



Quality Insights

Patentcloud Quality Insights Annotation Report

Shenzhen Smoore Technology Limited v. Solis Supply et al.

ITC -337-3571 (Pending Institution)

Focus on: U.S. Pat. No. 10,357,623

Filing date: Oct. 04, 2021

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Map claims to specification and file wrapper

Map claims to specification - '623

Which claim terms are or are not in the specification?

33 Terms Identified in This Claim
Click to Select Terms

Select Text

Highlight text from within the claim with your cursor and click on the tooltip "Select Terms" to find references in the Specification.

Claim# 1

The following claim terms are not literally supported by the specification, which may have rooms for different interpretations.
"assembly", "directly"

An **atomizer** assembly, comprising:

a container comprising a **liquid storage cavity** for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity,

the **liquid storage cavity** comprising a **liquid outlet**,

an **absorbent element** being attached to an outside surface of the liquid outlet to cover the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly;

and an atomizer connected to a side of the absorbent element away from the liquid outlet to atomize liquid permeating through the absorbent element by an **electric heating element** wherein

the container further comprising an outlet-defining element positioned at the liquid outlet,



Claim Analysis finds these terms in the spec:
"liquid storage cavity", "liquid outlet", "absorbent element", "electric heating element," as well as other terms that are highlighted in red.

Map claims to specification - '623

Which claim terms are or are not in the specification?

33 Terms Identified in This Claim
Click to Select Terms

Select Text

Highlight text from within the claim with your cursor and click on the tooltip "Select Terms" to find references in the Specification.

Claim# 1

The following claim terms are not literally supported by the specification, which may have rooms for different interpretations.
"assembly", "directly"

An **atomizer assembly**, comprising:

a container **liquid storage cavity** for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity,

the **liquid storage cavity** comprising a liquid outlet,

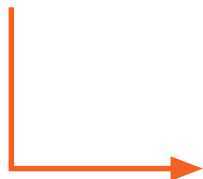
an absorbent element being attached to an outside surface of the liquid outlet to cover the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly.

Review the selected claim element and see how it is defined in the patent specification and related figures.

Selected elements of '623 Claim 1

Selected elements of Claim '1 in Spec

Figures of '623



Select Text

liquid storage cavity

The selected clause includes the following keywords:

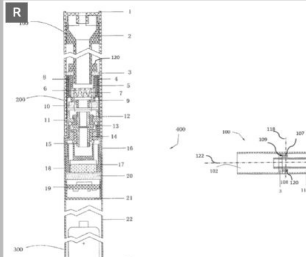
- storage** (11)
- liquid** (55)
- cavity** (11)

Content

is cooled into water, thus avoiding the atomized **liquid** from affecting a taste of the **liquid**. The **liquid** tank 2 is received in the inhalation element 1 and contacts a sidewall of the inhalation element 1 with one end. The inhalation element 1, the **liquid** tank 2, the outlet-defining element 120, and the absorbent element 3 cooperatively define a **liquid storage cavity** 110 to receive the **liquid**. The **liquid storage cavity** 110 has the **liquid** outlet 107. The outlet-defining element 120 is positioned at the **liquid** outlet 107, defines the shape of the opening of the **liquid** outlet 107, and reduces the size or sizes of the **liquid** outlet 107. For instance, in the embodiment of FIG. 2, the outlet-defining element 120 is a flange-shaped structure extending into the **liquid storage cavity** 110, the **liquid** outlet 107 is reduced to a tubular passage by the outlet-defining element 120, to such a degree that the area of the

Map claims to specification and Complaint - '623

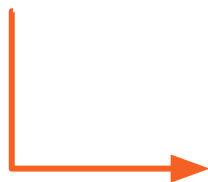
Does the allegedly infringing product element fall within or outside the patent's scope?

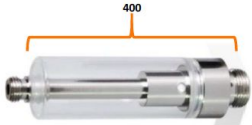
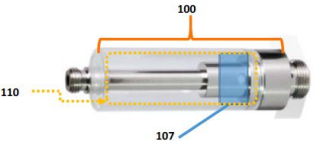
| Select Text | Content |
|---|---|
| <p>liquid storage cavity</p> <p>The selected clause includes the following keywords:</p> <ul style="list-style-type: none"> storage (11) liquid (55) cavity (11) | <p>is cooled into water, thus avoiding the atomized liquid from affecting a taste of the liquid. The liquid tank 2 is received in the inhalation element 1 and contacts a sidewall of the inhalation element 1 with one end. The inhalation element 1, the liquid tank 2, the outlet-defining element 120, and the absorbent element 3 cooperatively define a liquid storage cavity 110 to receive the liquid. The liquid storage cavity 110 has the liquid outlet 107. The outlet-defining element 120 is positioned at the outlet 107, defines the shape of the opening of the outlet 107, and reduces the size or sizes of the liquid outlet 107. For instance, in the embodiment of FIG. 2, the outlet-defining element 120 is a flange-shaped structure extending into the liquid storage cavity 110, the liquid outlet 107 is reduced to a tubular passage by the outlet-defining element 120, to such a degree that the area of the</p>  |

With the claim scope interpretation from **Claim Analysis**, verify your findings against the complaint.

Answer the question:

Does the alleged invention element fall within or outside the patent's scope?



| Exhibit 20 | |
|---|--|
| Representative Claim Chart of Infringement of the claims 1, 2, 3, 5, & 6 in U.S. Patent No. 10,357,623 by sample Solis Supply product | |
| Claim 1 US 10,357,623 | Corresponding views of sample Solis Supply product |
| An atomizer assembly [400], comprising: |  |
| a container [100] defining a liquid storage cavity for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity [110], the liquid storage cavity comprising a liquid outlet [107]. |  |

Map claims to the file wrapper - '623

Which claim terms are in the file wrapper(i.e. examiner's opinion) ?

Disclosure Rate by Prior Art

| Claims | Disclosure by Single Reference | | Disclosure by Multiple References | | Claim# 1 |
|--------|--------------------------------|------------|-----------------------------------|------------|--|
| | Prosecution History | Post-Grant | Prosecution History | Post-Grant | |
| #1 | 78% | 0% | 78% | 0% | An atomizer assembly, comprising: a container defining a liquid storage cavity for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity, the liquid storage cavity comprising a liquid outlet, an absorbent element being attached to an outside surface of the liquid outlet to cover the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly; and an atomizer connected to a side of the absorbent element away from the liquid outlet to atomize liquid permeating through the absorbent element by an electric heating element, wherein the container further comprising an outlet-defining element positioned at the |
| #9 | 72% | 0% | 72% | 0% | |

From **Claim Insights**, review how the asserted claims were disclosed by the prior art found by the examiner during prosecution and post-grant proceedings.

A higher percentage means more claim elements were disclosed by the prior art.

Claim Insights Summary Table > Claim Table (Claim# 1) | Select A Claim 1 2 3 4 5 6 7 8 9 switch between claims

How is each claim element disclosed by cited prior art? Click numbers to find detailed comparison.

The percentage "%" indicates how many keywords in an element being disclosed by a specific references. [Click](#) to find comprehensive explanation of calculation.

All Prosecution history Post-Grant Responded prior arts only

| Claims | Prior Art Ref. (8) | | | | | | | |
|--|--------------------|----------------|----------------|-----------|----------------|-----------|-----------|-----------|
| | US2008/0092912 | US2006/0191546 | US2009/0126745 | US0191546 | US2009/0095311 | US9022026 | US4083372 | US9427536 |
| #1.01 (N/A) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| #1.02 A C (100%) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| #1.03 A C (100%) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| #1.04 A C (100%) | 100% | 62% | 62% | 62% | 100% | 37% | 37% | 37% |

Disclosure Rate by Prior Art

Map claims terms to the file wrapper - '623

Why was this patent granted? Which claims were amended and how did the scope change?

| Claims | Prior Art Ref. (s) | | | | | | | |
|------------------|--------------------|----------------|---------------|------------|----------------|-----------|-----------|-----------|
| | US2008/0092912 | US2006/0191546 | US2009/013745 | US20191546 | US2009/0095311 | US9222026 | US4683372 | US9427358 |
| #1.01 (N/A) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| #1.02 (A) (100%) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| #1.03 (A) (100%) | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| #1.04 (A) (100%) | 100% | 62% | 62% | 62% | 100% | 37% | 37% | 37% |
| #1.05 (A) (100%) | 100% | 100% | 62% | 100% | 100% | 0% | 0% | 0% |

All of the limitations of this asserted claim element in '623 were 62% known by (US0191546), Han(US2009/0095311), Robinson(US2008/0092912) and Takano(US2006/0191546).

Answer the question:

Why was this patent granted?

Claim Insights Summary Table > Claim Table (Claim# 1) > Claim Element Page (Claim# 1.04) > US0191546 | Select A Claim (1) (2) (3) (4) (5) (6) (7) (8) (9)

Side-by-side comparison; Claim terms not found may imply the reasons for patentability.

1.01 1.02 1.03 1.04 1.05 1.06 1.07 1.08 Find 1 Result(s) Find More Result(s) Filter Clear All

Rejection from Examiner

Prior Art Ref. [A] [C] [US0191546] Han [US2009/0095311] Robinson [US2008/0092912] Takano [US2006/0191546]

20190315-CTFR Prosecution History 35 U.S.C. § 103

Rejection

3.

claims 1, 3, and 5 is/are rejected under pre-aiia 35 u.s.c. 103(3) as being unpatentable over robinson et al. (zoos/0092912) in view of takano et al. (zoos/0191546) and han (2009/0095311).

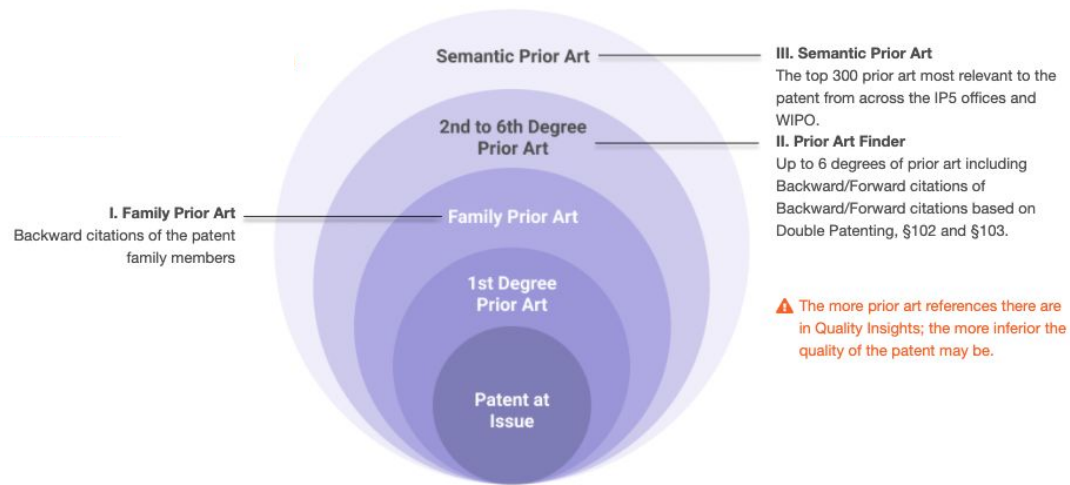
regarding claim 1, robinson shows an atomizer assembly (see fig.1 for example) which includes a container defining a liquid storage cavity 85 for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity (see para.0057 which states that 'the mixture of aqueous extract of tobacco within water can be used as such' i.e. no liquid storage medium; para.0058 which states that 'the tobacco extract can be mixed with generally liquid or fluid substances' and that the such mixtures can be carried by a liquid storage medium such as a solid substrate 'or can be contained within suitable containers, vials, cartridges, or the like' and thus the liquid storage substrate is optional and the cavity can be used without such media; para.0062 discloses that the material 'can be contained within a container in liquid form, or soaked within absorbent fibrous materials or sponge-like materials' and thus a liquid storage-medium is not required and the cavity can hold only the liquid to be atomized), the container including an inhalation element 20 and a liquid tank (see para.0057-0058 and 0062; see robinson fig.1 liquid tank 85 defining the liquid storage cavity, inhalation element 20 shown in fig.1), and an absorbent element (see fig.1 and para.0085, element 72 includes

20190508-REM

In this response, claims 1-6, 8, 14-16, and 19 are cancelled, without prejudice; claims 7 and 20 have been rewritten into independent form; and claims 9-13, and 17-18 remain unchanged. the amendments are in compliance with 37 cfr 1116 regarding amendments for after final action. no new matter is added, claims 1, 3, and 5 is/are rejected under pre-aiia 35 u.s.c. 103(a) as being unpatentable over robinson et al. (2008/0092912) in view of takano et al. in response, applicant has cancelled claims 1, 3 and 5, without prejudice. claim 2 is rejected under pre-aiia 35 u.s.c. 103(a) as being unpatentable over robinson and takano as applied to claim 1, and further in view of han (2009/0126745).

Remark from Applicant

How does Quality Insights generate prior art?



Prior Art Finder

Prior Art Finder for '623

Review cited and citing patents of '623 from the first to the sixth degree

Filter by:

- Applicability
- Legal Basis (§102 or §103)
- Patent Office
- Legal Status

1st Degree Art
5

2nd Degree Art
72

N Degree Art
85

N Degree Art
Extend forward/backward citations from the Second Degree Art

[Discover prior art's similarity with claim chart format in seconds !](#)

KEEP Mode

Ranked By : Legal Basis (§102 first) |

| | | | | Patent No. | Title | Legal Status | Appl. Date | Pub./Issue Date | Assignee (Std) | Applicability | |
|---|--------------------------|---|---|---------------------------------|--------------------------------------|-----------------|------------|-----------------|----------------------------|-----------------------|--|
| US10357623B2 ^ 1st Degree (5) US20080092912A1 US4083372A US9022026B2 US9427536B2 US20190282770A1 | <input type="checkbox"/> | 1 | ✎ | US9801416B2 | ⊗ Tobacco-containing smoking article | Active | 2014-10-29 | 2017-10-31 | RAI STRATEGIC HOLDINGS ... | (Pre-AIA) § 102(e)(1) | |
| | <input type="checkbox"/> | 2 | ✎ | US9901123B2 | ⊗ Tobacco-containing smoking article | Active | 2016-10-05 | 2018-02-27 | RAI STRATEGIC HOLDINGS ... | (Pre-AIA) § 102(e)(1) | |
| | <input type="checkbox"/> | 3 | ✎ | US20180271169A1 | ⊗ ELECTRONIC CIGARETTE | PGPub - Granted | 2018-05-28 | 2018-09-27 | FONTEM HOLDINGS 1 BV | (Pre-AIA) § 102(e)(1) | |
| | <input type="checkbox"/> | 4 | ✎ | US8156944B2 | ⊗ Aerosol electronic cigarette | Active | 2007-05-15 | 2012-04-17 | RUYAN INVESTMENT HOLD... | (Pre-AIA) § 102(e)(1) | |
| v 2nd Degree (20) v 3rd Degree (20) v 4th Degree (20) v 5th Degree (20) 6th Degree | 6th Degree List | | | | | | | | | | |

Up to 6th Degree
Prior Art List

Family Prior Art

Family Prior Art of '623

Review prior art cited by and cited against the family counterparts when available

Simple Family

5

Backward Citation: Patent

17

Backward Citation: Non-Patent Literature

0

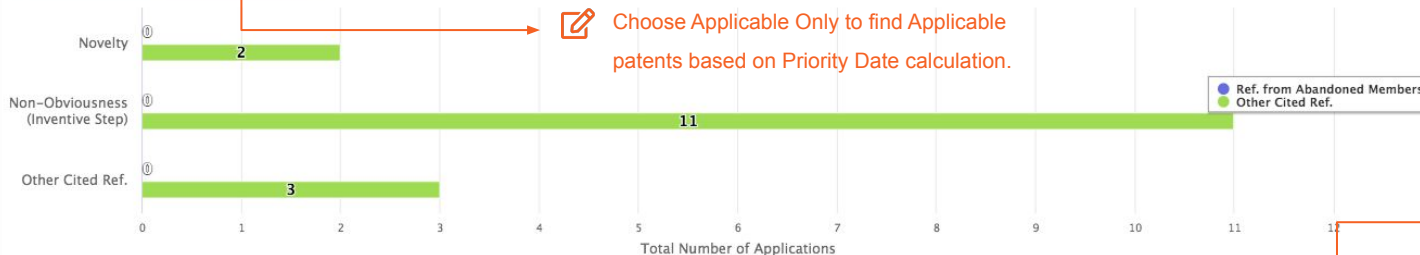
Backward Citation: Patent

Categorized to indicate relevance; You can start from applicable references cited as novelty prior art

Click on Cited Patents for Potential Prior Art

All References (17)

Applicable Only (14)



Choose Applicable Only to find Applicable patents based on Priority Date calculation.

Prior Art List

KEEP Mode

Ranked By : Appl. Date



| <input type="checkbox"/> | | # | Patent No. | Title | Legal Status | Appl. Date | Pub./Issue Date | Assignee (Std) | Applicability |
|--------------------------|--|---|----------------------------|------------------------------|--------------|------------|-----------------|-------------------|---|
| <input type="checkbox"/> | | 1 | US4083372A | Cigarette-simulating inhaler | Expired | 1976-05-24 | 1978-04-11 | BODEN ROBERT | (Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | | 2 | US4171000A | Smoking device | Expired | 1977-03-23 | 1979-10-16 | UHLE KLAUS P | (Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | | 3 | US5159940A | Smoking article | Expired | 1988-07-22 | 1992-11-03 | PHILIP MORRIS INC | (Pre-AIA) § 102(a) (Pre-AIA) § 102(b) (Pre-AIA) § 102(e)(2) |

Semantic Prior Art

Semantic Prior Art of '623

Review potential prior art ranked by concept similarity

Across IP5 and WIPO thanks to Patentcloud's proprietary algorithm

Most Relevant IP5 & WO 300 prior art references based on **Semantic Similarity** among the first claims and abstracts. [Change Scope](#) Select claim text or enter the desired text/keywords

Discover prior art's similarity with claim chart format in seconds. Prior art references found (within the designated scope) that are deemed as having high semantic similarity will be starred with a ★

KEEP Mode 103 are of high semantic similarity

Ranked By : Relevance

| <input type="checkbox"/> | Ranking | Patent No. | ★ | Title | Legal Status | Appl. Date | Pub./Issue Date | Assignee (Std) | Applicability |
|--------------------------|---------|---------------------------------|---|----------------------------------|-----------------|------------|-----------------|--------------------------|-----------------------|
| <input type="checkbox"/> | 1 | US8375957B2 | ★ | Electronic cigarette | Active | 2007-05-15 | 2013-02-19 | RUYAN INVESTMENT HOLD... | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 2 | US10588353B2 | ★ | Electronic cigarette | Active | 2018-02-22 | 2020-03-17 | FONTEM HOLDINGS 1 BV | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 3 | US8893726B2 | ★ | Electronic cigarette | Active | 2013-02-26 | 2014-11-25 | FONTEM HOLDINGS 1 BV | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 4 | US20130213420A1 | ★ | ELECTRONIC ATOMIZATION CIGARETTE | PGPub - Granted | 2013-02-26 | 2013-08-22 | RUYAN INVESTMENT HOLD... | (Pre-AIA) § 102(e)(1) |
| <input type="checkbox"/> | 5 | US8205622B2 | ★ | Electronic cigarette | Active | 2009-05-07 | 2012-06-26 | PAN GUOCHENG | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 6 | US8393331B2 | ★ | Electronic atomization cigarette | Active | 2010-11-11 | 2013-03-12 | RUYAN INVESTMENT HOLD... | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 7 | US9326548B2 | ★ | Electronic cigarette | Active | 2014-04-03 | 2016-05-03 | FONTEM HOLDINGS 1 BV | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 8 | US20210106053A1 | ★ | ELECTRONIC CIGARETTE | Exam. | 2020-12-21 | 2021-04-15 | FONTEM HOLDINGS 1 BV | (Pre-AIA) § 102(e)(1) |
| <input type="checkbox"/> | 9 | US8365742B2 | ★ | Aerosol electronic cigarette | Active | 2011-04-05 | 2013-02-05 | RUYAN INVESTMENT HOLD... | (Pre-AIA) § 102(e)(2) |
| <input type="checkbox"/> | 10 | USRE47573E1 | ★ | Electronic cigarette | Active | 2016-03-24 | 2019-08-20 | FONTEM HOLDINGS 1 BV | (Pre-AIA) § 102(e)(2) |

Semantic Prior Art of '623

Review potential prior art ranked by concept similarity

US10357623B2 [↗](#)

Atomizer and electronic cigarette using the same

- Overview
- History
- Claim Analysis
- Claim Insights
- Family Prior Art
- Prior Art Finder
- Semantic Prior Art**
- File Wrapper Search

[About Semantic Prior Art](#)

Semantic Prior Art

Most Relevant IP5 & WO 300 prior art references based on [Semantic Similarity](#) within the scope below. [Reset to Default](#)

Enter text to start searching for semantic prior art (English only)

+ Add text from claims

Submit

[Discover prior art's similarity with claim chart format in se](#)

Add text from claims ✕

Select A Claim
1
2
3
4
5
6
7
8
9

An atomizer assembly, comprising: a container defining a liquid storage cavity for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity, the liquid storage cavity comprising a liquid outlet, an absorbent element being attached to an outside surface of the liquid outlet to cover the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly; and an atomizer connected to a side of the absorbent element away from the liquid outlet to atomize liquid permeating through the absorbent element by an electric heating element, wherein the container further comprises an

Add



adding text from claims to find more related Prior Art

Comparison tools

Prior Art Comparison (claim chart format)

What does this prior art say about the critical elements?

→ Disclosure Rate of Prior Art

1.01
1.02
1.03
1.04
1.05
1.06
1.07
1.08

Find **51** Result(s) | Disclosure Rate: 50%

| Claim Element | US10588353B2 Content |
|---|---|
| <div style="margin-bottom: 10px;"> <p>#1.04 an absorbent element being attached to an outside surface of the liquid outlet to cover the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly;</p> </div> <div> <p>Keyword List ⓘ</p> <ul style="list-style-type: none"> 👁 liquid (93) FW PA 👁 liquid storage (60) FW PA 👁 flowing (23) FW PA <li style="margin-left: 20px;">flows <li style="margin-left: 20px;">flow 👁 surface (8) FW PA <li style="margin-left: 20px;">cover (0) FW <li style="margin-left: 20px;">absorbent element (0) FW <li style="margin-left: 20px;">cavity (0) FW </div> | <div style="margin-bottom: 10px;"> <p>Abstract</p> <p>An atomizing electronic cigarette has an atomizing core component and a liquid storage component, including an electric heater. The electric heater may have a through hole aligned with a channel passing through the liquid storage component. The cigarette can heat and uniformly vaporize liquid from the liquid storage component, with the user inhaling the vaporized liquid. The vapor generated by the atomizing process may be cooled as it flows through the channel.</p> </div> <div> <p>Claims</p> <p>Claim# 1 An electronic cigarette, comprising: a first housing containing a power device; a second housing containing an atomizer and providing liquid storage containing liquid and an unobstructed channel through the liquid storage; the atomizer in the second housing, the atomizer including a wire coil and a liquid permeating component, the liquid storage around the atomizer; the liquid permeating component having a first axis, the liquid permeating component in contact with the wire coil along the first axis, and the liquid permeating component in contact with liquid from the liquid storage; the unobstructed channel through the liquid storage extending from the atomizer to an outlet at an end of the second housing, the channel surrounded by the liquid storage; an air inlet for allowing air into the second housing; an air flow path from the air inlet through the atomizer and the channel to the outlet; a first electrode in the first housing; a second electrode in the second housing, the second electrode adapted to electrically connect with the first electrode when the first housing is connected to the second housing.</p> <p>Claim# 10 The electronic cigarette of claim 1 wherein the liquid permeating component comprises ceramic.</p> <p>Claim# 11 The electronic cigarette of claim 1 wherein the liquid permeating component comprises quartz fiber, aramid fiber, common fiber, paper, fabric or non-woven fabric material.</p> </div> |

Answer the question:

What does this prior art say about the Claim elements: “liquid storage” ?

Discover prior art similarity with keywords (includes keyword stemming) mapped to the selected prior art reference Abstract, Claims, and Specification.

Source: Quality Insights

InQuartik's Proprietary and Copyright©2021. All rights reserved. 18

Prior Art Comparison (sample output)

Easily generate a table like below

| Claim | | Claim-Term Interpretation | Semantic Prior Art - '353 | 3rd Degree Citation Prior Art - B |
|-------|--|---------------------------------|---------------------------|-----------------------------------|
| 1 | An atomizer assembly, comprising: | Refer to Claim Analysis results | N/A | ..... |
| | a container defining a liquid storage cavity for receiving a liquid and no liquid-storage medium contained in the liquid storage cavity, | | 33% | ..... |
| | the liquid storage cavity comprising a liquid outlet, | ..... | 33% | ..... |
| | an absorbent element being attached to an outside surface of the liquid outlet to cover the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly; | ..... | 50% | ..... |
| | and an atomizer connected to a side of the absorbent element away from the liquid outlet to atomize liquid permeating through the absorbent element by an electric heating element, wherein | ..... | 57% | |
| | the container further comprising an outlet-defining element positioned at the liquid outlet, | ..... | 0% | ..... |
| | and the absorbent element attached to an outside surface of the outlet-defining element and covering an opening of the liquid outlet for preventing the liquid received in the liquid storage cavity from flowing out of the liquid storage cavity directly; | ..... | 40% | |
| | wherein the outlet-defining element defines a shape and reduces a size of the liquid outlet. | ..... | 20% | |

System-identified keywords and key phrases
(highlighting of other keywords is available)

Results from claim to specification
and file wrapper mapping

Results from prior art comparison by
claim element

Prior Art downloads

Prior Art downloads

Select all

Export

Export

| # | Patent No. | Title |
|-------------------------------------|-----------------|--|
| <input checked="" type="checkbox"/> | 1 CN1247662A | Dual use spea |
| <input checked="" type="checkbox"/> | 2 EP0998105B1 | Mobile teleph |
| <input checked="" type="checkbox"/> | 3 JPH09-036932A | EXTERNAL R |
| <input checked="" type="checkbox"/> | 4 JPH11-055358A | MOBILE RAD |
| <input checked="" type="checkbox"/> | 5 US5317622 | Ringling circuit for use in a telephone set f... |



Download patent data in Excel or PDF format for Family Prior Art, Second Degree Prior Art, and/or Semantic Prior Art.

Prosecution and PTAB History

Key Events

Key Events - '623

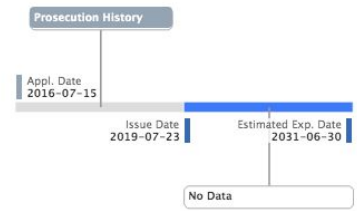
1 Prosecution & 0 Post-Grant*

| | | |
|--|---|--|
| Event History 1 | Family Status 5 Applications | Prior Art Status 384 Applications / 0 NPL References |
|--|---|--|

Event History | 1 Prosecution History / 0 Post-Grant

of Family Counterparts and Legal Status
of Highly Relevant Prior Art References

Validity challenges to a patent in its prosecution history and post-grant events



| Legend | |
|---------------|----------------------|
| Document Code | Document Description |
| CTFR | Final rejection |
| CTNF | Non-final rejection |
| CLM | Claims |
| REM | Remarks |

Timeline of Prosecution:



*This complaint/petition is still pending institution. After institution, this case will appear under the Key Event tab.

Key Events - '623

Prosecution History

15/211032 Prior Art Ref. | 6 Ref.

Check prior art cited and the legal basis of these challenges

Double Patenting | 4 Ref.

[US4083372](#)
Boden

[US20080092912](#)
Robinson

[US9022026](#)

[US9427536](#)

§ 102 | 1 Ref.

[US20080092912](#)
Robinson

§ 103 | 7 Ref.

[US20080092912](#) (1st)
Robinson

[US9022026](#) (1st)

[US9427536](#) (1st)

[US20090126745](#)
Hon

[US4083372](#)
Boden

[US20060191546](#)
Takano

[US20090126745](#)
Han

Summary of 15/211032 History | 7 Event(s)

Clickable events for original OAs and their OCR version when available.

Direct links to Grounds,

Claims Highlighted and Prior Art Details

Data Last Updated on: 2021-09-12

| Descriptions (Code) | Date | Prior Art Ref. |
|--|------------|--|
| Notice of Allowance (NOA) | 2019-05-23 | |
| Applicant Arguments/Remarks Made in an Amendment (REM) Claims (CLM) | 2019-05-08 | |
| Final Rejection (CTFR) | 2019-03-15 | Grounds 13 ^ |
| Legal Basis | Claims | Prior Art Ref. |
| 35 U.S.C. § 103 | claim 16 | US9022026 (1st) Robinson US20080092912 Boden US4083372 |

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| <input type="checkbox"/> Applicant Arguments/Remarks Made in an Amendment (REM) | Applicant | 2014-02-07 |
| <input type="checkbox"/> Non-Final Rejection (CTNF) | USPTO | 2013-11-07 |

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flexible substrate (1) + Add new keyword

US9226311B2 - CTNF (2015-03-19)

13/284,674 6 / 18 - 90% +

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Application/Control Number: 13/284,674
Art Unit: 2867

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the touch panel taught by Grant by adding drive or sense electrodes made of flexible conductive material as taught by Hotelling since the sensor traces provide level shifting from a low voltage level to a higher voltage level, thus providing a better signal-to-noise ratio for improved noise reduction purposes while the drive traces provide shielding for the sense traces.

Neither Grant nor Hotelling specifically teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection.

However, Gray does teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection (Fig. 2; [0063]: **A number of conductors forming rows and columns of a conductive pattern (e.g., indium tin oxide (ITO)) may be deposited on a substrate composed of polyester or other material on one or more layers of the touchscreen... the row and column oriented conductors may be disposed on the same layer...**; See also Miller US 5,089,672; Col. 2, lines 11-16; Col. 5, lines 1-20; Col. 5, lines 61-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Grant and Hotelling by including the conductive lines (rows and columns) taught by Gray for the purpose of "providing paths for signals traveling through the touchscreen" (See Gray; Abstract).

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hereinafter Grant) in View of Hotelling et al. US 2008/0158183 A1 (previously cited and hereinafter Hotelling), in further View of Gray et al. US 2010/00451614 (previously cited and hereinafter Gray) and in further View of Frey et al. US 2009/0219257 (Newly cited and hereinafter Frey).

Regarding claim 1, Grant does teach an apparatus (Abstract) comprising: a substantially flexible substrate (Abstract: flexible touch sensitive surface); and a touch [0004], [0005], [0006], [0006], [0022], [0023], [0027], and [0071], e.g., flexible surface, flexible circuit, and capacitive touch [0004] which must be conductive to receive user input) disposed on the substantially flexible substrate (see at least Figs. 1A-C; [0009-0011], configured to bend with the substantially flexible substrate (Figs. 1A-1C, 3 and the corresponding descriptions; [0003]).

Grant does not specifically teach the touch [0004] comprising drive or sense electrodes made of flexible conductive material.

However, Hotelling does teach a touch [0004] (Fig. 2a, 5 and the corresponding descriptions, and the Summary of the Invention, i.e., a touch [0004] comprises of row and column traces made of copper) comprising drive or sense electrodes (see at least Figs. 1 and 2a; [0008; 0030-0033]; claim 9; sense traces formed on a first side of a dielectric substrate; and drive traces formed on a second side of the substrate) made of flexible conductive material ([0008]; traces made of copper or other highly conductive metals running along the edge of the substrate).

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Art Unit: 2867

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the touch panel taught by Grant by adding drive or sense electrodes made of flexible conductive material as taught by Hotelling since the [0004] traces provide level shifting from a low voltage level to a higher voltage level, thus providing a better signal-to-noise ratio for improved noise reduction purposes while the drive traces provide shielding for the sense traces.

Neither Grant nor Hotelling specifically teach wherein the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection.

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