocking sealing cover 17 for capturing excess liquid. To the extent that Respondent is not arguing that the inventors of Xia 610 installed redundant components, thereby increasing manufacturing complexity and cost of the device for no practical reason, it appears that each of these elements was important in the eyes of inventors for a design that was enjoyable and safe to use.

In contrast, as explained below in Section IV.E.4.b)(2), Wang 554 uses a design where a liquid-saturated fiber, acting as the solution holding medium, is wrapped directly around the heater and includes a gap between the solution storage medium and the air outlet (which Respondent's

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expert identifies as the claimed second aperture) apparently for the vaporized liquid to accumulate and mix. Wang 554 does not include a central airflow passageway and also does not have a dedicated wicking element. Meanwhile, as explained below in Section IV.E.4.b)(3), Fang 044 uses an intermediate wick, to which it refers as temporary oil storage 15, whose structure draws the solution from the primary oil storage 14 to the heating element.

The evidence will show that a POSITA would have understood that in each of the devices, inventors' particular design approaches regarding the physical arrangement of the device influenced their choices for which mechanisms were utilized using which components. A POSITA would not have viewed these merely as two different approaches that could be used interchangeably. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 61. The evidence will show also that while these approaches had different strengths and weaknesses, going between them would amount to more than a simple design choice. For example, modifying Xia 610 in view of Wang 554, Fang 044, or Smoke Fifty-One Duo to transform the solution storage having a central through-hole would interfere with the aforementioned liquid blocking mechanism.

The evidence will show that a POSITA would have understood that the liquid blocking plate 15 of Xia 610 is only effective to the extent that airflow must travel through its circuitous shape. The airflow passageway disclosed in Xia 610, as properly interpreted, requires this by carrying the airflow from the atomizing room along the thin channel formed by the solution storage chamber to the "fingers" of the liquid blocking tank. Respondent's proposal of replacing this structure with a central through-hole that would send the airflow directly to the sealing cover (17) rendering the liquid blocking tank useless.

Respondent's expert, states, wrongly, that Xia 610 does not "say anything about sucking liquid into the airflow passageway. In fact, it states the opposite – liquid is instantly vaporized

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before being sucked out by a user." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 12. However, the liquid needs to be brought to the heating element and there is no wicking element in Xia 610 that brings liquid to the heating element (in contrast to Fang 044). Xia 610 states that, "under the action of airflow, small droplets are sucked into the other side of the heat insulation seat 902 through spray hole 904 in the heat insulation seat 902." JX-0596 (Xia 610) at .0013. The evidence will show that airflow is created by this inhalation. Thus, when the consumer inhales, small droplets are sucked from second liquid storage chamber 10 into the airflow passage way to be brought to the heating element. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 63.

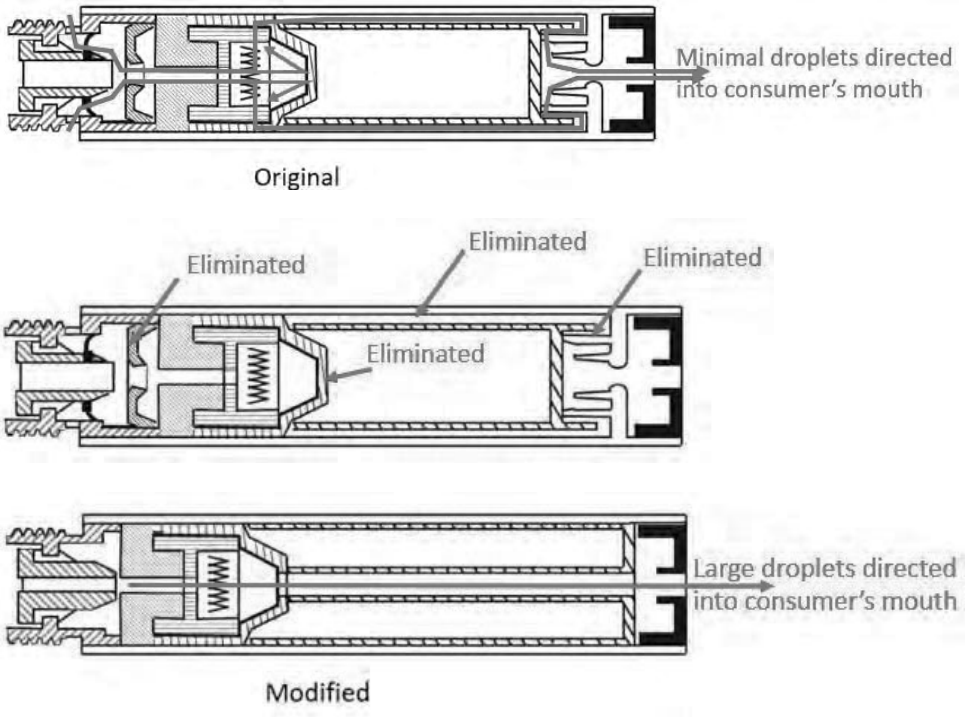
Evidence will show that a POSITA would have understood that when Xia 610 states that the liquid is instantaneously vaporized, that does not mean that large droplets are not still entrained in the airflow. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 64. Indeed, Xia 610 includes a specific structure near the heating element where, after vaporization, "large-diameter droplets after atomization are attached to a wall under the action of a vortex to be reabsorbed by the liquid-guiding mechanism through the overflow holes, and small-diameter droplets are suspended in the airflow to form water vapor, which is sucked out through a smoke channel and the suction nozzle." JX-0596 (Xia 610) at .0016. Xia 610 also runs the airflow passageway along the exterior of the liquid storage compartment through a narrow gap. Droplets entrained in the vapor are reabsorbed into the liquid storage. And finally, Xia 610 includes liquid blocking tank 15 and liquid blocking sealing cover 17, each of which is also directed to preventing droplets in the vapor from reaching the consumer. "The liquid blocking tank 15 and the liquid blocking sealing cover 17 are used to prevent the chemical liquid from being sucked into the mouth." JX-0596 (Xia 610) at .0011.

As will be demonstrated at the hearing, the modification proposed by Respondent's expert would eliminate these features that provide reabsorption of liquid droplets. *See* CX-2728 (Vallee

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Rebuttal Report, Appx. A-1) ¶ 65. And without reabsorption, those droplets would end up in the adult consumer's mouth. Respondent's proposed modification assumes without any foundation that the remaining safeguards would be enough to counteract the flow of unvaporized liquid into the adult consumer's mouth. Neither Respondent nor Mr. Leinsing provides any support for it being so absent further modifications. As illustrated in the following annotated figure, Respondent's expert's modification provides a straight shot directly into the consumer's mouth: [25]



JX-0632C (Leinsing Opening Report) ¶ 247

Respondent's expert contends that modifying the solution storage in Xia 610 "would improve the manufacturing of the device. For example, having a central through-hole for an airflow passageway like the proposed modification makes assembly of the solution holding medium easier,

[25] Notably, Mr. Leinsing's drawing of the original device is inaccurate, in that it merges the outer shell of the liquid-storage cartridge with the outer shell of the separate atomizer component.

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as for example, batting or absorbent material can be stuffed into the device around a tube." JX-0632C (Leinsing Opening Report) ¶ 248. The evidence will show this assertion to be incorrect, it is much easier to stuff batting into a cylinder. It is more time intensive to stuff batting around a tube because it is more difficult to do that in an even way. Moreover, with the tube in the middle, it greatly reduces the space within the cylinder and would require the assembler to have smaller fingers to be able to reach into the space. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 66.

Respondent's expert further states that the proposed modification "requires less precision in manufacturing and eliminates the need to have parts suspending the liquid storage chamber within the housing for example." JX-0632C (Leinsing Opening Report) ¶ 248. However, as explained above, the modification proposed by Respondent's expert would be harder to assemble. Second, the proposed passageway would have a more complicated tubular shape requiring more material, which would increase the manufacturing costs. Finally, although the central through-hole modification would result in a stronger airflow, in light of the potential issues with unvaporized liquid highlighted above, this modification would increase the amount of such liquid flowing into the adult consumer's mouth, which would dissuade a POSITA from pursuing it. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 67.

Respondent's expert, Mr. Leinsing, also contends that providing a central channel would increase the liquid storage of the device and includes calculations to support his contention. *See* JX-0632C (Leinsing Opening Report) ¶ 249. However, as the evidence will show, these calculations are fundamentally flawed. First, the calculations are not based on any engineering drawings. There is no indication that the Xia 610 device is drawn to scale or relative scale. The figures are simply illustrations of the device. Moreover, it appears that Mr. Leinsing used the liquid

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storage of Figure 5, which clearly does not have the same dimensions as the liquid storage of Figure 1. Accordingly, reliable measurements cannot be taken from the figures.

The evidence will show, and as will be demonstrated at the hearing, Respondent's expert's calculations make several improper assumptions. As a threshold matter, Mr. Leinsing removes the batting case from the modified version but fails to include a batting case for the internal channel. Without batting, the device will constantly leak liquid into the airflow passageway. Mr. Leinsing measures multiple different diameters from the illustrations but fails to account for the differences. However, as Figure 5 of Xia 610 clearly shows, the batting casing and the liquid storage does not have a uniform diameter. Mr. Leinsing also fails to account for the vortex heating chamber that protrudes into the liquid storage area. *See* JX-0596 (Xia 610) at Figs. 1 and 2. Finally, Mr. Leinsing's calculations do not test whether adding a central pipe creates more or less volume in the container compared to no central pipe. That is because he includes in his calculations for the modified embodiment an extension of the liquid storage container, which is not a by-product of including a central pipe.

Respondent, through its expert, argues that providing a central channel better enables thermal control of the device. *See* JX-0632C (Leinsing Opening Report) ¶ 251. The evidence will show that this conclusion is incorrect. When an adult consumer inhales, the air moves quickly through the gap adjacent to the housing, which provides little time for vapor to be adversely impacted by the environment or for the vapor to adversely affect the e-cigarette device. The primary concern in e-cigarettes is that the battery, not the vapor, makes the device hot. The bigger concern is placing the liquid storage immediately adjacent to the housing without any thermal insulation (which is what Respondent's expert's proposed modification does). In a cold environment, for example, the liquid in the storage chamber would become colder quicker because

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it is near the external surface of the device. This is problematic because there is no indication that the heater will change its heat output based on the temperature of the liquid. Thus, in Respondent's modification, there is a concern that the heater, in some situations would be inadequate to provide the thermal output to heat the liquid to vaporization. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 71.

Finally, the evidence will show that Respondent and its expert fundamentally restructure the entire interior of Xia 610 to such an extent that a POSITA would not have recognized the modified device as Xia 610. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 72.

(v) Xia 610 Does Not Disclose Claim Limitation 1j

Claim limitation 1j of the 881 Patent recites "wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway."

The term "transversely" has been construed "to have its plain and ordinary meaning, that is, crosswise." CC Order at 13-17.

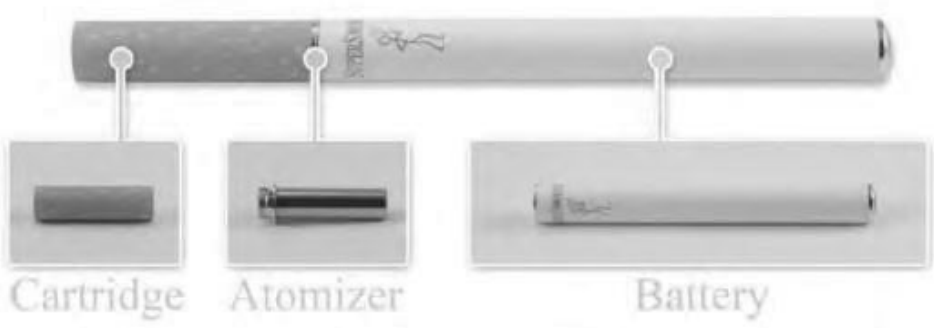
Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses a housing that includes a heating element located in the interior of the housing. Respondent's expert contends that Xia 610 discloses this limitation because Xia 610 includes "heating coil 9, of Xia 610, which is depicted as a coil, is shown oriented horizontally within the housing." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 176. This claim requires "a cartridge having a housing … wherein the housing includes ***a heating element located in the interior of the housing***". JX-0005 (881 Patent), Claim 1, limitation 1d, 1j (emphasis added). The evidence will show that Xia 610 does not include a heating element in the claimed housing.

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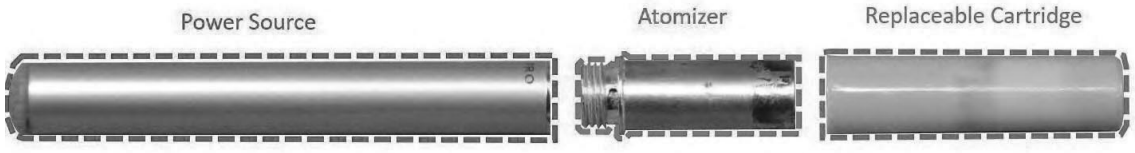
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Respondent, through its expert, Mr. Leinsing, argues that "the e-cigarette device disclosed in Xia 610 and the NPRO and NCIG e-cigarettes include substantially similar structures and function substantially similar" and "Xia '610, NPRO, and NCIG all include a similar atomizer design with a base holding the coil, and a bridge over the coil. The bridge abuts the absorbent filler. Air leaving the atomizer travels around the solution holding medium in the middle of the housing in Xia '610 and NPRO to reach the second aperture." JX-0640C (Leinsing Report, Appx. G) ¶ 10. Evidence will show, and as will be demonstrated at the hearing, a POSITA would have understood the NPRO and the NCIG are "three-piece designs" comprising (1) a disposable cartridge, (2) a reusable atomizer unit, and (3) a power unit. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 79.

Respondent's expert identifies a typical 3-piece e-cigarette, which, like the NPRO and NCIG comprises a (liquid storage), atomizer (heating element), and battery (power unit):

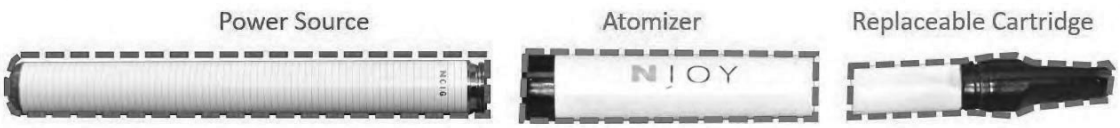


JX-0609.0001 (SuperSmoker) (showing the three pieces of the SuperSmoker e-cigarette, including the cartridge, the atomizer, and the battery).



CX-2768.0001, .0003 (NPRO)

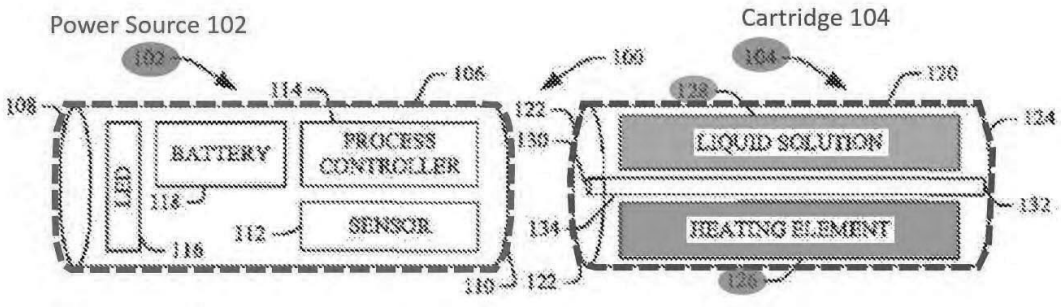
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CX-2764.0001 (NCIG); CX-2765.0001

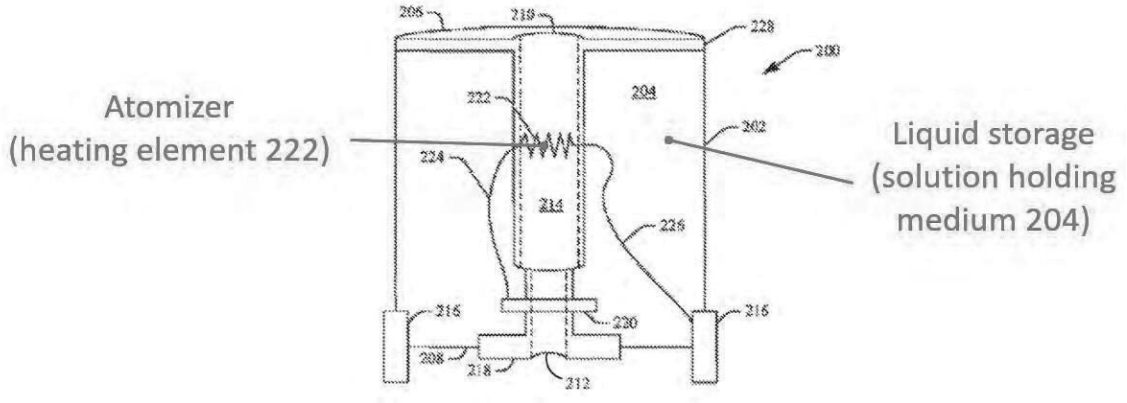
By contrast, a "two-piece" e-cigarette design comprises (1) a disposable cartridge and (2) a power unit. In these "two-piece" designs, the disposable cartridge combines both the liquid storage and the atomizer, and is sometimes termed the "cartomizer." *See e.g.*, JX-0632C (Leinsing Opening Report) ¶ 47 ("In known two-piece cartridge designs the cartridges are sometimes referred to as 'cartomizers,' and contain both the solution holding means and atomizer components in a non-separable component. As the two cartomizer components could not be separated, in the two-piece design, every new cartridge came with a fresh atomizer, which would be discarded once the solution in the cartridge had been consumed.").

The Asserted Patents acknowledge the distinction between three-piece and two-piece designs. For example, Figures 1 and 2 are directed to two-piece designs, as shown below. *See* JX-0005 (881 Patent) at 2:60-61 ("The electronic vaporizer 100 comprises a power source 102 and a cartridge 104").



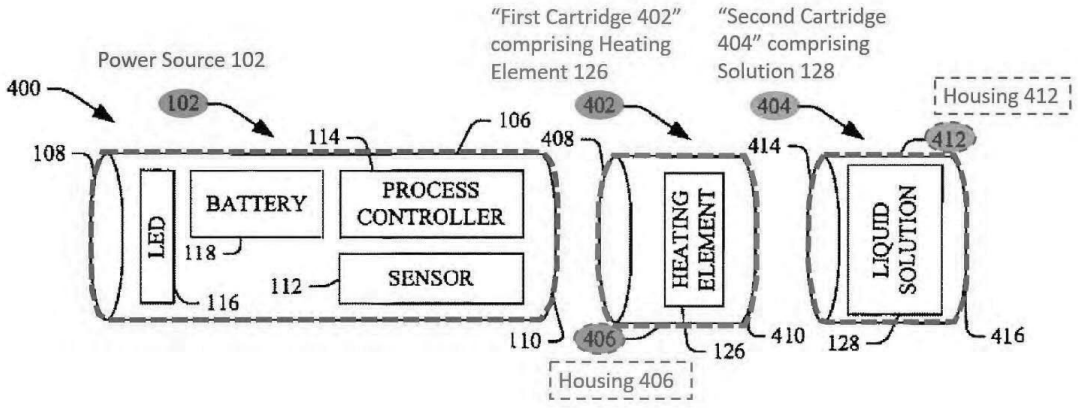
JX-0005 (881 Patent) at Fig. 1 (annotated to identify two pieces pieces—power source 102 and cartridge 104)

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JX-0005 (881 Patent) at Fig. 2 (annotated to identify atomizer and liquid storage integrated into cartridge 200)

Figure 4, however, is directed to a three-piece design, which is not the subject of this claim. It includes "three separate portions: 1) the power source 102; 2) a first cartridge 402 that comprises the heating element 126; and 3) a second cartridge 404 (a mouthpiece cartridge) that comprises the solution 128." JX-0005 (881 Patent) at 8:26-29. As shown below, item 402 corresponds to the first cartridge comprising atomizer/heating element, and item 404 corresponds to the disposable cartridge comprising liquid storage/solution holding medium:



JX-0005 (881 Patent) at Fig. 4 (annotated to identify three pieces—power source 102, cartridge 402 comprising heating element 126, and cartridge 404 comprising solution 128)

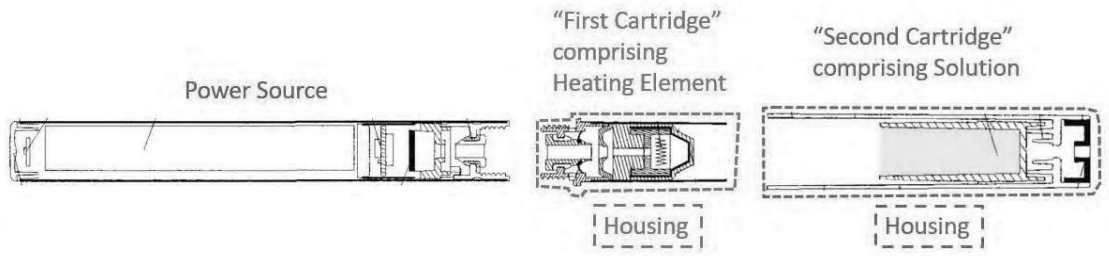
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Notably, item 402 and item 404 each have their own distinct housings: the "first cartridge 402 can comprise a housing 406" and the "second cartridge 404 comprises a housing 412." JX-0005 (881 Patent) at 8:32-35, 8:47-49.

As between the two-piece and three-piece designs, the Asserted Patents specifically and exclusively claim the former. Each of the claims of the Asserted Patents expressly requires a cartridge having a housing that includes a heating element and a solution holding medium.

The evidence will show that Xia 610, which according to Respondent and its expert shares a substantially similar design to the three-piece NPRO and the NCIG designs, does not comprise a cartridge with both the heating element and solution holding medium. Instead, similar to other three-piece designs and the three-piece embodiment in the asserted patents, Xia 610 includes a first cartridge comprising a heating element ("atomizer") and second cartridge comprising a solution ("replaceable cartridge"), and therefore does not disclose the required claim limitation.



JX-0596 (Xia 610) at Figure 2 (modified and annotated)

(vi) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 1j

Claim limitation 1j of the 881 Patent recites "wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 grounds render obvious a housing that includes a heating element in the interior of the housing.

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Respondent's argument does not address whether it would have been obvious to modify Xia 610 to include a heating element ***in the cartridge housing.*** Furthermore, Respondent's expert contends that it would have been obvious to modify Xia 610 to include a transverse heating element and to have the heating element extend the full width of the airflow passageway. JX-0633C (Leinsing Opening Report, Appx. A) ¶¶ 178-179. This does not address the fact that Xia 610 lacks a cartridge housing including a heating element.

As the evidence at the hearing will show, a POSITA would not have been motivated to modify a three-piece e-cigarette to create a two-piece e-cigarette and would not have had a reasonable expectation of success in making that modification. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 89. The predominant designs at the time of the invention of the Asserted Patents were "noncartomizer" designs, where the atomizer was reused and not disposed of along with the liquid cartridge, which prevented waste and kept costs low. *See, e.g.*, *generally* JX-0595 (Fang 044); JX-0544 (Han 311). *See also* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 90.

As the evidence will show, although a small number of two-piece devices existed by the time of invention of the Asserted Patents, those devices were failures and would not be evidence to show why a POSITA would have been motivated to alter prior-art devices that are not two-piece devices to make them two-piece devices. A POSITA may have perceived certain drawbacks—particularly the fact that in two-piece "cartomizers" the heating element and the liquid solution are integrated into the same housing—meaning that the heating element must be disposed with each cartridge, which increases the expense of the cartridge. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 91.

The Asserted Patents' inventions overcame the perceived limitations of cartomizer designs and revolutionized the accepted wisdom that cartomizers were too expensive and not desirable by

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producing a cartomizer that was more desirable than systems with only a disposable liquid storage element. Regardless of the availability of two- and three-piece e-cigarettes, that availability is not sufficient to establish a motivation to modify a three-piece e-cigarette to create a two-piece e-cigarette or a reasonable expectation of success. *See also* Section IV.E.4.b)(6)(a) (discussing the added difficulty and cost of using a horizontal heating element, particularly in a disposable cartridge).

(vii) Xia 610 Does Not Disclose Claim Limitation 1l

Claim limitation 1l of the 881 Patent recites "the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end."

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses the solution holding medium that surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end.

With respect to the 881 Patent, claim 1, Respondent's expert explains:

> I understand that ***under JLI's interpretation***, the claim limitation does not allow only part of the length of the airflow passageway or heating element to be surrounded by the solution holding medium. I understand that ***NJOY's interpretation*** of this claim limitation is not limited in this way.

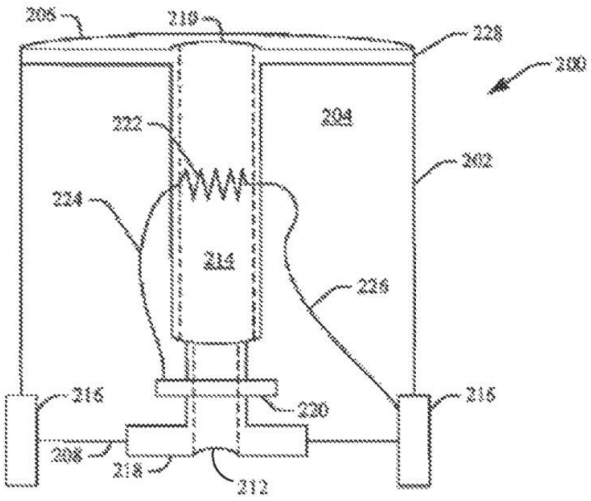
JX-0632 (Leinsing Opening Report) ¶ 214.

It is unclear what Mr. Leinsing means by "only part of the length of the airflow passageway or heating element." Regardless, this term has its plain and ordinary meaning. Limitation 1l does not specify whether the solution holding medium completely or partially surrounds the airflow passageway or heating element, and thus a POSITA would have understood that the term may encompass both situations. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 96. Indeed, the

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solution holding medium in Figure 2 of the Asserted Patents does not surround the entire length of the airflow passageway. Rather, as shown in Figure 2 the solution holding medium (*i.e.*, an absorbent material 204) appears on either side of the airflow passageway 214 and extends from gap 228 to center post 218. The solution holding medium does not extend all the way from end 212 of the airflow passageway to end 210 of the airflow passageway.



JX-0005 (881 Patent) at Fig. 2

Respondent's expert contends that "Xia '610's solution holding medium 10 surrounds the left portion of the airflow passageway as illustrated and the portion of the airflow passageway in which the heating coil sits in the interior of the housing." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 203. However, as explained above in Section IV.E.4.b)(1)(b)(iii), Xia 610 does not disclose the claimed airflow passageway.

Moreover, the evidence will show that under Respondent's interpretation, Xia 610 does not disclose the required solution holding medium. As explained above, Respondent's expert points to the left end 1301 of the suction nozzle 13 as the structure in Xia 610 that defines the airflow passageway but marks the endpoint of this element at the left edge of the solution storage

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chamber 12, whereas the specification states that it extends as far to the left as the liquid blocking plate 8. As such, under Respondent's interpretation, the airflow passageway in Xia 610 would extend further to the left covering the secondary-liquid-chamber 10. Therefore, the evidence will show that under either Complainant's or Respondent's interpretation, Xia 610's solution holding medium does not surround the airflow passageway intermediate of the first and second apertures identified by Respondent's expert.

Respondent, through its expert, argues that having a solution-holding medium surrounding the airflow passageway was a well-known concept citing to Mr. Conley's testimony in a prior litigation. However, whether Mr. Conley was aware of such configurations in the art is irrelevant to whether Xia 610 discloses such a configuration.

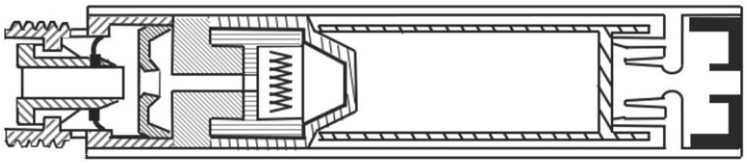
(viii) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 1l

Claim limitation 1l of the 881 Patent recites "the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end."

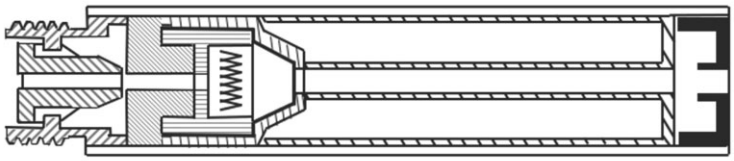
Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious the solution holding medium that surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end. Respondent's expert contends that "in the modification of Xia 610 that includes a through-hole airflow passageway, the solution holding medium surrounds the heating coil at a location intermediate of the first end and the second end." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 205. The following figure shows this modification of Xia 610. Notably, in the modified version, the modified solution storage chamber 12 with a central through-hole does not surround the heating element.

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Original



Modified

JX-0632C (Leinsing Opening Report) ¶ 247

Moreover, as discussed above in Section IV.E.4.b)(1)(a), a POSITA would not have been motivated to make the proposed modification to Xia 610 in view of either Wang 554, Fang 044, or the Smoke Fifty-One Duo (or some combination thereof) because doing so would require changing large portions of the infrastructure of the generator without an apparent net benefit or result in a device suffering from increased inhalation of the unvaporized liquid by the adult consumer.

***

In view of the foregoing, Respondent will not be able to carry its clear and convincing burden that Xia 610 anticipates claim 1, or that any of the Xia 610 Grounds render obvious claim 1.

(c) The Xia 610 Grounds Do Not Anticipate Or Render Obvious Claim 16[26]

[26] Claim 16 is not asserted, but claims 19 and 26, which are asserted, ultimately depends from claim 16.

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(i) Xia 610 Does Not Disclose Claim Limitation 16b

Claim limitation 16b of the 881 Patent recites "the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end, the housing having a first aperture on the first end and a second aperture on the second end."

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses the housing having a first aperture on the first end and a second aperture on the second end, as explained above in Section IV.E.4.b)(1)(b)(i).

(ii) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 16b

Claim limitation 16b of the 881 Patent recites "the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end, the housing having a first aperture on the first end and a second aperture on the second end."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious the housing having a first aperture on the first end and a second aperture on the second end, as explained above in Section IV.E.4.b)(1)(b)(ii).

(iii) Xia 610 Does Not Disclose Claim Limitation 16e

Claim limitation 16e of the 881 Patent recites "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing."

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The parties have agreed that the term "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, as explained above in Section IV.E.4.b)(1)(b)(iii).

(iv) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 16e

Claim limitation 16e of the 881 Patent recites "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, as explained above in Section IV.E.4.b)(1)(b)(iv).

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(v) Xia 610 Does Not Disclose Claim Limitation 16g

Claim limitation 16g of the 881 Patent recites "the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway."

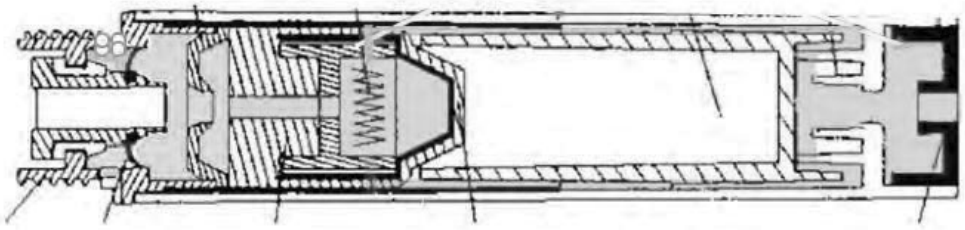
Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway. Respondent's expert, Mr. Leinsing contends that "Xia '610, … alone or in combination disclose[s] or render[s] obvious this limitation for the same reasons that it discloses or renders obvious '881 Patent claim 1l as set forth above." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 491. As explained above in Section IV.E.4.b)(1)(b)(vii), Xia 610 does not disclose the airflow passageway according to limitation 1l.

Moreover, claim limitation 16g differs from claim limitation 1l by requiring ***the majority of the airflow passageway's length*** to have an exterior adjacent to the solution storage medium. The evidence will show that a POSITA would have understood that even under Respondent's interpretation of the airflow passageway in Xia 610, only a minor portion of the passageway, between the identified first aperture and the heating element chamber, would have an exterior adjacent to the solution holding medium, not a majority of the passageway. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 186.

The evidence will show that a POSITA would have understood the airflow passageway in Xia 610 to have the following shape. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 187.

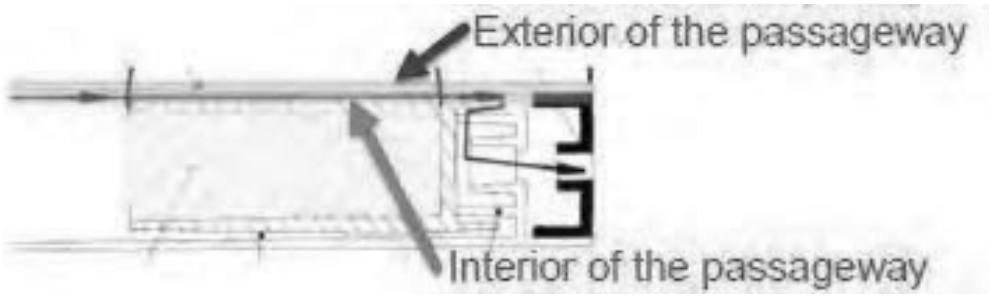
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JX-0596 (Xia 610) at Fig. 2 (partial, annotated)

The evidence will show that a POSITA would have, therefore, understood that in the vicinity of the solution holding chamber 12, the airflow passageway has its exterior edge defined by the left end 1301 of the sucker and its interior edge be defined by the exterior edges of the solution holding medium 12 as illustrated below. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 187.



JX-0596 (Xia 610) at Fig. 5 (annotated)

Therefore, as will be demonstrated at the hearing, a POSITA would have concluded that Xia 610 does not disclose an airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 188.

(vi) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 16g

Claim limitation 16g of the 881 Patent recites "the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway."

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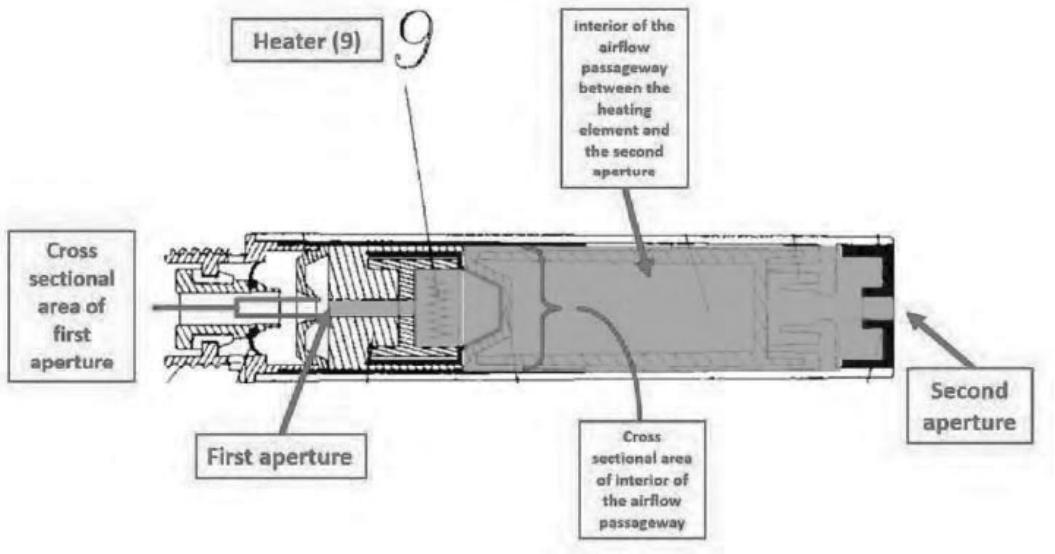
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Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway, as explained above in Sections IV.E.4.b)(1)(a) and IV.E.4.b)(1)(b)(viii).

(vii) Xia 610 Does Not Disclose Claim Limitation 16h

Claim limitation 16h recites "the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway."

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses this limitation. Respondent's expert relies on the following annotated figure to argue that Xia 610 discloses an airflow passageway that meets this limitation.



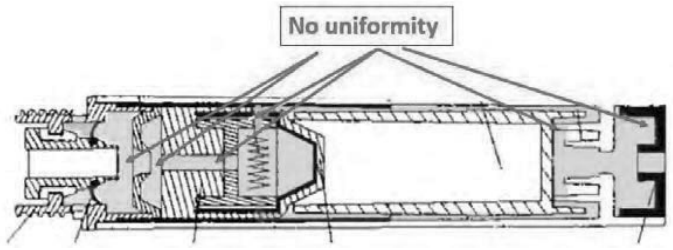
JX-0633C (Leinsing Opening Report, Appx. A) ¶ 342

As explained above Section IV.E.4.b)(1)(b)(iii), the evidence will show that the above interpretation of the airflow passageway in Xia 610 is incorrect given the disclosures in its

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specification. Rather, a POSITA would have understood that under the proper interpretation of the airflow passageway, which takes into account how the various internal components of Xia 610 define the passageway's shape, the passageway lacks an overall uniformity. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 191. The lack of uniformity of the cross-sectional area of the airflow passageway, as measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway, is illustrated in the annotated version of Xia 610's Figure 2 below.



JX-0596 (Xia 610) at Fig. 2 (partial, annotated)

(viii) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 16h

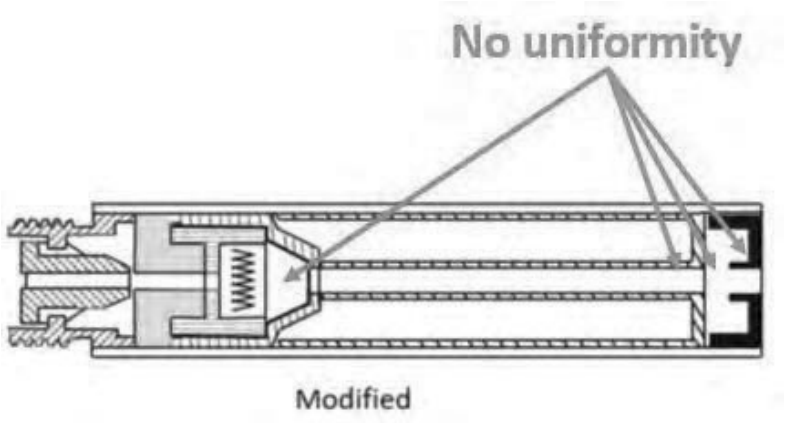
Claim limitation 16h recites "the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious this limitation. Respondent's expert contends that "[u]nder JLI's interpretation, the through-hole modified version of Xia 610 renders this limitation obvious. For example, as explained, the through-hole modification includes a uniform cylindrical through hole in the solution holding medium, through which the airflow passageway traverses." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 343. However, in Respondent's proposed modification, although the section of the airflow passageway through the solution storage chamber does have a

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uniform cross-sectional area, the airflow passageway as a whole, between the heating element and the second aperture, retains at least four different cross sectional areas, as shown in the annotated figure below.



JX-0632C (Leinsing Opening Report) ¶ 247 (modified)

Moreover, as the evidence will show, to the extent Respondent argues that such a modification would have been obvious in view of Wang 554, Fang 044, or Smoke Fifty-One Duo, none of these references disclose a uniform central airflow passageway. For example, as explained in more detail below, Wang 554 does not disclose a central airflow passageway of any kind in its organic fiber 105. The evidence will show that even if such an airflow passageway was there, as Respondent argues, it would not have a uniform cross-sectional area, as it would naturally be thicker where the organic fiber would wrap around the heating element and thinner near the edges of the organic fiber. Furthermore, for Fang 044, the disclosed gas pipe has a number of different cross-sectional areas and is therefore not uniform.

(ix) Xia 610 Does Not Disclose Claim Limitation 16i

Claim limitation 16i of the 881 Patent recites "a heating element located in the interior of the housing and extending transversely across the airflow passageway."

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Respondent will be unable to show by clear and convincing evidence that the Xia 610 discloses this limitation, as explained above in Section IV.E.4.b)(1)(b)(v).

(x) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 16i

Claim limitation 16i of the 881 Patent recites "a heating element located in the interior of the housing and extending transversely across the airflow passageway."

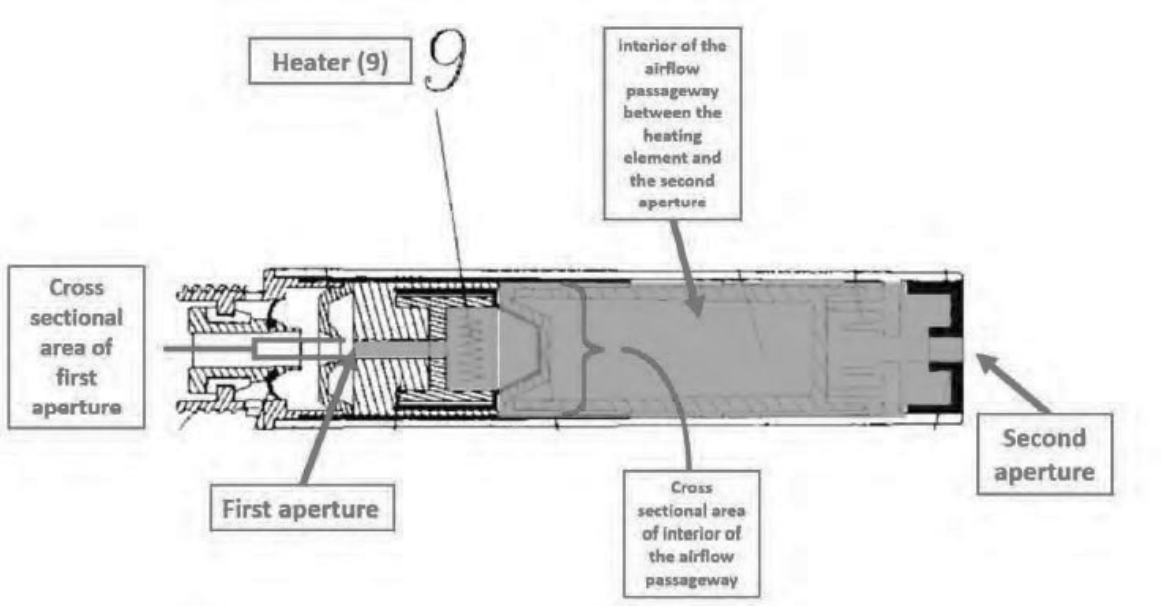
Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious this limitation, as explained above in Section IV.E.4.b)(1)(b)(vi).

(xi) Xia 610 Does Not Disclose Claim Limitation 16l

Claim limitation 16l recites "the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture."

Respondent will be unable to show by clear and convincing evidence that Xia 610 discloses an airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture. Respondent, and its expert, Mr. Leinsing, rely on the following annotated figure argue that Xia 610 discloses the airflow passageway as claimed.

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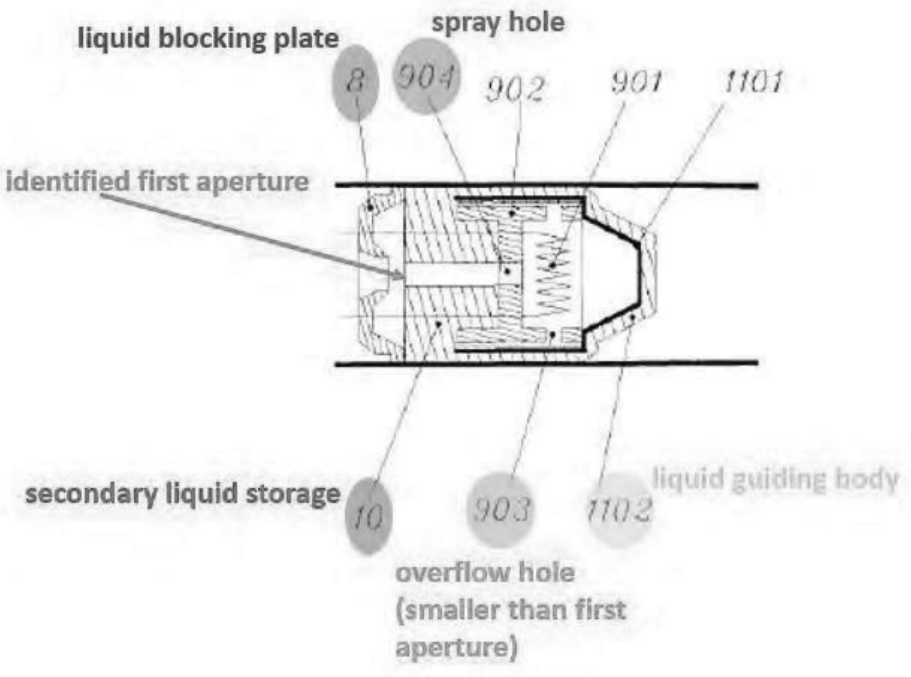


JX-0633C (Leinsing Opening Report, Appx. A) ¶ 303

The evidence will show that Respondent relies on an improper interpretation of the airflow passageway in the above argument. As explained in Section IV.E.4.b)(1)(b)(iii), Respondent and its expert ignore the complex shape of the airflow passageway around the liquid blocking tank 15 as well as the overflow holes 903. Xia 610 explains that "[u]nder the action of the heating wire 901, the liquid is instantly atomized, then flows out of the heater 9 from the overflow holes 903." JX-0596 (Xia 610) at .0013. Evidence will show that a POSITA would have understood the overflow holes 903 to be a critical part of the airflow passageway positioned between the heating element and the second aperture. And from Figure 4, a POSITA would have understood the cross-sectional area of the overflow holes 903 to be smaller than that of the hole identified by Respondent's expert as the first aperture. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 110.

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[redacted]



JX-0596 (Xia 610) at Fig. 4 (annotated)

(xii) The Xia 610 Grounds Do Not Render Obvious Claim Limitation 16l

Claim limitation 16l recites "the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture."

Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious an airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture. Respondent's expert contends that "[u]nder JLI's interpretation, the through-hole modified version of Xia '610 renders this limitation obvious." JX-0633C (Leinsing Report, Appx. A) ¶ 304. However, as explained above in Section IV.E.4.b)(1)(b)(iv), evidence will show that a POSITA would not have been motivated to modify Xia 610 with such a through-hole design.

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In view of the foregoing, Respondent will not be able to carry its clear and convincing burden that Xia 610 anticipates claim 16, or that any of the Xia 610 Grounds render obvious claim 16.

(d) Xia 610 Does Not Anticipate Claim 18[27]

Claim 18 of the 881 Patent recites "[t]he cartridge of claim 16, wherein the heating element is a coil having a maximum diameter and the uniform cross-sectional area of the airflow passageway is a circle having a diameter, the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway."

Because Respondent will be unable to show by clear and convincing evidence that Xia 610 anticipates claim 16, Respondent will be unable to show by clear and convincing evidence that Xia 610 anticipates claim 18.

Moreover, Respondent's expert, Mr. Leinsing, contends that this limitation is disclosed because "[a] POSITA would understand that, because the figures are cross sections, the body of Xia '610's generator is cylindrical, meaning the airflow passageway defined therein is a large hollow cylindrical path, and therefore has a circular cross section." JX-0633C (Leinsing Report, Appx. A) ¶ 278. Mr. Leinsing is incorrect, because his contention relies on an improper interpretation of the airflow passageway. As noted previously, Mr. Leinsing ignores the complex shape of the airflow passageway around the liquid blocking tank 15 as well as the overflow holes 903. As Xia 610 explains, "Under the action of the heating wire 901, the liquid is instantly atomized, then flows out of the heater 9 from the overflow holes 903." JX-0596 (Xia 610) .0013. As such, and as the evidence at the hearing will show, a POSITA would have understood that

[27] Claim 18 is not asserted, but claim 19, which is asserted, ultimately depends from claim 18.

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under the proper interpretation of the airflow passageway, which takes into account how the various internal components of Xia 610 define the passageway's shape, the passageway lacks an overall uniformity along with a circular cross section along a majority of its length. *See* CX-2728 (Vallee Rebuttal Report, Appx. A-1) ¶ 105.

(e) The Xia 610 Grounds Do Not Render Obvious Claim 18[28]

Claim 18 of the 881 Patent recites: "[t]he cartridge of claim 16, wherein the heating element is a coil having a maximum diameter and the uniform cross-sectional area of the airflow passageway is a circle having a diameter, the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway."

Because Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious claim 16, Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious claim 18.

Moreover, Respondent's expert, Mr. Leinsing, only contends that Xia 610 "discloses or renders obvious" this limitation, but does not provide any explanation or specific opinion as to how Xia 610 would render this claim obvious. At least for the reasons and explanations set forth above in Section IV.E.4.b)(1)(a), Respondent will not be able to show by clear and convincing evidence that Xia 610 would not have rendered obvious claim 18.

(f) Xia 610 Does Not Anticipate Claim 19

Claim 19 of the 881 Patent recites: "[t]he cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing."

[28] Claim 18 is not asserted, but claim 19, which is asserted, ultimately depends from claim 18.

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Because Respondent will be unable to show by clear and convincing evidence that Xia 610 anticipates claim 16 or claim 18, Respondent will be unable to show by clear and convincing evidence that Xia 610 anticipates claim 19.

Moreover, Respondent will be unable to show by clear and convincing evidence that the Xia 610 anticipates this claim, as explained above in Sections IV.E.4.b)(1)(b)(i) and IV.E.4.b)(1)(b)(iii).

(g) The Xia 610 Grounds Do Not Render Obvious Claim 19

Claim 19 of the 881 Patent recites: "[t]he cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing."

Because Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious claim 16 or claim 18, Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious claim 19.

Moreover, Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious this claim, as explained above in Sections IV.E.4.b)(1)(b)(ii) and IV.E.4.b)(1)(b)(iv).

(h) Xia 610 Does Not Anticipate Claim 26

Claim 26 of the 881 Patent recites: "[t]he cartridge of claim 16, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element."

Because Respondent will be unable to show by clear and convincing evidence that Xia 610 anticipates claim 16, Respondent will be unable to show by clear and convincing evidence that Xia 610 anticipates claim 26.

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(i) The Xia 610 Grounds Do Not Render Obvious Claim 26

Claim 26 of the 881 Patent recites: "[t]he cartridge of claim 16, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element."

Because Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious claim 16, Respondent will be unable to show by clear and convincing evidence that the Xia 610 Grounds render obvious claim 26.

(2) The Wang 554 Grounds Do Not Render Obvious the Claims at Issue[29]

Complainant anticipates that Respondent will argue that claims 1, 16, 18, 19, and 26 are invalid under 35 U.S.C. § 103 based on the Wang 554 reference. Specifically, Respondent argues the following grounds ("the Wang 554 Grounds"):[30]

1) Wang 554 (§ 103)
2) Wang 554 in combination with Xia 610 (§ 103)
3) Wang 554 in combination with Fang 044 (§ 103)
4) Wang 554 in combination with Smoke Fifty-One Duo (§ 103)
5) Wang 554 in combination with Xia 610 and Fang 044 (§ 103)

[29] In its April 26, 2024 email to the ALJ and the parties, Respondent indicated that it is no longer asserting that Wang 554 anticipates the asserted claims under 35 U.S.C. § 102.

[30] In an April 26, 2024 email to ALJ and the parties, Respondent indicated that it will rely on the combination of Wang 554, Xia 610, Fang 044, and Smoke Fifty-One Duo (§ 103). Based on an earlier email to just the parties on April 26, 2024, Complainant understand that Respondent may attempt "not to present one or more references in a combination, thus resulting in a shorter combination."

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6) Wang 554 in combination with Xia 610 and Smoke Fifty-One Duo (§ 103)

7) Wang 554 in combination with Fang 044 and Smoke Fifty-One Duo (§ 103)

8) Wang 554 in combination with Xia 610, Fang 044, and Smoke Fifty-One Duo (§ 103)

As set forth herein, and as will be demonstrated at the hearing through at least documents, testimony from Complainant's expert Dr. Vallee, demonstrative exhibits and cross-examination, Respondent will be unable to show by clear and convincing difference that claims 1, 16, 18, 19, and 26 of the 881 Patent are invalid based on these grounds.

(a) A POSITA Would Not Have Modified Wang 554 as Respondent Proposes

As set forth herein, and as will be shown at the hearing, a POSITA would not have been motivated to modify Wang 554 or motivated to combine, in the manner proposed by Respondent's expert Mr. Leinsing, (1) Wang 554 and Xia 610; (2) Wang 554 with Fang 044; (3) Wang 554 and Smoke Fifty-One Duo; (4) Wang 554, Xia 610 and Fang 044; (5) Wang 554, Xia 610 and Smoke Fifty-One Duo; (6) Wang 554, Fang 044 and Smoke Fifty-One Duo; and (7) Wang 554, Xia 610, Fang 044, and Smoke Fifty-One Duo. There is no evidence of any apparent reason why a POSITA in 2009-2010 timeframe would have been motivated to make modifications in the specific manner proposed. *See also* Section IV.E.4.a)(2), above.

To support these purported combinations, Respondent, through its expert Mr. Leinsing, argues that Xia 610, Wang 554, Fang 044, and Smoke Fifty-One Duo use similar structures to achieve the same endeavor, relying on cylindrical, cigarette-like structures, and also contends that all of these references are published around the same time and all from Chinese inventors. JX-0633C (Leinsing Opening Report, Appx. A) ¶¶ 5 - 8. Although these pieces of prior art relate to electronic cigarettes or vaporizers, these devices do not use similar internal components relevant

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to the challenged claims. The evidence will show also that a POSITA would not have been motivated to combine the teachings of the cited references merely because of the references being directed to the same endeavor or being released at similar times, as it is common to have countervailing teachings in contemporaneous references in a given field. Rather, the relevant test is whether the teachings of these specific references would have motivated a POSITA under the *KSR* factors to make the modifications proposed. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 4.

Respondent's expert Mr. Leinsing, proposes modifying Wang 554 in view of Xia 610, and Fang 044, and Smoke Fifty-One Duo (or a subset thereof) "as they are each also directed to the same endeavor." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 5. The evidence will show that a POSITA would have understood that although electronic cigarettes as a class of devices are all directed to providing an alternative to traditional smoking, the methods employed in electronic cigarettes can vary greatly from one device to another. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 5. Furthermore, the evidence will show that a POSITA would not have looked at another electronic cigarette device for inspiration simply because it was an electronic cigarette device. *Id.* For example, an electronic cigarette device using a combustion heating mechanism would differ greatly in design from an electronic cigarette using a resistive heating element. Similarly, an electronic cigarette having a solid fuel would be unlikely to have a compatible design with an electronic cigarette having a liquid fuel.

Instead, the evidence will show that a POSITA would look for inspiration from another electronic cigarette device if that device was tackling a specific problem in a similar compatible way. For example, if prior art device used similar puff detection sensors, a POSITA might have been motivated to use the puff sensor from one device in another device. *See* CX-2729 (Vallee

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Rebuttal Report, Appx. A-2) ¶ 6. Respondent and its expert are effectively arguing that a POSITA would have been motivated to combine references on the basis that the references are analogous art. But references being analogous art is not the standard for obviousness.

Respondent and its expert further suggest that it would have been obvious to combine the references because

> they are all use [sic] a similar device and structure to achieve the desired goals. For example, each is directed to the design and operation of handheld, cylindrical, cigarette-like, electronic cigarettes that use a heating coil within the device, powered by a battery, to vaporize liquid held within the device.

JX-0633C (Leinsing Opening Report, Appx. A) ¶ 6. However, as explained above, these devices accomplish their respective functions using greatly different designs. Indeed, several of these references are patents that have their own inventive aspects that a patent office deemed were non-obvious. This includes the arrangement of the internal structures of the devices, the electrical designs, and the specific actuation mechanisms among other issues.

Respondent's expert Mr. Leinsing argues that "none of [the references] describes any of their components as specifically designed or uniquely applicable to a particular e-cigarette design." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 7. However, as previously noted, many of these references are patents, with claims issued by a patent office as ostensibly novel and distinguishable from the prior art. None of the features that Respondent's expert, Mr. Leinsing, borrows from these references to make the proposed combinations is described as commonplace in the art. For example, Fang 044 does not describe the orientation of its heating element as commonplace and interchangeable with differently oriented heating elements. Moreover, Respondent's expert states that the components in these devices are "off the shelf" and "without the need for experimentation" yet provides no evidence that this is true. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 7.

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However, a claim is not precluded patentability for including off-the-shelf components. The arrangement of the components may make the claim patentable.

Respondent's expert argues that Xia 610, Wang 554, and Fang 044 "were also all published within the same eleven-month period and from Chinese inventors" to argue that a POSITA would have had a higher chance of locating these references. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 8. None of these factors have any relevance. Many applications were published within this same eleven-month period and many applications were also from Chinese inventors.

Respondent's expert further suggests that any of the elements from one of these references could be used in any of the other references because it would be a "substitution of known elements." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 7. However, the evidence will show that this view is incorrect because it disregards how dissimilar the described devices are among these references.

Respondent's expert further argues that the differences in the prior art references are "merely as [] different approaches" and therefore could be easily subbed in. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 10. As will be demonstrated at the hearing, this argument ignores that the references include very specific features for the specific purpose of addressing and solving problems with the respective devices. Respondent's expert's proposal to remove these features further compounds the very issues that these features are intended to address. For example, Wang 554 includes an axially aligned heating element that is in direct contact with the liquid storage element. Wang 554 further discloses a gap between the inlet and the liquid storage and an air gap running along the outside of the liquid storage. The evidence will show that the proposed modification strips out all these features without providing any meaningful benefits. CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 11.

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Finally, Respondent's expert takes issue with Complainant's First Supplemental Validity Contentions (03/12/24), arguing that the differing approaches taken by the prior art do not render them incompatible. JX-0633C (Leinsing Opening Report, Appx. A) ¶ 10-13. The evidence will show this argument to be flawed because it fails to consider each device as a whole and the import of removing and replacing such features. For example, Wang 554 discloses an axially aligned heating element in direct contact with the liquid storage without any wicking material to facilitate drawing liquid from the liquid storage to the heating element. RX-0027 (Wang 554) at .0008 ("The interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it"). Moreover, Wang 554 fails to disclose any central airflow passageway. This is completely at odds with the mechanism of Xia 610, which discloses that liquid is drawn into the airstream due to the suction force of the adult consumer. JX-0596 (Xia 610) at .0013 ("[the liquid guiding mechanism's] working process is as follows: under the action of airflow, small droplets are sucked into the other side of the heat insulation seat 902 through the spray hole 904 in the heat insulation seat 902."). The evidence will show that a POSITA would not have considered adapting Xia 610's features for inclusion in Wang 554 and vice versa because any such adaptation would require a complete and fundamental, redesign of the respective devices. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 12.

(b) The Wang 554 Grounds Do Not Render Obvious Claim 1

(i) Wang 554 Does Not Disclose Claim Limitation 1f

Claim limitation 1f of the 881 Patent recites "wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing."

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The parties have agreed that the term "an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing, wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing" means "the airflow passageway extends in a straight path through the center of the housing from a first opening on the first end to a second opening on the opposite end of the housing." Revised Joint Claim Construction Chart at 8-10, EDIS Doc. ID 812427 (Jan. 23, 2024). The ALJ adopted the parties' agreed construction. *See* CC Order at 4-5.

Respondent will be unable to show by clear and convincing evidence that Wang 554 discloses an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing. Respondent and its expert Mr. Leinsing argue that "[a] POSITA would understand that the description of the organic fiber as 'wood fiber or natural absorbent paper,' combined with its description as being wound around the heater, and 'provid[ing] a space for electric heater' means that the organic fiber 105 is a roll of paper-like material that has a generally cylindrical passageway running centrally and axially through it." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 96. The evidence will show this argument to be false at least for the following reasons.

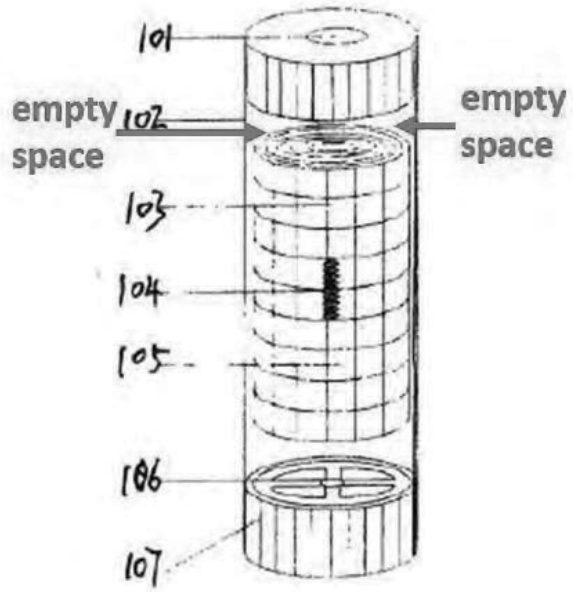
First, neither the figures nor the specification of Wang 554 provides any indication that organic fiber 105 has a hollow passageway running through its center. Contrary to Respondent's position, the evidence will show that a POSITA would have understood that being wound around the heater simply means that heater is located inside the fiber wound around it. It does not mean that the heater is also inside a channel. The evidence will show that a POSITA would have

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understood that, as shown in Wang 554's figures, the heater is secured in its place because the fiber is wound tightly around it. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 23.

Second, the evidence will show that a POSITA would have understood that by explaining that "[t]he interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it, and also provides a space for smoke produced when the tobacco extract 103 in the organic fiber 105 is heated by the electric heater 104," the inventors of Wang 554 refer to the empty space between the organic fiber and the top end of the device where smoke can accumulate and mix, not some hollow channel in the fiber. RX-0027 (Wang 554) at .0008. The following annotated figure illustrates this point. *See also* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 24.



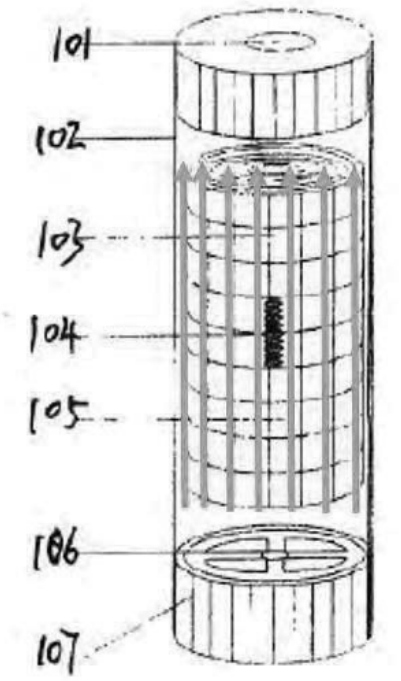
RX-0027 (Wang 554) at Fig. 3 (annotated)

In fact, if there was a central channel in the middle of fiber 105, that would mean there would be two "spaces" disclosed in the text of Wang 554 that Respondent and its expert cites. That would make the language of Wang 554 internally contradictory to the Respondent's interpretation.

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Third, the evidence will show that a POSITA would have understood that in Wang 554, air permeates through the entire volume of the cigarette holder piece in the general direction from air inlet 106 to air outlet 101, as shown in the following figure. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 26.



RX-0027 (Wang 554) at Fig. 3 (annotated)

Fourth, considering the figures of Wang 554, the evidence will show that a POSITA would also note that air travels toward the air outlet 101 via the thin channel formed by a gap between the organic fiber and the shell of the cigarette holder. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 27.

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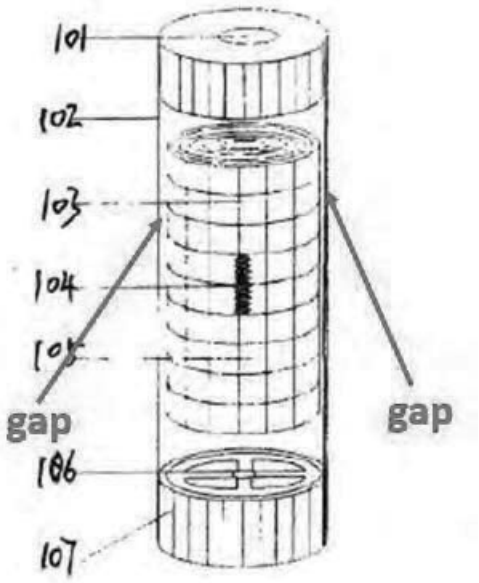


Fig. 3

RX-0027 (Wang 554) at Fig. 3 (annotated)

Respondent and its expert point to the following figure from Wang 554 for the proposition that it "show[s] … a roll with a generally cylindrical hole running centrally and axially through it." JX-0633C (Leinsing Opening Report, Appx. A) ¶ 97. The evidence will show, and as will be demonstrated at the hearing, this argument is false.

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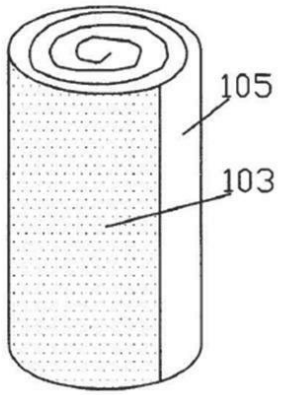


图 5

RX-0027 (Wang 554) at Fig. 5

The evidence will show that a POSITA would have understood that no cylindrical hole is present in this figure, but rather that it merely illustrates that a sheet of organic fiber is wound and soaked with tobacco extract 103. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 29. The fact that the figure omits any indication, such as a label or an in-text reference, of a central channel would have led a POSITA to conclude that no such channel is present. *Id.* Moreover, as is shown in the figures above, the inventors of Wang 554 designated all of the important features of the cigarette holder including the air inlet and outlet, the organic fiber, the heater, and the shell. If such a key element as a central airflow passageway was present in the rolled up fiber, the inventors would have included appropriate designations in the figures, or at least would have made a note of it in the patent's specification.

Moreover, to the extent Respondent will contend that Wang 554's figure depicts an "exploded" view of the device, such that the spaces above and below the organic fiber would not exist in the actual device, there is no support for that contention. Respondent may point to the used of the word "amplified" in the translation to describe Figure 2 and 3 as support for its contention

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that those figures depict an exploded view. *See, e.g.*, RX-0027 (Wang 554) at .0006 ("Fig. 2 is an amplified schematic structural diagram of a cigarette rod par tin Fig. 1; Fig. 3 is an amplified schematic structural diagram of a cigarette holder part in Fig. 1"). However, Figure 1 is not described as "amplified" (*id.*), even though it also shows spaces above and below the organic fiber in the cigarette holder. The reason for using the word "amplified" to describe Figures 2 and 3 is likely that Figures 2 and 3 show "enlarged" (*i.e.*, amplified) depictions of the parts shown in Figure 1. Therefore, a POSITA would not have understood that Figures 2 and 3 depict exploded views of the cigarette rod and cigarette holder.

Respondent may also argue that Wang 554's figures depict exploded views, because there is empty space between certain components in the cigarette rod and cigarette holder. But the absence of materials in the figures does not mean that the view are exploded. Indeed, there are several aspects of the devices described in Wang 554 that are described but omitted from the drawings. For example, Wang 554 discloses that its heater 104 is "connected with two pols of the input end 106." RX-0027 (Wang 554) at .0008. Wang 554's figures, however, do not depict these electrical connections. Thus, a POSITA would have understood that the spaces above and below the organic fiber are indeed air gaps. *See also* RX-0027 (Wang 554) at .0009 ("the airflow reaches the internal gap of the cigarette holder through the air outlet 108 of the cigarette rod and the air inlet 106 of the cigarette holder").

(ii) The Wang 554 Grounds Do Not Render Obvious Claim Limitation 1f

Claim limitation 1f of the 881 Patent recites "wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing."

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Respondent will be unable to show by clear and convincing evidence that the Wang 554 Grounds render obvious an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing. Respondent's expert, Mr. Leinsing, contends that "[t]o the extent it does not disclose this more compressed assembly, Wang 554 renders it obvious for the same reasons" and that "to the extent that it is determined that a separate structure defining the airflow passageway is needed to meet the claim limitations, a POSITA would also have been motivated to add a tube to the center of Wang '554's batting material." JX-0632C (Leinsing Opening Report) ¶¶ 281-282. The evidence will show this argument to be false for at least the following reasons.

The evidence will show that a POSITA would have understood that adding one or more tubes inside Wang 554's organic fiber batting material would increase the cost and complexity of the device as a wholly new element(s) would be added to the original design. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 32. The evidence will show that a POSITA would have also understood that by inserting a hollow rigid tube inside the organic fiber solution, storage would necessarily reduce the volume of liquid storage, and thus necessitate more frequent changes of the cartridge by the consumers, and therefore, increase costs. Moreover, the modification including a central tube and the heating coil embedded inside of it would result in less contact (or no direct contact at all) between the coil and the tobacco extract in the organic fiber. This would have a negative effect on the vaporization properties of the device and the enjoyment of the adult consumers. *Id.*

Respondent and its expert, Mr. Leinsing, state that Complainant does not explain why the modified design would have "less structural integrity for the heating element." JX-0632C (Leinsing Opening Report) ¶ 283. However, the evidence will show a POSITA would have

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understood that as the organic fiber expands and swells when it is soaked with nicotine fluid, there would be a risk of its position shifting around, and with it, the position of the heating element. This would increase the risk of damage or tearing of the heater's electrical connections, resulting in more faulty devices. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 33.

Respondent and its expert, Mr. Leinsing, argue that "the heating element could still be in direct contact with the fiber, even with a more defined airflow passageway therein." JX-0632C (Leinsing Opening Report) ¶ 283. However, neither Respondent nor its expert explain how this modification would work. The evidence will show that a POSITA would have understood that there are two possibilities. One possibility would be to have two central tubes with a heating coil placed in between them, such that the heating coil itself was not on the inside of the tube. However, because of potential for uneven swelling of the fiber as it absorbs liquid during assembly as well as the risk of one or both of the tubes shifting out of their original positions, this modification would not alleviate the risk of coil deformation and also introduce a potential defect of a twisted passageway. Another possibility would have been to wrap the coil around the outside of the central tube. However, such a modification would require a more precise manufacturing process and result in even bigger costs to the consumers, representing a large deviation from the relatively simple and inexpensive design disclosed by Wang 554's original device. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 34.

Respondent's expert, Mr. Leinsing, also contends that Complainant "ignores that the proposed modification further includes the possible addition of a tube, similar to gas pipe 8 disclosed in Fang '044." JX-0632C (Leinsing Opening Report) ¶ 283. The evidence will show, and as will be demonstrated at the hearing, it would not have been obvious to modify Wang 554

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in this way and that the proposed modification with Fang 044 is emblematic of the issues highlighted above. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 36.

Fang 044 discloses a "gas pipe," which is a rigid tube. The argument put forth by Respondent and Respondent's expert, Mr. Leinsing, fails to explain how a heating element embedded inside the gas pipe of Fang 044 would contact Wang 554's organic fiber liquid storage in which Respondent's expert proposes to place the gas pipe. The gas pipe of Fang 044 was designed for a device with a different type of solution storage, different liquid wicking mechanism, and a different heating method and would not function embedded into Wang 554 absent additional modifications, which Respondent and its expert ignore.

Respondent's expert contends that "as the air allegedly permeates the soaked fiber, it would pick up additional liquid." JX-0632C (Leinsing Opening Report) ¶ 284. Mr. Leinsing further contends that:

> The introduction of a tube or other structure defining the airflow passageway prevents this evaporative humidifying effect. Indeed, with the fiber being soaked, there is no reason to believe that air would 'permeate' it sufficiently for there to be enough airflow to a user, or that the fiber would have the capacity to accept any more liquid such that any droplets would be absorbed into it as the air passes through.

Id. The evidence will show that a POSITA would have understood these arguments to be internally inconsistent, and, as explained below, these alleged motivations would not have led a POSITA to make the proposed modifications. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 37.

First, the specification of Wang 554 does not directly address how the device deals with potential unvaporized liquid. However, Wang 554 discloses a gap between the organic fiber and the air outlet 101 where the air can mix and potentially discard the unvaporized drops. Respondent's expert proposes "abutting [the fiber] directly to the end cap" with the central channel inside the fiber. JX-0632C (Leinsing Opening Report) ¶ 281. The proposed channel would speed

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up the airflow toward the air outlet, and, with the empty space between the fiber and the air outlet eliminated, any unvaporized liquid would travel directly into the adult consumer's mouth. Therefore, Respondent's proposed modification would exacerbate, not improve, any juice-in-mouth related issues in Wang 554.

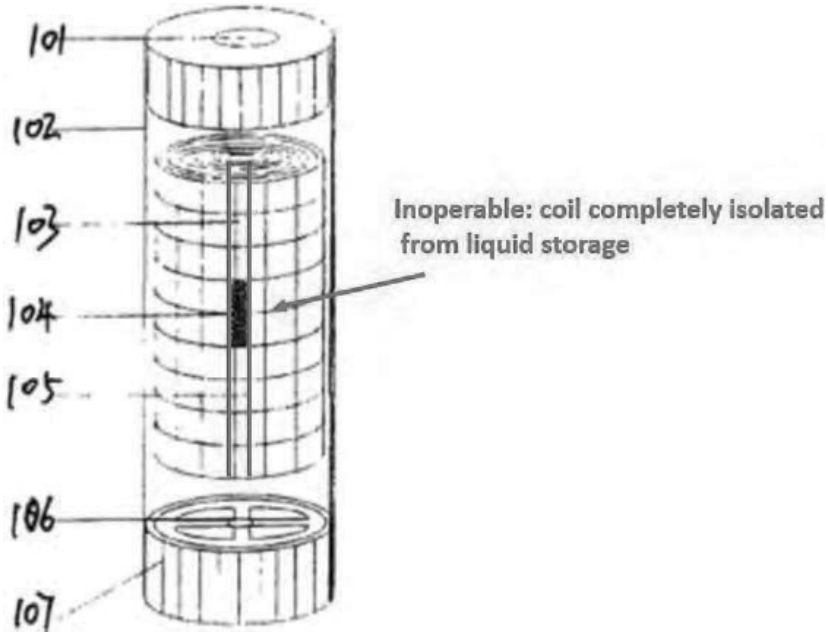
Second, Respondent and its expert, Mr. Leinsing, disregard that besides permeating the volume of the cigarette holder occupied by the organic fiber, air flows toward the outlet 101 via the thin empty space between the organic fiber and the cigarette holder's shell. As such, Respondent and Mr. Leinsing's proposed modification is purportedly to address an issue that does not actually exist.

The evidence will also show that a channel through the fiber would not prevent air from permeating through the fiber. To prevent that, the fiber would need to be encased in a container, which would add significant complexity and cost to the device. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 41.

In addition, the evidence will show that a POSITA would not have had a reasonable expectation of success in modifying Wang 554 in the manner suggested by Respondent and its expert, Mr. Leinsing. Mr. Leinsing contends that "the proposed modification is the incorporation of the tube labeled 'gas pipe 8' in Fang '044, which does not appear to include the heating chamber in which the wick and heating filament are located." JX-0632C (Leinsing Opening Report) ¶ 285. However, without the additional components utilized in Fang 044, implementation of just the gas pipe into Wang 554 would not work. For example, as explained above, the solid gas pipe of Fang 044 is incompatible with the heater of Wang 554. At the very least, the modification would result in less contact between the heater, now embedded inside the gas pipe, and the surrounding organic fiber, which is separated from the heater. Therefore, the evidence will show that a POSITA would

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not have been motivated to attempt this modification. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 42.



RX-0027 (Wang 554) at Fig 3 (annotated)

Respondent's expert contends that "to the extent those components would need to be included while including the gas pipe, they would be included as disclosed in Fang '044." JX-0632C (Leinsing Opening Report) ¶ 285. However, the evidence will show that a POSITA would have understood that this would essentially amount to replacing all of the structure Wang 554 with that of Fang 044. Respondent, through its expert, argues that "the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." JX-0632C (Leinsing Opening Report) ¶ 285. However, the evidence will show, and as will be demonstrated at the hearing, based on the scale of modifications with little to no benefits, a POSITA would not have been motivated to pursue the proposed modification. *See* CX-2729 (Vallee Rebuttal Report, Appx. A-2) ¶ 43.

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