Patent Owner Fontem Holdings 1 B.V.'s Demonstrative Exhibits

R.J. Reynolds Vapor Company
v.
Fontem Holdings 1 B.V.,

Case IPR2016-01268
U.S. Patent No. 8,365,742

Oral Argument
October 10, 2017

742 PATENT CLAIMS

2. An electronic cigarette, comprising:

a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly;

a liquid storage component in the housing;

with the housing having one or more through-air-inlets;

the atomizer assembly including a porous component supported by a frame having a run-through hole;

a heating wire wound on a part of the porous component in the path of air flowing through the run-through hole; and

the porous component substantially surrounded by the liquid storage component.

Ex. 1001

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268

MEYST DECLARATION ¶ 96

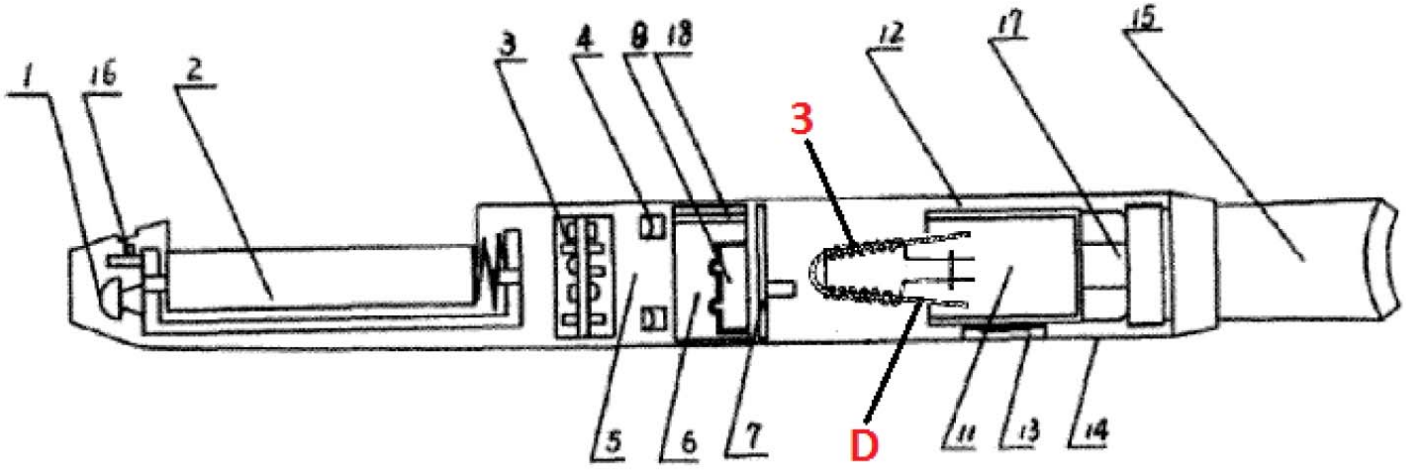

FIG. 1
(modified)

Ex. 2015

STURGES DEPOSITION, p. 160

Q Why wouldn't one skilled in the art simply just take the wick with the coil wrapped around the wick of Whittemore and insert that wick into Hon's liquid supply as opposed to retaining all the other features of the atomizer of Hon?

MR. MALLIN: Objection, form.

MR. HAMILTON: Q And to clarify, by Hon, I mean Hon '043.

A Because then we wouldn't have -- In a simple substitution, one would remove the -- one would have to remove the atomizer completely, and that's not what's proposed.

Ex. 2016

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268

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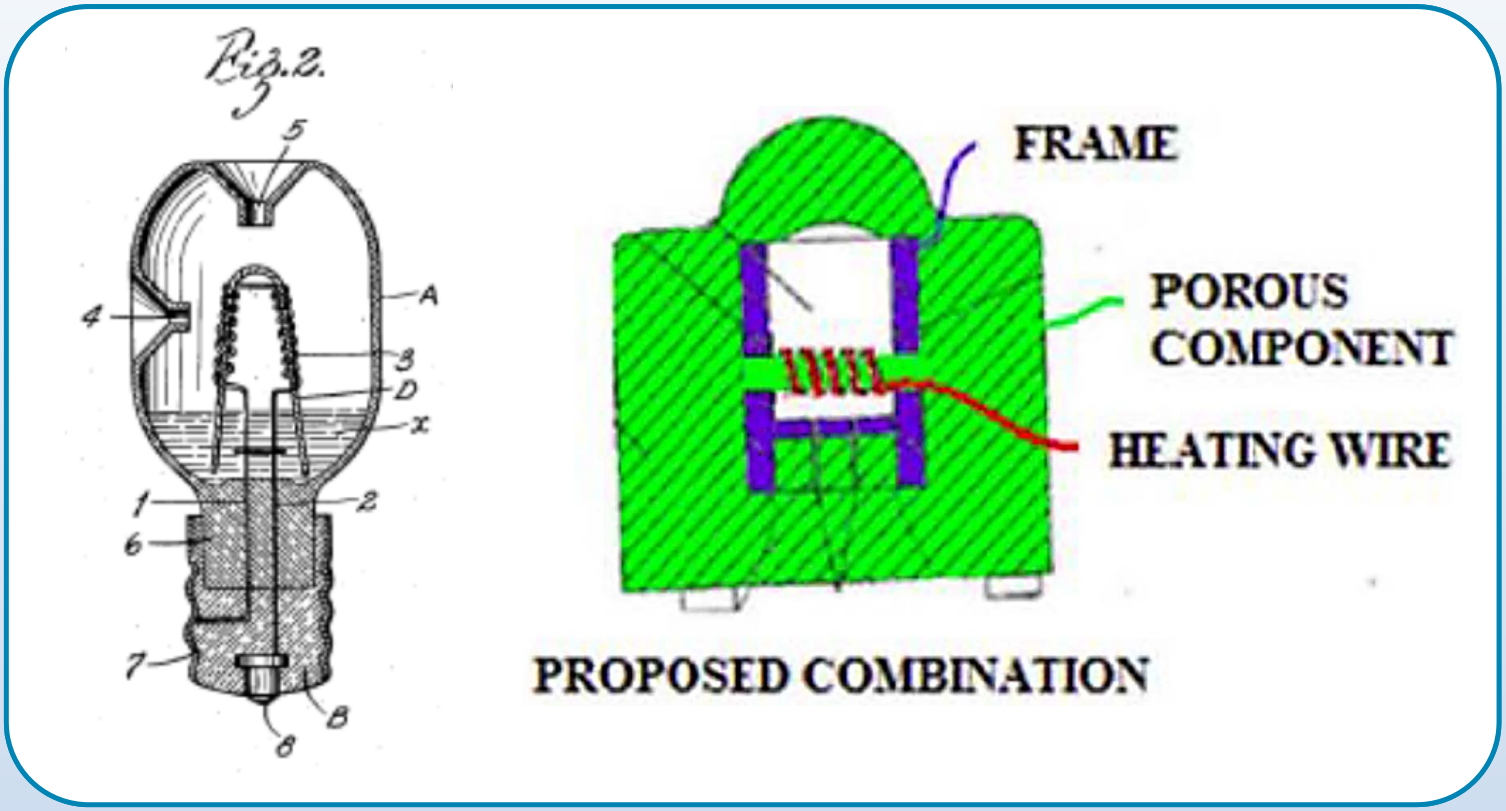
5

Ex. 2016

PROPOSED COMBINATION



Ex. 1004
Ex. 1027 ¶ 50

HON 043, pp. 10-11

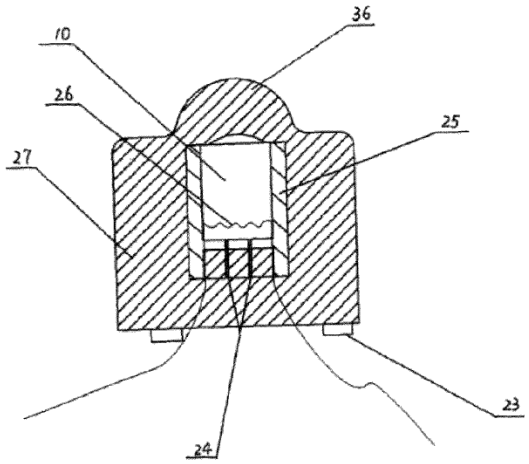


FIG. 6

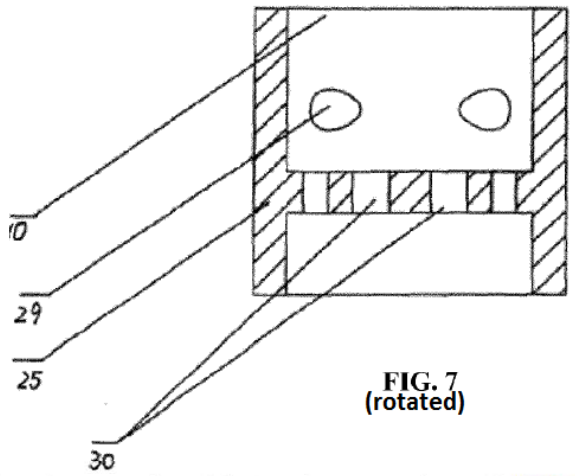


FIG. 7
(rotated)

liquid separator 7, and flows into the atomization cavity 10 in the atomizer 9. The high speed stream passing through the ejection hole drives the nicotine solution in the porous body 27 to eject into the atomization cavity 10 in the form of droplet, where the nicotine solution is subjected to the ultrasonic atomization by the first piezoelectric element 23 and is further atomized by the heating element 26. After the atomization, the large diameter droplets stick to the wall under the action of eddy flow and are reabsorbed by the porous body 27 via the overflow hole 29, whereas the small diameter droplets float in stream and forms aerosols, which are sucked out via the aerosol passage 12, gas vent 17 and mouthpiece 15. The solution storage porous body 28 in the liquid-supplying bottle 11 will

Ex. 1003 at 10-11

MEYST DECLARATION

37. "Atomize" means to convert liquid into small droplets. New Oxford American Dictionary (2001) (Ex. 2017). The atomizer in Hon '043 accomplishes this in more than one way. First, the high speed stream of air passing through ejection holes 24 or 30 causes liquid to eject from porous body 27 into cavity 10 in the form of droplets. Hon '043 at 10 (Ex. 1003). Thus, liquid is already atomized by the ejection holes as it enters the atomization cavity, which by itself is essentially a plain-orifice atomizer. *See* FLUENT 6.3 User's Guide at 22–47 (Ex. 2024). Second, the atomizer may include a piezoelectric element 23 outside to atomize the liquid via ultrasonic vibrations. Hon '043 at 10–11 (Ex. 1003). Third, the airstream may be focused directly at a piezoelectric element 35 inside the cavity. Hon '043 at 11 (Ex. 1003). Fourth, a heating element 26, which may be a "wire" or a "sheet," can be included in the cavity to "further atomize" the liquid droplets. Hon '043 at 9–11 (Ex. 1003). The heating element and both piezoelectric elements are optional. Hon '043 at 11 (Ex. 1003).

Ex. 2015

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MEYST DECLARATION

102. However, in my opinion, Dr. Sturges's concern about a slipstream overlooks the fundamental nature of Hon '043's atomizer. The atomizer disclosed in Hon '043 does not rely primarily on heat to atomize liquid. Indeed, Hon '043 teaches that the heating element can be omitted entirely. *See* Hon '043 at 11, Fig. 8 (Ex. 1003). Liquid is first atomized by a high speed stream of air forcing liquid to enter the cavity "in the form of droplet." Hon '043 at 10–11 (Ex. 1003). Then, optionally, it is "further atomized" by the heater or piezoelectric elements. Hon '043 at 10–11 (Ex. 1003). This "ejection" method of atomizing is more thermally efficient than Whittemore's wick method because it is powered by the user's inhalation and requires no heating element at all. It also takes less heat to atomize a small volume of liquid like a "droplet" than to atomize a larger volume of liquid.

Ex. 2015

HON 043

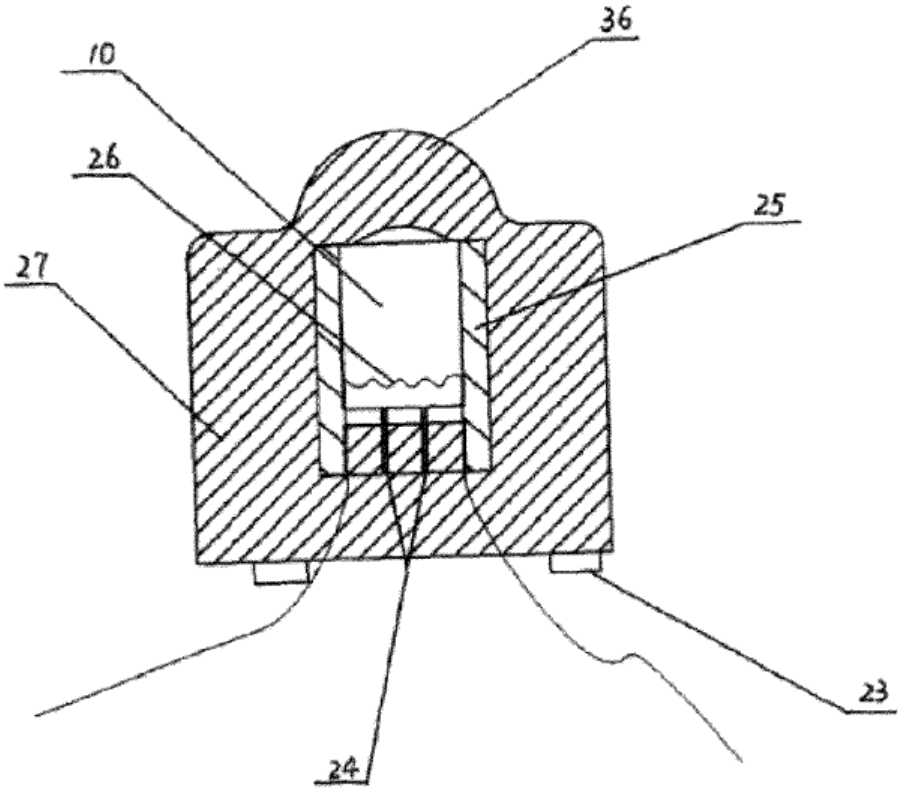

FIG. 6

Ex. 1003

Fontem Ex. 2038
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VMR DECISION, p. 19

component "by the interest of providing more efficient, uniform heating" that "would enhance commercial opportunities and make the product more desirable by increasing the efficiency of atomization." Pet. 23. Petitioner does not provide sufficient explanation as to why a person having ordinary skill in the art would have wanted to provide "more efficient, uniform heating" in the Hon cigarette. Petitioner does not direct us to, nor do we discern, statements in Hon or Susa with respect to the efficiency—or inefficiency—of atomization within the described articles. Petitioner's unsupported, conclusory statements do not constitute articulated reasoning with rational underpinnings as to why one of ordinary skill in the art would modify Hon in view of Susa's teachings to arrive at the claimed invention.

HON 043

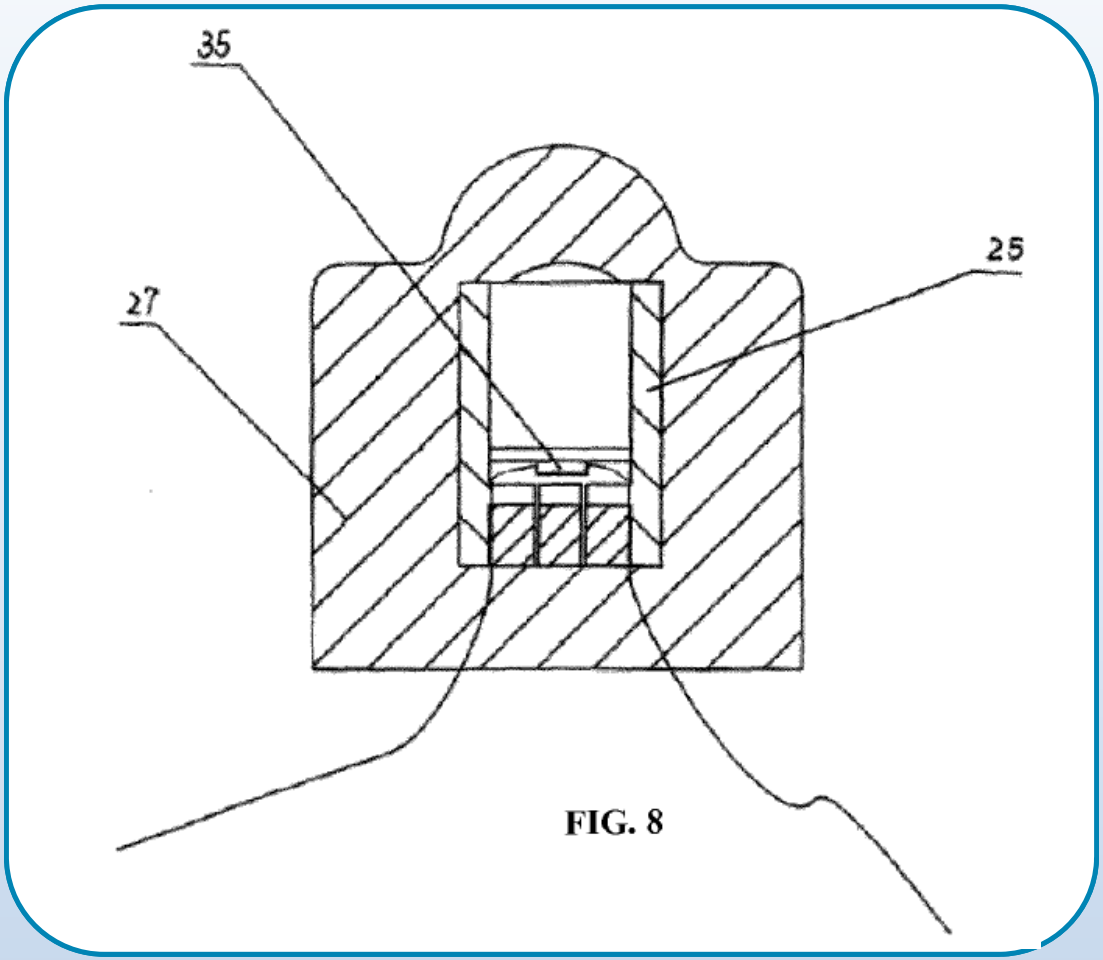

FIG. 8

Ex. 1003

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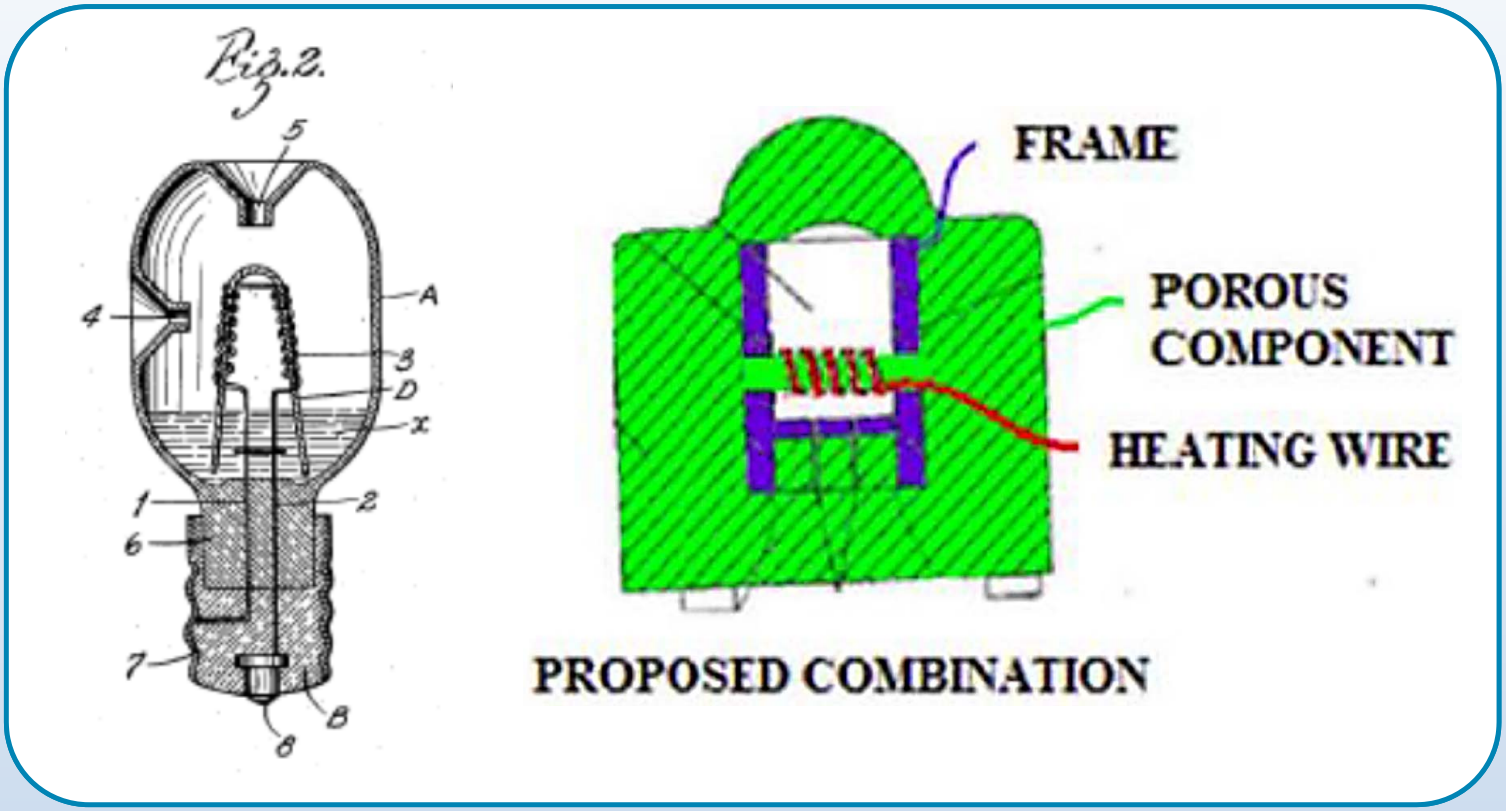
HON 043, pp. 9-11

wall 25. The long stream ejection hole 24 can employ a slot structure of 0.1 mm-1.3 mm or a circular hole structure of Φ0.2 mm-1.3 mm with a single and multiple holes. The short stream ejection hole 30 has a diameter of about 0.3 mm-1.3 mm. The atomization cavity

In addition, as shown FIG. 8, the first piezoelectric element 23 and the heating element 26 in the atomizer 9 can be omitted, an additional second piezoelectric element 35 in the form of platen with a single layer or multiple laminated layers can be arranged in the atomization cavity, and the stream passing through the ejection hole vibrates the focus at the center of the second piezoelectric element 35 to achieve the effect of strong ultrasonic atomization.

Ex. 1003

PROPOSED COMBINATION



Ex. 1004
Ex. 1027 ¶ 50

742 PATENT CLAIMS

2. An electronic cigarette, comprising:

a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly;

a liquid storage component in the housing;

with the housing having one or more through-air-inlets;

the atomizer assembly including a porous component supported by a frame having a run-through hole;

a heating wire wound on a part of the porous component in the path of air flowing through the run-through hole; and

the porous component substantially surrounded by the liquid storage component.

Ex. 1001

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INSTITUTION DECISION, pp. 13-14

For purposes of deciding whether to institute an *inter partes* review, we must view any issues of material fact created by testimonial evidence in the light most favorable to Petitioner. 37 C.F.R. § 42.108(c). Thus, only for purposes of this Decision, we must resolve the dispute between Dr. Sturges and Mr. Meyst regarding whether atomization cavity wall 25 supports porous body 27 in Petitioner's favor. Consequently, we are persuaded, on the present record, that Petitioner has established that Hon '043 describes "a porous component supported by a frame" as required by claim 2.

Paper 10

742 PATENT

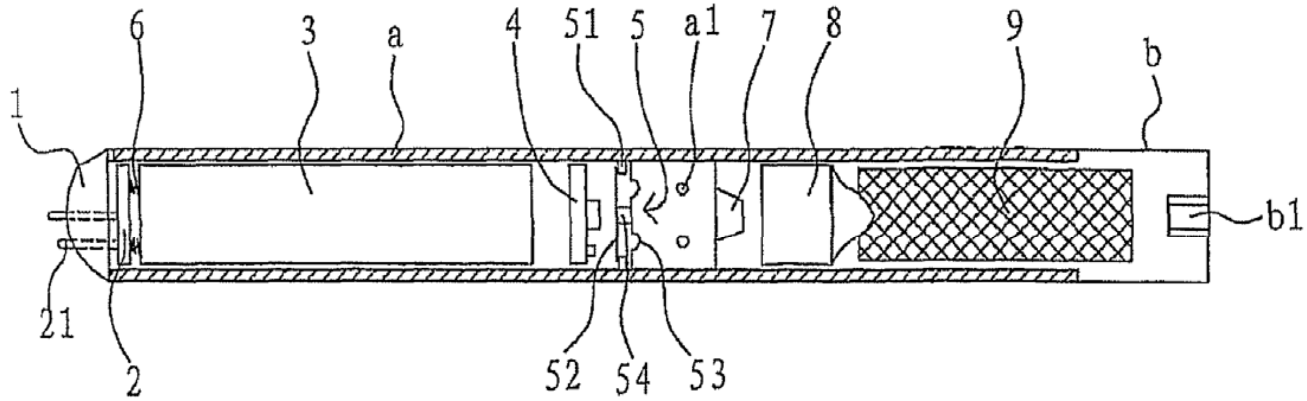

Figure 1

Ex. 1001

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742 PATENT, 1:16-24

To provide cigarette substitutes that contain nicotine but not harmful tar, many products have been used. These products are not as harmful as tar, but are absorbed very slowly. As a result, smokers can't be satisfied in full. In addition, the smokers are deprived of the "smoking" habit.

The electronic cigarettes currently available on the market may resolve the above-mentioned issue, though they are complicated in structure. They don't provide the ideal aerosol effects, and their atomizing efficiency is not high.

Ex. 1001

742 PATENT

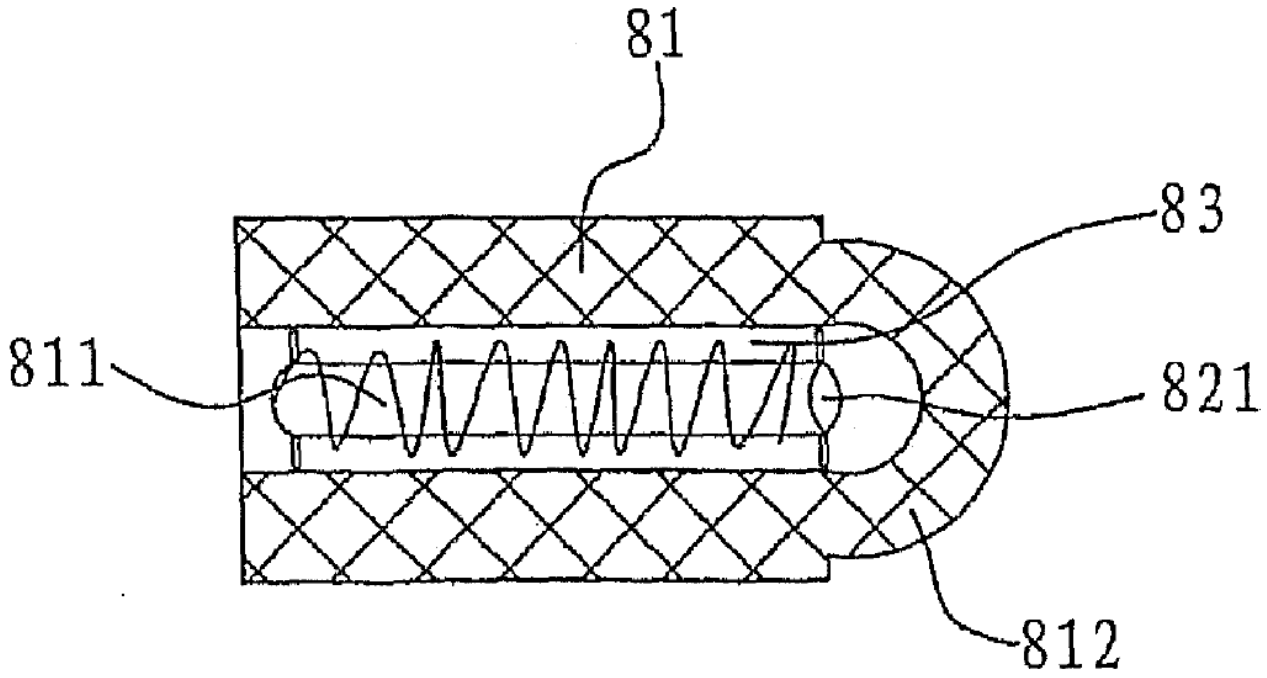

Figure 7

Ex. 1001

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268
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742 PATENT

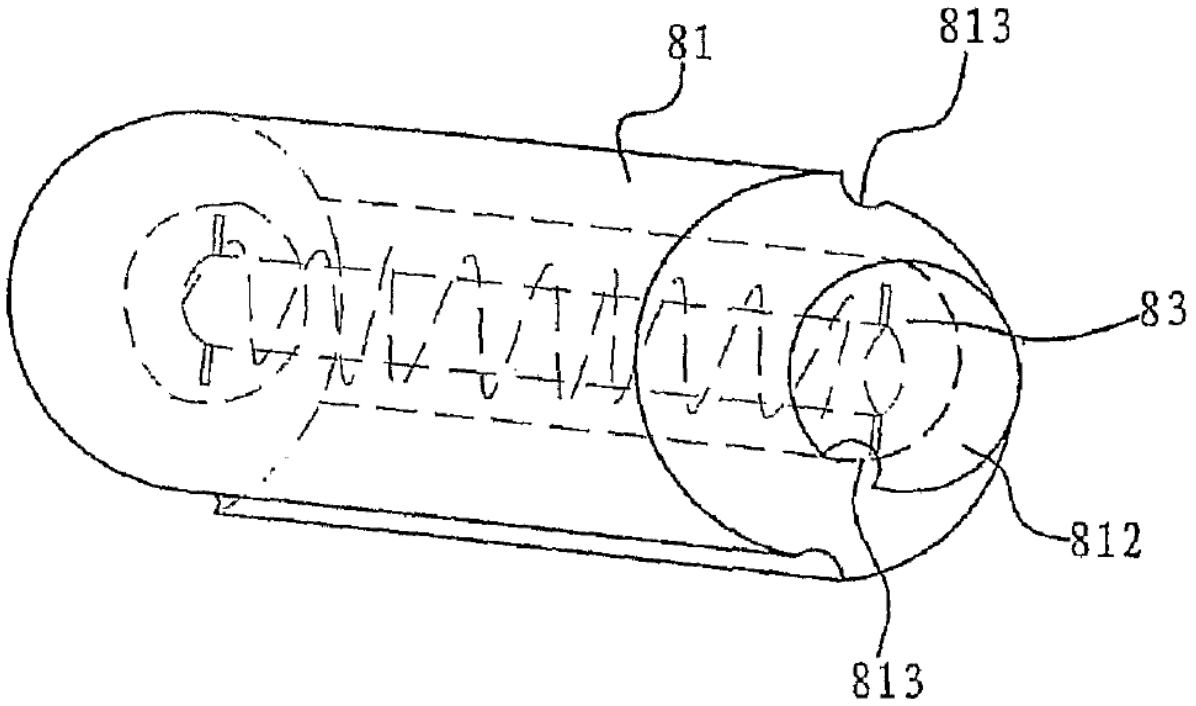

Figure 8

Ex. 1001

742 PATENT

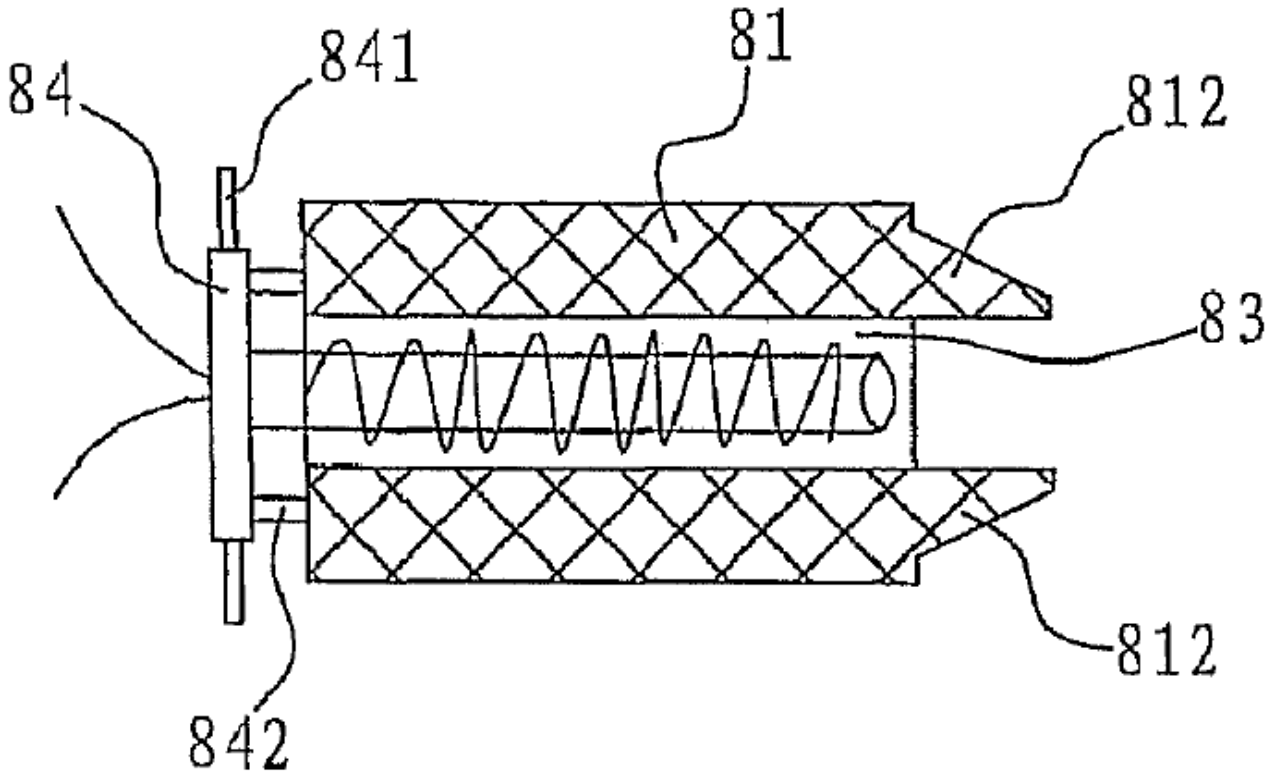

Figure 16

Ex. 1001

742 PATENT

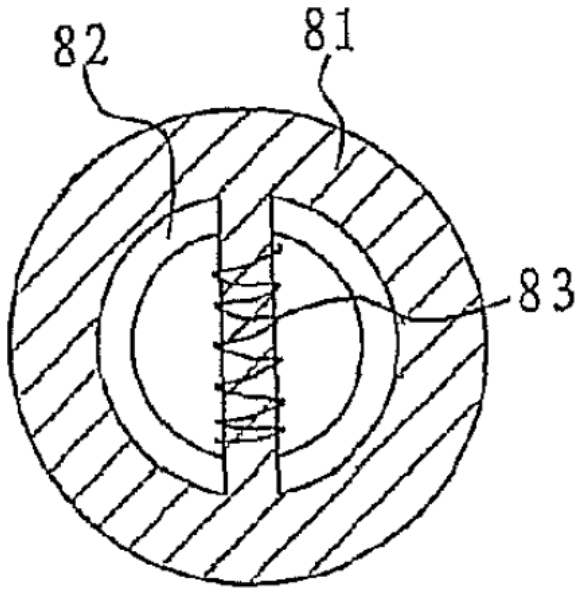

Figure 17

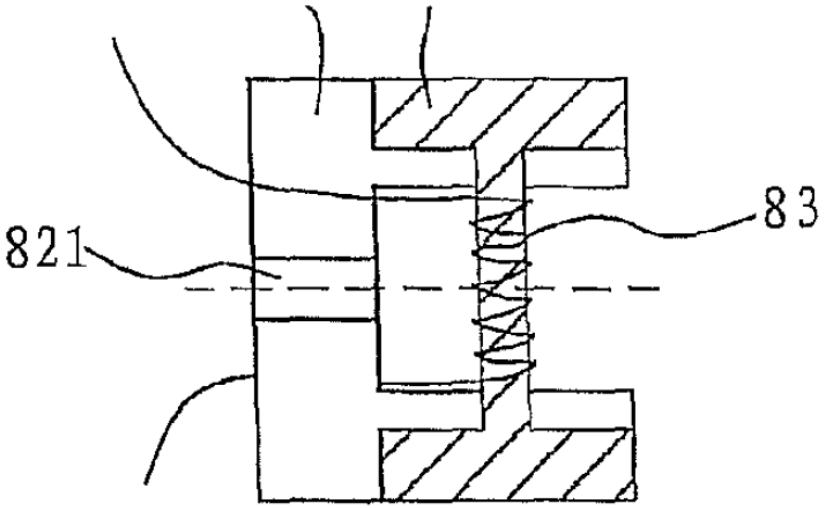

Figure 18

Ex. 1001

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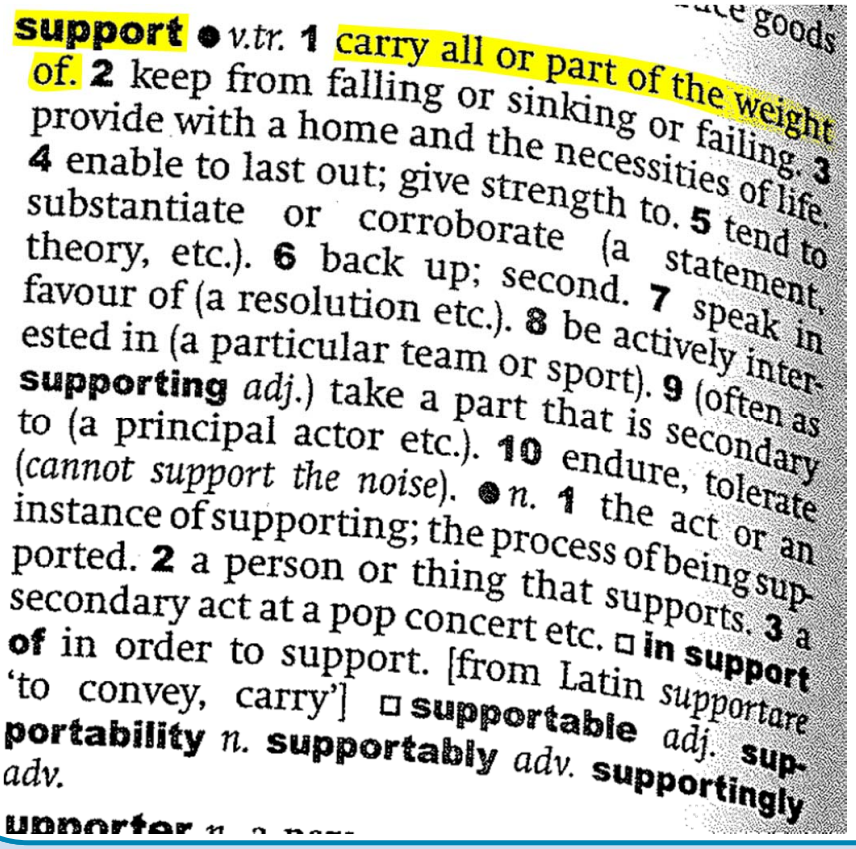
VMR DECISION, pp. 15-16

porous component 27 is supported by atomization cavity wall 25. *Id.* The ordinary meaning of "support" is "bear all or part of the weight of: hold up." Prelim. Resp. 12 (citing Ex. 2005, 1708). Petitioner does not explain adequately, nor cite to sufficient evidence of record explaining, how porous component 27 is held up by atomization cavity wall 25. The teachings in Hon on which Petitioner relies describe porous component 27 surrounding atomization cavity wall 25, but do not indicate that atomization cavity wall 25 is bearing the weight of, or holding up, porous cavity 27. Petitioner does not rely on Susa to teach this limitation.

IPR2015-00859 - Ex. 1011

OXFORD MODERN DICTIONARY



support ● *v.tr.* **1** carry all or part of the weight of. **2** keep from falling or sinking or failing. **3** provide with a home and the necessities of life. **4** enable to last out; give strength to. **5** tend to substantiate or corroborate (a statement, theory, etc.). **6** back up; second. **7** speak in favour of (a resolution etc.). **8** be actively interested in (a particular team or sport). **9** (often as **supporting** *adj.*) take a part that is secondary to (a principal actor etc.). **10** endure, tolerate (*cannot support the noise*). ● *n.* **1** the act or an instance of supporting; the process of being supported. **2** a person or thing that supports. **3** a secondary act at a pop concert etc. □ **in support of** in order to support. [from Latin *supportare* 'to convey, carry'] □ **supportable** *adj.* **supportability** *n.* **supportably** *adv.* **supportingly** *adv.*

supporter *n.* a pers-

support:

carry all or part of the weight of

Ex. 1025

Fontem Ex. 2038
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MERRIAM-WEBSTER'S DICTIONARY

sup·port \sə-'pȯrt\ *vt* [ME, fr. AF *supporter*, fr. LL *supportare*, fr. L, to transport, fr. *sub-* + *portare* to carry — more at FARE] (14c) **1** : to endure bravely or quietly : BEAR **2 a** (1) : to promote the interests or cause of (2) : to uphold or defend as valid or right : ADVOCATE ⟨~*s* fair play⟩ (3) : to argue or vote for ⟨~*ed* the motion to lower taxes⟩ **b** (1) : ASSIST, HELP ⟨bombers ~*ed* the ground troops⟩ (2) : to act with (a star actor) (3) : to bid in bridge so as to show support for **c** : to provide with substantiation : CORROBORATE ⟨~ an alibi⟩ **3 a** : to pay the costs of : MAINTAIN ⟨~ a family⟩ **b** : to provide a basis for the existence or subsistence of ⟨the island could probably ~ three —A. B. C. Whipple⟩ ⟨~ a habit⟩ **4 a** : to hold up or serve as a foundation or prop for **b** : to maintain (a price) at a desired level by purchases or loans; *also* : to maintain the price of by purchases or loans **5** : to keep from fainting, yielding, or losing courage : COMFORT **6** : to keep (something) going — **sup·port·abil·i·ty** \sə-ˌpȯr-tə-'bi-lə-tē\ *n* — **sup·port·able** \-'pȯr-tə-bəl\ *adj* — **sup·port·ive** \-'pȯr-tiv\ *adj* — **sup·port·ive·ness** \-nəs\ *n*

support: to hold up or serve as a foundation or prop for

Ex. 1024

HON 043 v. 742 PATENT

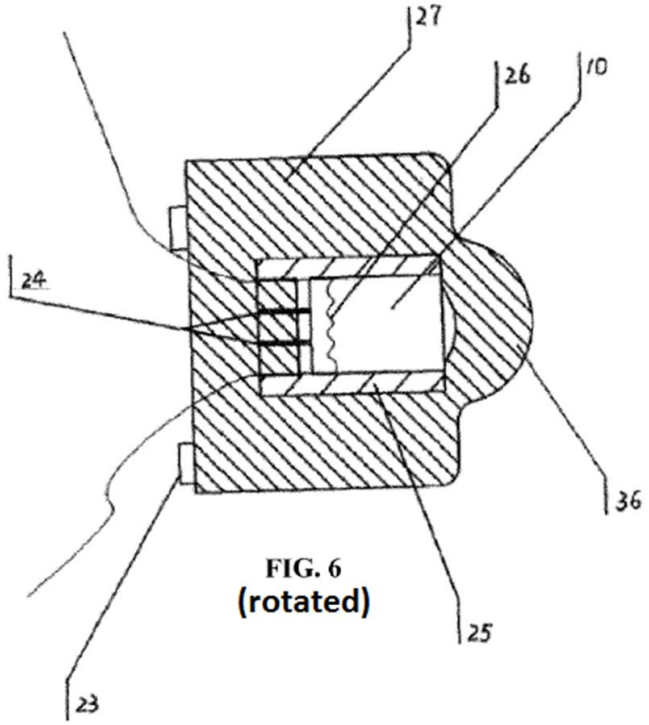


FIG. 6
(rotated)

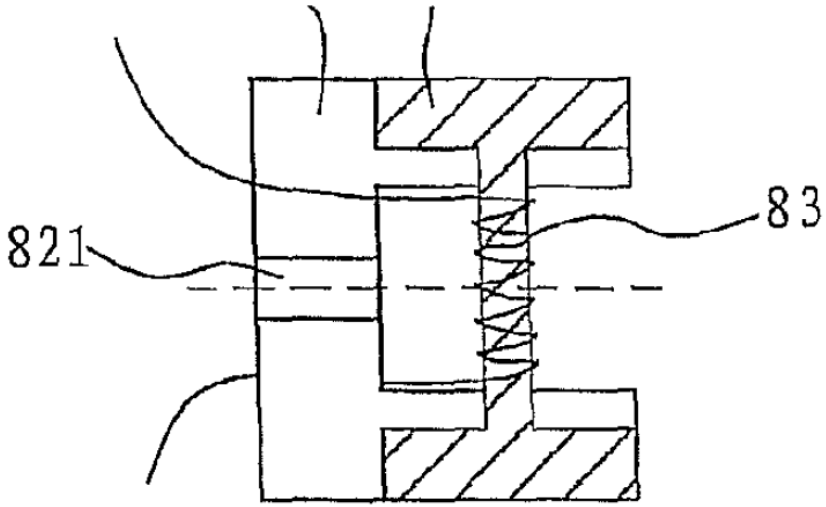


Figure 18

Ex. 1003

Ex. 1001

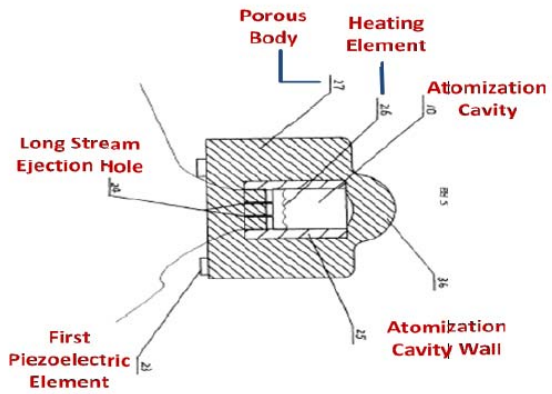
PETITION, p. 11

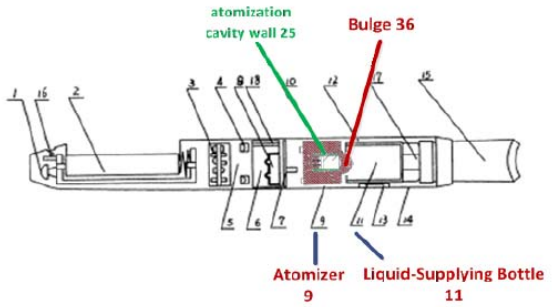
The PHOSITA for the '742 patent is a person with at least the equivalent of a Bachelor's degree in electrical engineering, mechanical engineering, or biomedical engineering or related fields, along with at least 5 years of experience designing electromechanical devices, including those involving circuits, fluid mechanics and heat transfer. Ex. 1015, ¶¶ 29-30.

Paper 2

STURGES DECLARATION

44. As illustrated below the atomization cavity wall 25 provides support for the porous body 27 against axial displacement when the porous body 27 is forcibly inserted into the solution storage porous body 28 in the liquid-supplying bottle 11. Ex. 1003 at 9, 11; Figs. 1, 6, and 11.





Ex. 1015

STURGES DEPOSITION, p. 117

Q So axial displacement means that the atomizer would move along the long axis of the e-cigarette when the liquid supply bottle is inserted into the e-cigarette; is that what you mean?

A Relative to each other, yes.

Ex. 2016

Fontem Ex. 2038
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MEYST DECLARATION

53. The cavity wall 25 could not prevent the porous body 27 from moving along the axis because the cavity wall is completely enclosed inside of the porous body.

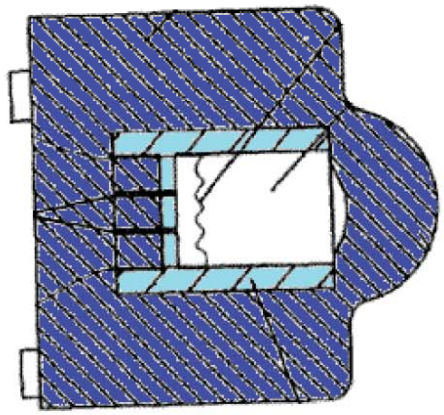

FIG. 6
(rotated)

Ex. 2015

Fontem Ex. 2038
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STURGES DEPOSITION, pp. 117-118

Q And the purpose of this cavity wall is to prevent that axial displacement; is that correct?

A It's not to prevent the axial displacement. It's to prevent the porous body from deforming so that the cavity is maintained in its designed dimensions and that none of the forces would tend to buckle or otherwise deform the shape of the porous body and thereby displace the heating element, for example, or cause the shape of the porous body to change such that it wouldn't function as an atomization cavity.

Ex. 2016

Fontem Ex. 2038
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STURGES DEPOSITION, pp. 117-118

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Ex. 2016

Fontem Ex. 2038
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MEYST DECLARATION ¶ 75

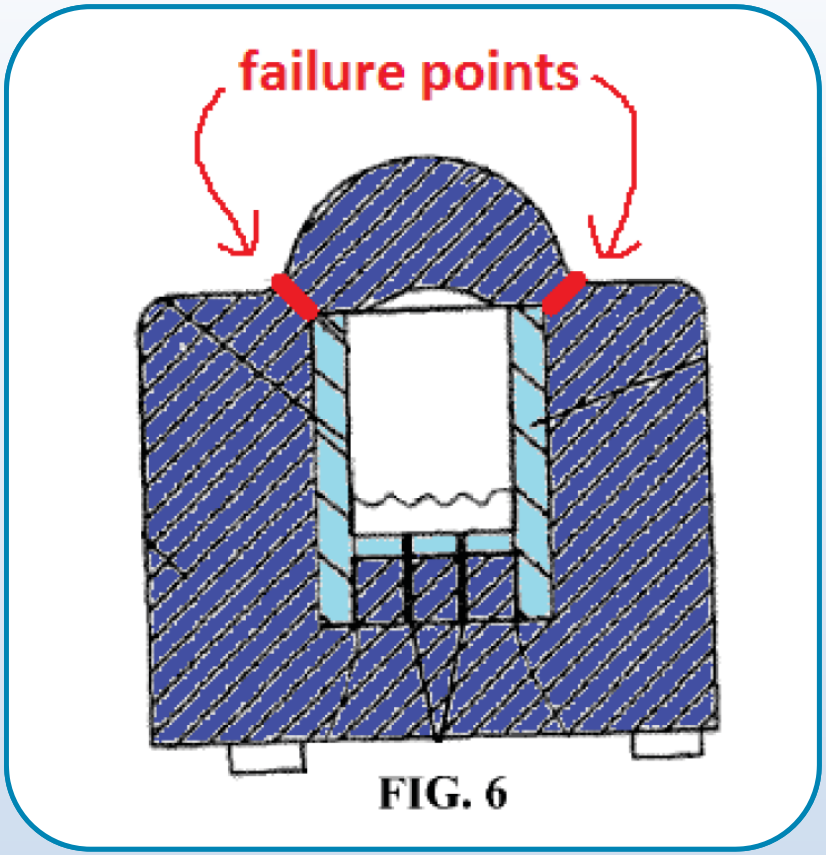

FIG. 6

Ex. 2015

HON 043, p. 11

mouthpiece 15. The solution storage porous body 28 in the liquid-supplying bottle 11 will be in contact with the bulge 36 on the atomizer 9, thereby achieving the capillary infiltration liquid-supplying.

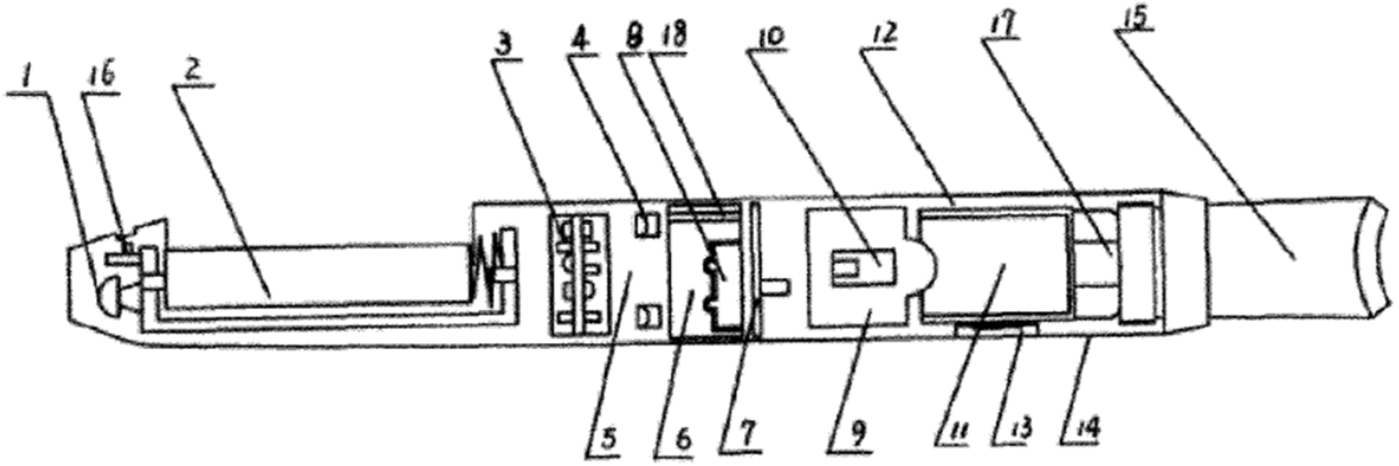

FIG. 1

Ex. 1003

MEYST DECLARATION

62. As I discuss below, neither of Dr. Sturges's assumptions is correct. Hon '043 does not suggest a compressive force strong enough to cause the porous body 27 to deform—it only discloses "contact" between the porous body 27 and solution storage body 28. Hon '043 at 11 (Ex. 1003). And even if that "contact" caused the porous body 27 to deform, it would not affect the function of the atomizer. As such, there is no reason for a "friction fit" or a "bonding material," and there are no shear forces between the cavity wall and the porous body.

Ex. 2015

MEYST DECLARATION

69. With regard to shape, Hon '043 teaches that the porous body has a "bulge" section 36 and is "arranged outside around the atomization cavity wall." Hon '043 at 7, 9, 11 (Ex. 1003). The porous body has a "bulge" section for achieving "capillary infiltration" with the solution storage body 28. Hon '043 at 11 (Ex. 1003). The porous body is "arranged outside around the atomization cavity wall" so that liquid will be transported to the ejection holes and so that the porous body is "outside" the overflow hole 29 to reabsorb large droplets that pass through. Hon '043 at 7, 10–11 (Ex. 1003). In my opinion, if contact between the porous body 27 and solution storage body 28 caused the porous body to deform, it would not impact the porous body's functions of transporting liquid from the liquid supply to the ejection holes or reabsorbing large liquid droplets through the overflow holes.

36

Ex. 2015

MEYST DECLARATION ¶ 93

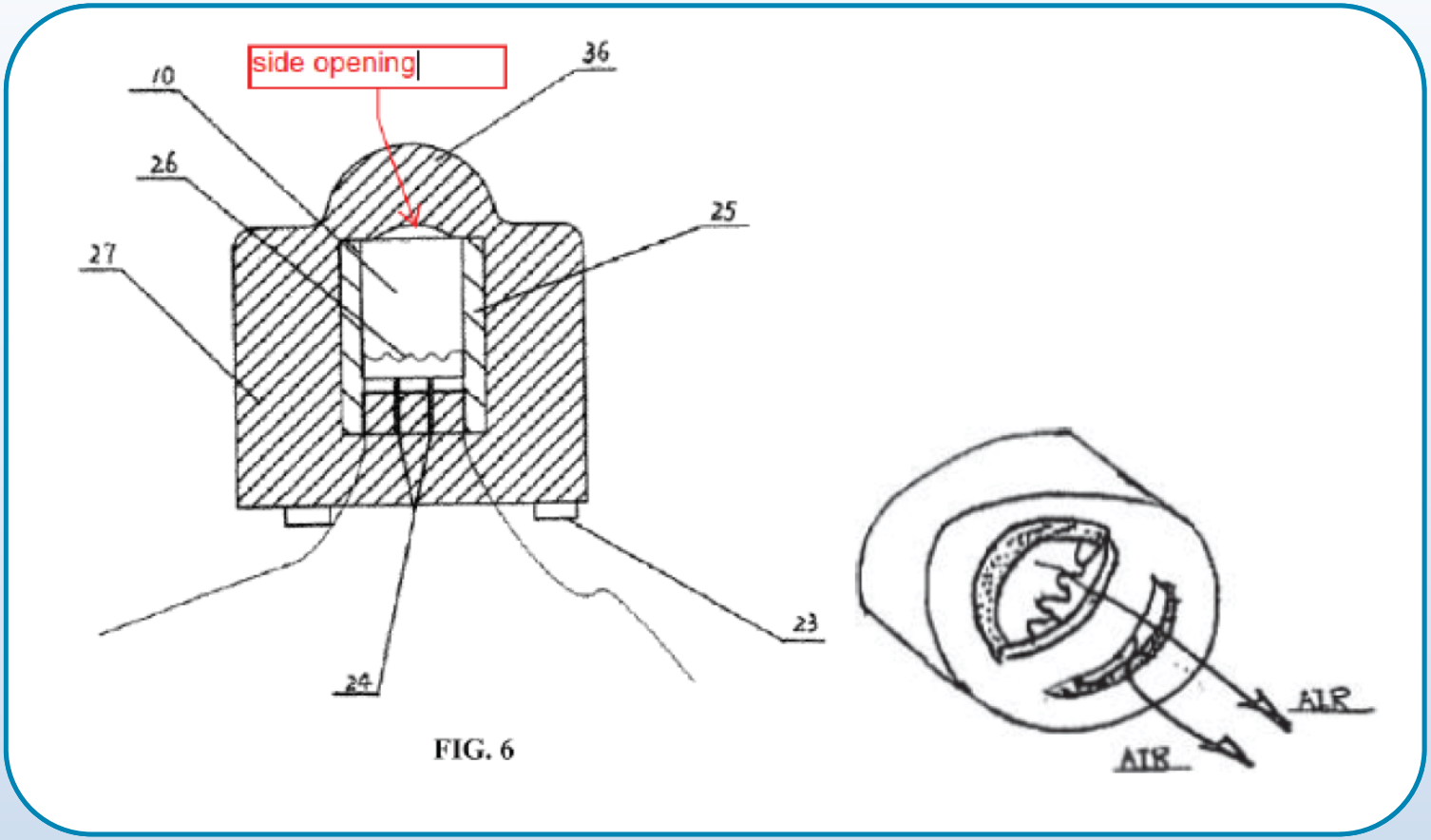

FIG. 6

Ex. 2015

STURGES DEPOSITION, pp. 140-141

MR. HAMILTON: Q So let's focus on the force from a user blowing onto the mouthpiece. And if there's a hole at the end of the porous body, the upstream end -- excuse me, the downstream end at the bulge, wouldn't that blowing force air into the cavity such that there would not be a force collapsing the cavity, and, in fact, that force would have the opposite effect?

A It wouldn't have the opposite effect because it would be equalized on the outside as on the inside. But to the earlier part of your question, the pressure would be equal on the inside and the outside and, therefore, there would be no need for support against the pressure if there were a hypothetical hole in the end.

Ex. 2016

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268
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HON 043, pp. 10-11

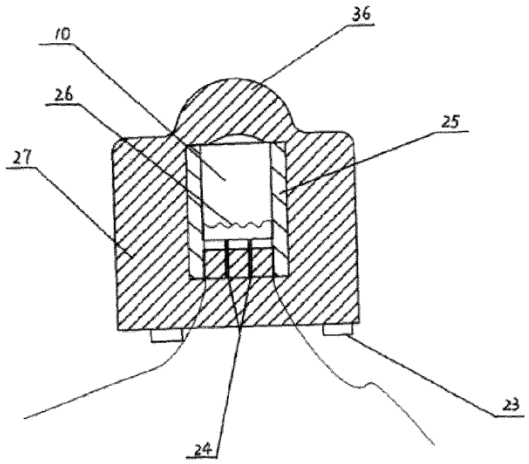

FIG. 6

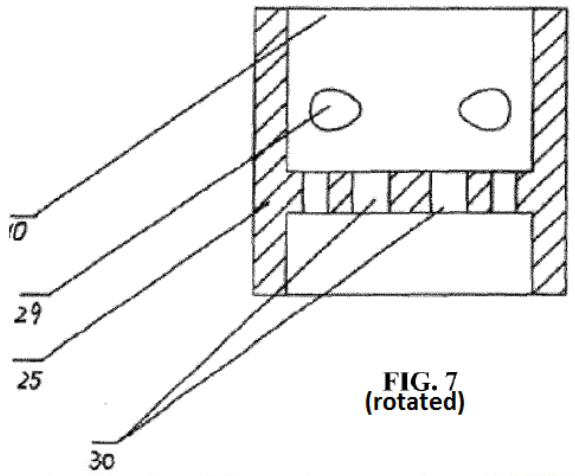

FIG. 7
(rotated)

liquid separator 7, and flows into the atomization cavity 10 in the atomizer 9. The high speed stream passing through the ejection hole drives the nicotine solution in the porous body 27 to eject into the atomization cavity 10 in the form of droplet, where the nicotine solution is subjected to the ultrasonic atomization by the first piezoelectric element 23 and is further atomized by the heating element 26. After the atomization, the large diameter droplets stick to the wall under the action of eddy flow and are reabsorbed by the porous body 27 via the overflow hole 29, whereas the small diameter droplets float in stream and forms aerosols, which are sucked out via the aerosol passage 12, gas vent 17 and mouthpiece 15. The solution storage porous body 28 in the liquid-supplying bottle 11 will

Ex. 1003 at 10-11

STURGES DEPOSITION, pp. 124-125

Q How would liquid pass through the cavity wall?
A According to the -- to the teachings and suggestions of the '043 patent, the cavity wall can have at least two mechanisms for that. One is it has holes in it. And the other is it could be made out of a porous ceramic.

Q And if you had a material that was porous sufficient for liquid to pass through the cavity wall, why would you also include an overflow hole?
A I have no answer for that question because that's something that's taught in '043 by itself, and there's no -- there would be no reason for it under those circumstances, but Hon says that they're there.

40

Ex. 2016

STURGES DEPOSITION, p. 104

Q So when you say the airflow stream would displace the liquid in the pores, you mean at the downstream end as the air flows out of the cavity?

A Yes, I think that's a reasonable expectation.

Q And what do you mean by displace?

A Move it to one side so that there is a free passage of the airflow from the cavity to the downstream outside.

Ex. 2016

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R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268
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STURGES DEPOSITION, p. 104

Q So when you say the airflow stream would displace the liquid in the pores, you mean at the downstream end as the air flows out of the cavity?

A Yes, I think that's a reasonable expectation.

Q And what do you mean by displace?

A Move it to one side so that there is a free passage of the airflow from the cavity to the downstream outside.

Ex. 2016

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268
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742 PATENT CLAIMS

3. An electronic cigarette, comprising:

a battery assembly and an atomizer assembly within a housing with the battery assembly electrically connected to the atomizer assembly;

with the housing having one or more through-air-inlets and an outlet;

the atomizer assembly includes a frame having a run through hole, and a porous component between the frame and the outlet;

a heating wire wound on a part of the porous component which is substantially aligned with the run-through hole; and

with the porous component in contact with a liquid supply in the housing.

Ex. 1001

HON 043 v. 742 PATENT

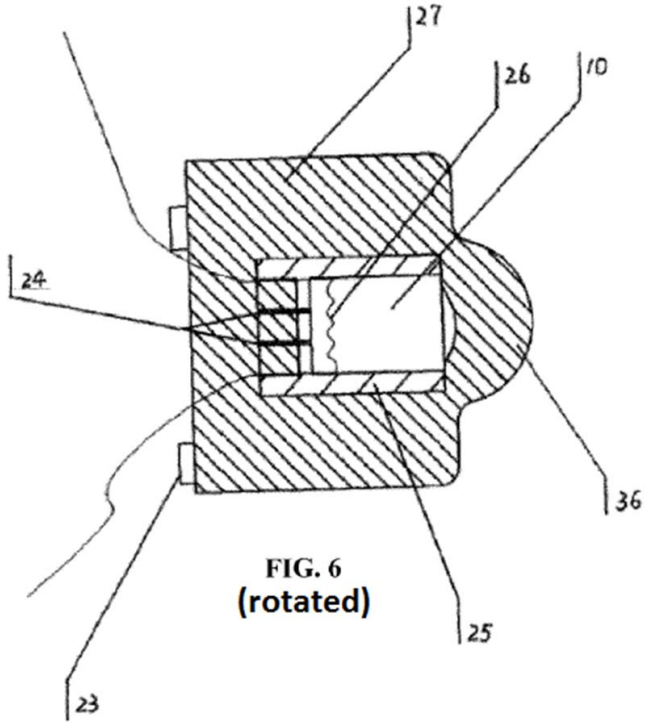

FIG. 6
(rotated)

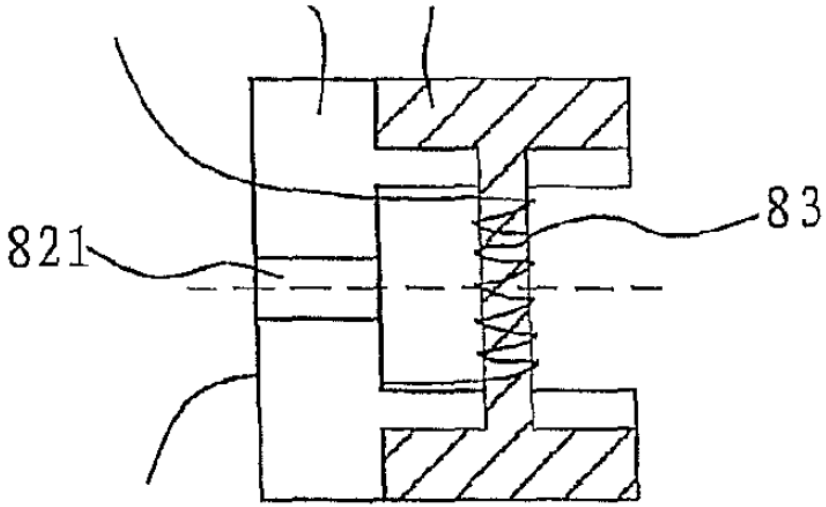

Figure 18

Ex. 1003

Ex. 1001

742 PATENT

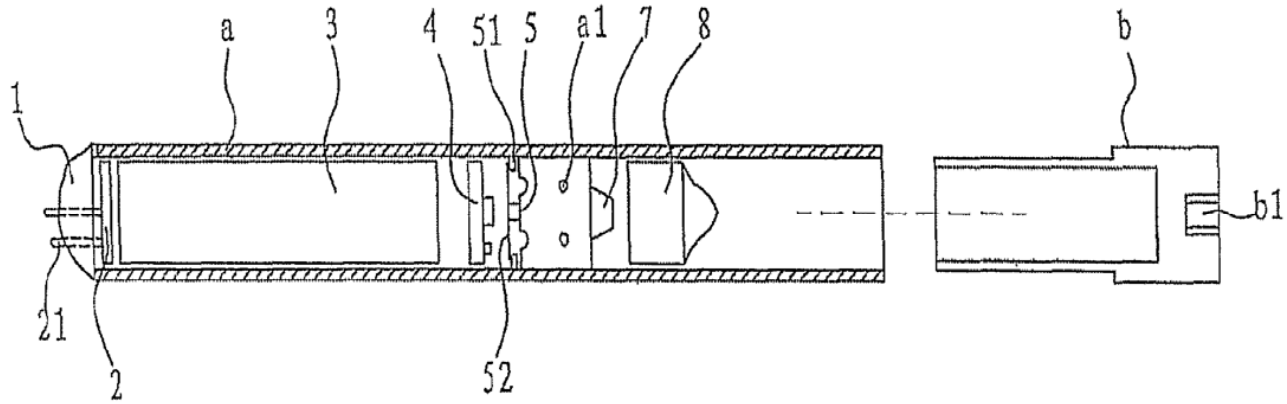

Figure 2

Ex. 1001

742 PATENT

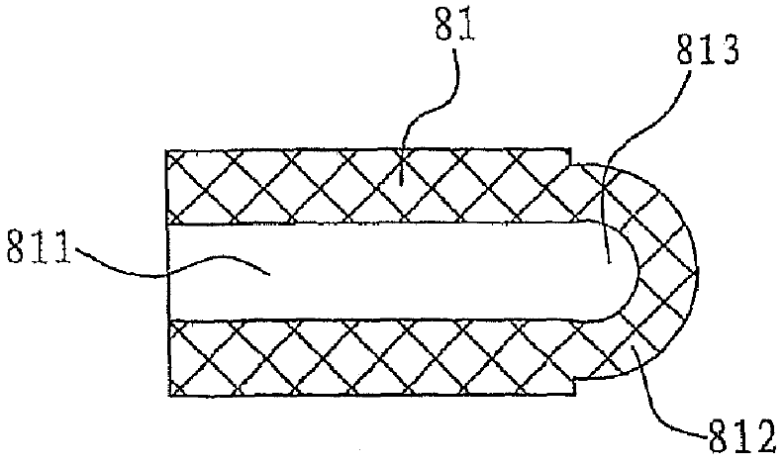

Figure 5

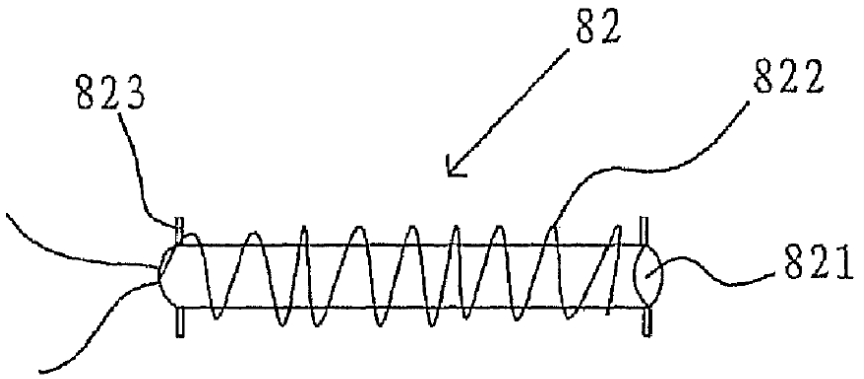

Figure 6

Ex. 1001

742 PATENT

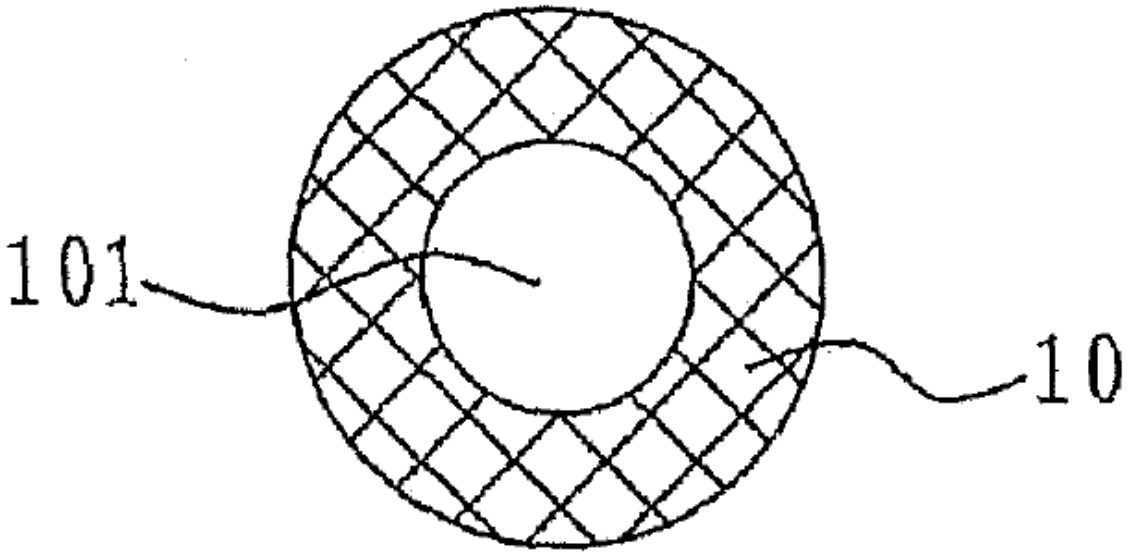

Figure 10

Ex. 1001

742 PATENT

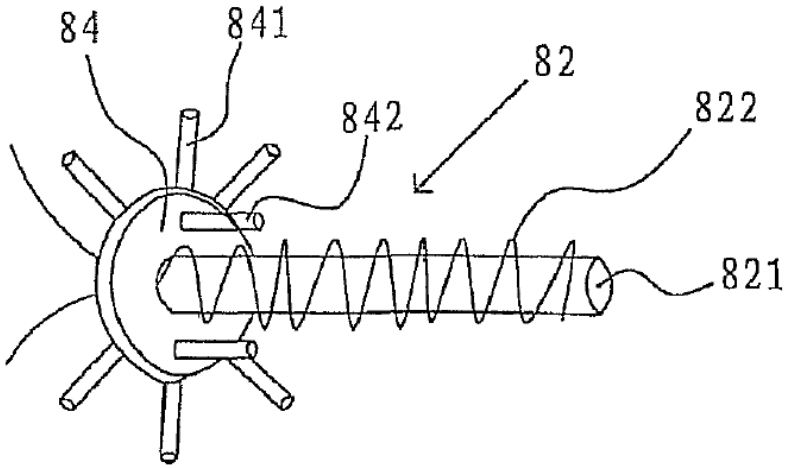

Figure 13

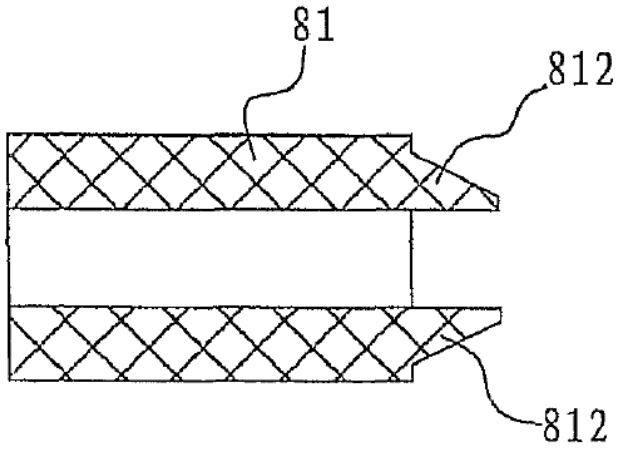

Figure 14

Ex. 1001

742 PATENT

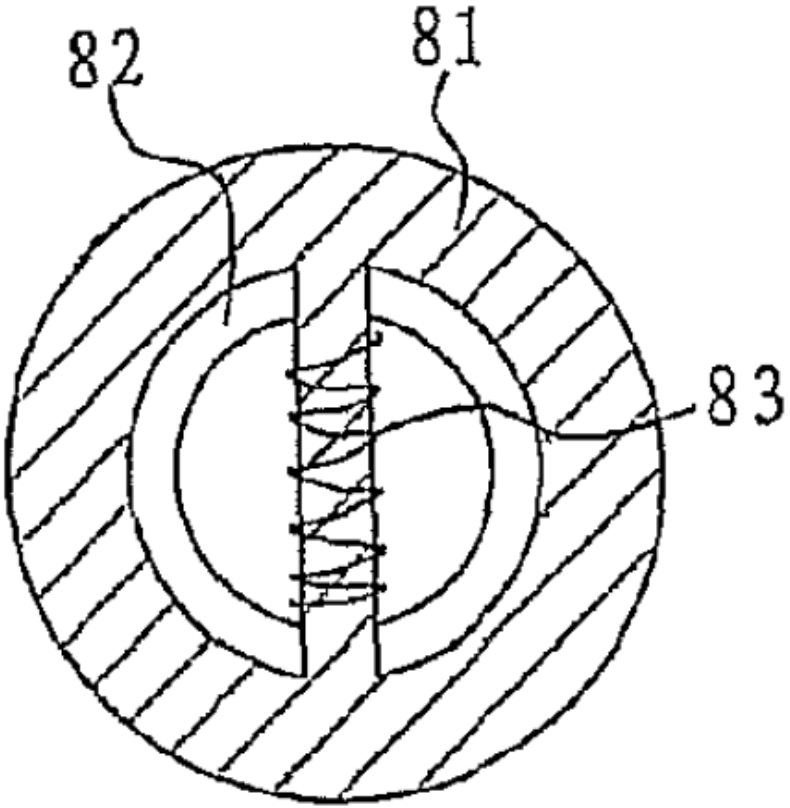

Figure 17

Ex. 1001

742 PATENT

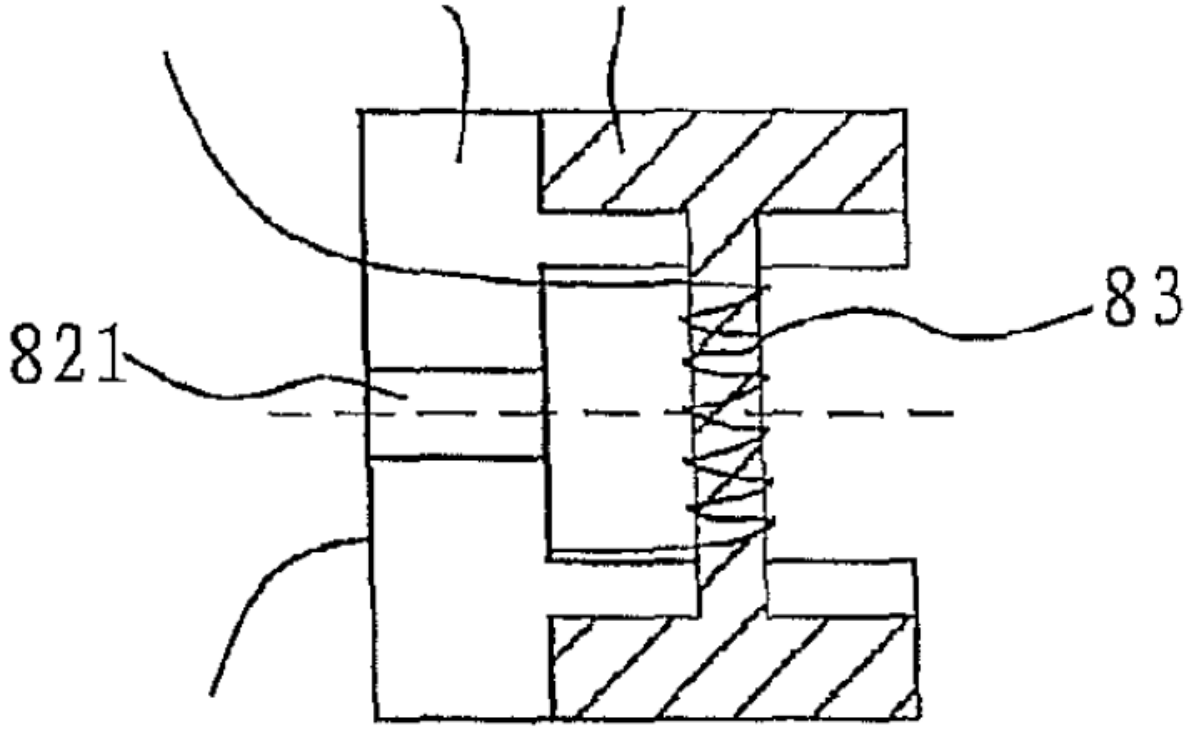

Figure 18

Ex. 1001

742 PATENT, 5:42-52

In the fifth preferred embodiment, as shown in FIGS. **17** and **18**, the atomizer assembly is an atomizer (**8**), which includes a frame (**82**), the porous component (**81**) set on the frame (**82**), and the heating wire (**83**) wound on the porous component (**81**). The frame (**82**) has a run-through hole (**821**) on it. The porous component (**81**) is wound with heating wire (**83**) in the part that is on the side in the axial direction of the run-through hole (**821**). One end of the porous component (**81**) fits with the cigarette bottle assembly. The porous component (**81**) is made of foamed nickel, stainless steel fiber felt, macromolecular polymer foam or foamed ceramics.

Ex. 1001

HON 043

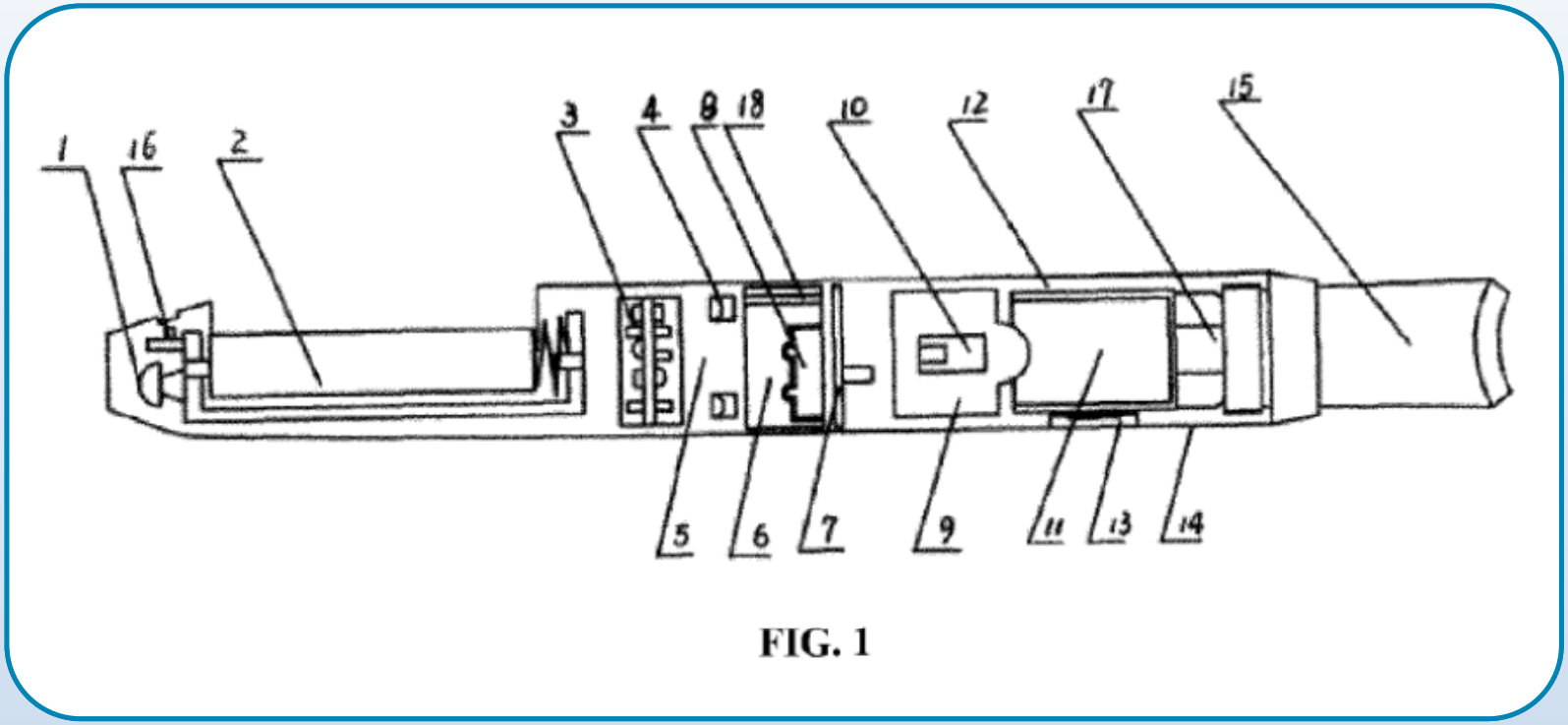

FIG. 1

Ex. 1003

Fontem Ex. 2038
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HON 043

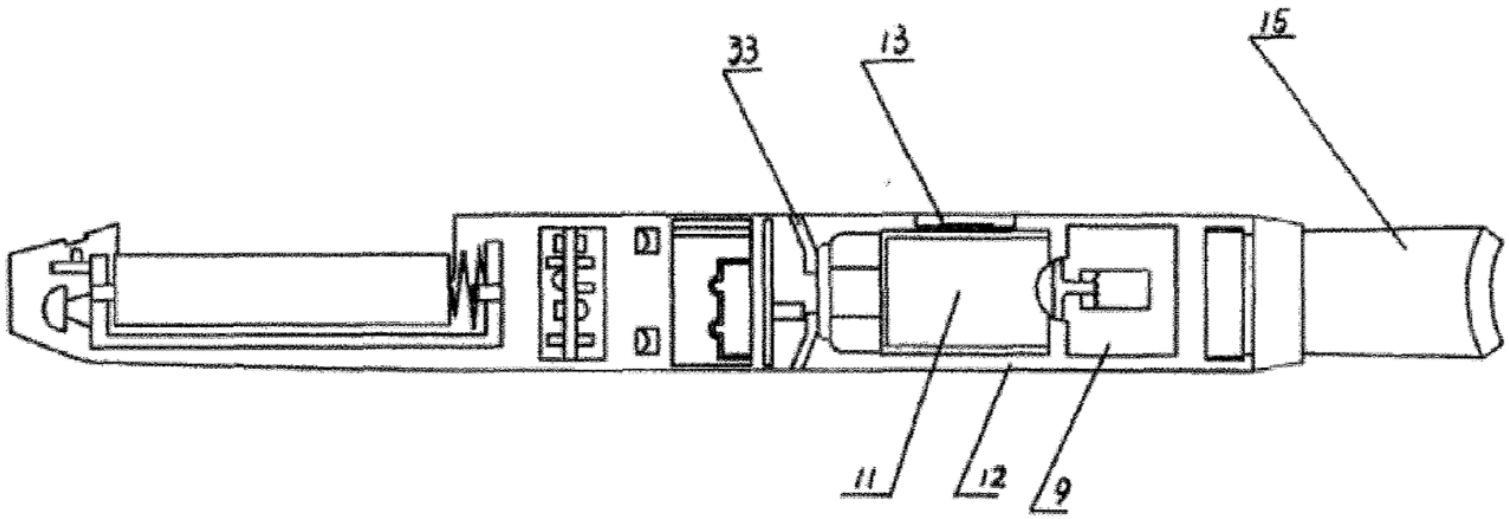

FIG. 2

Ex. 1003

HON 043

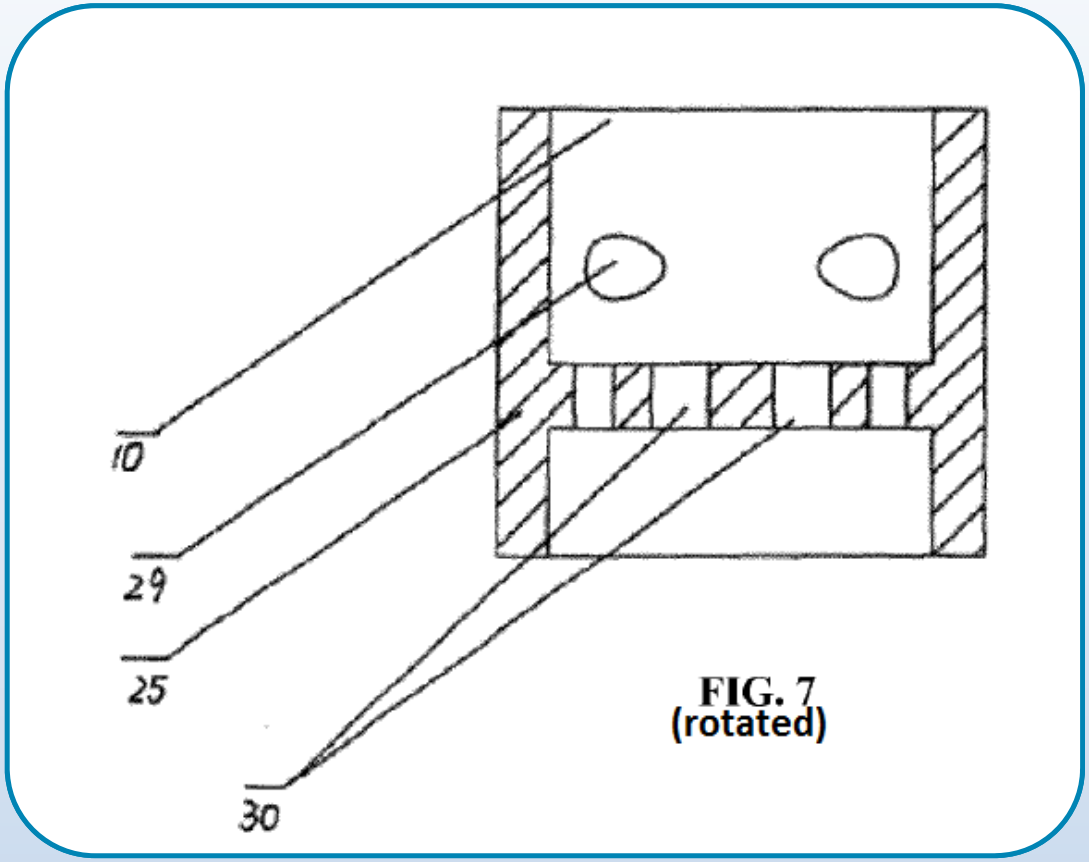

FIG. 7
(rotated)

Ex. 1003

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HON 043, p. 9

wall 25. The long stream ejection hole 24 can employ a slot structure of 0.1 mm-1.3 mm or a circular hole structure of Φ0.2 mm-1.3 mm with a single and multiple holes. The short stream ejection hole 30 has a diameter of about 0.3 mm-1.3 mm. The atomization cavity wall 25 is surrounded with a porous body 27, which can be made of foam nickel, stainless steel fiber felt, high molecule polymer foam and foam ceramic. A first piezoelectric

Ex. 1003

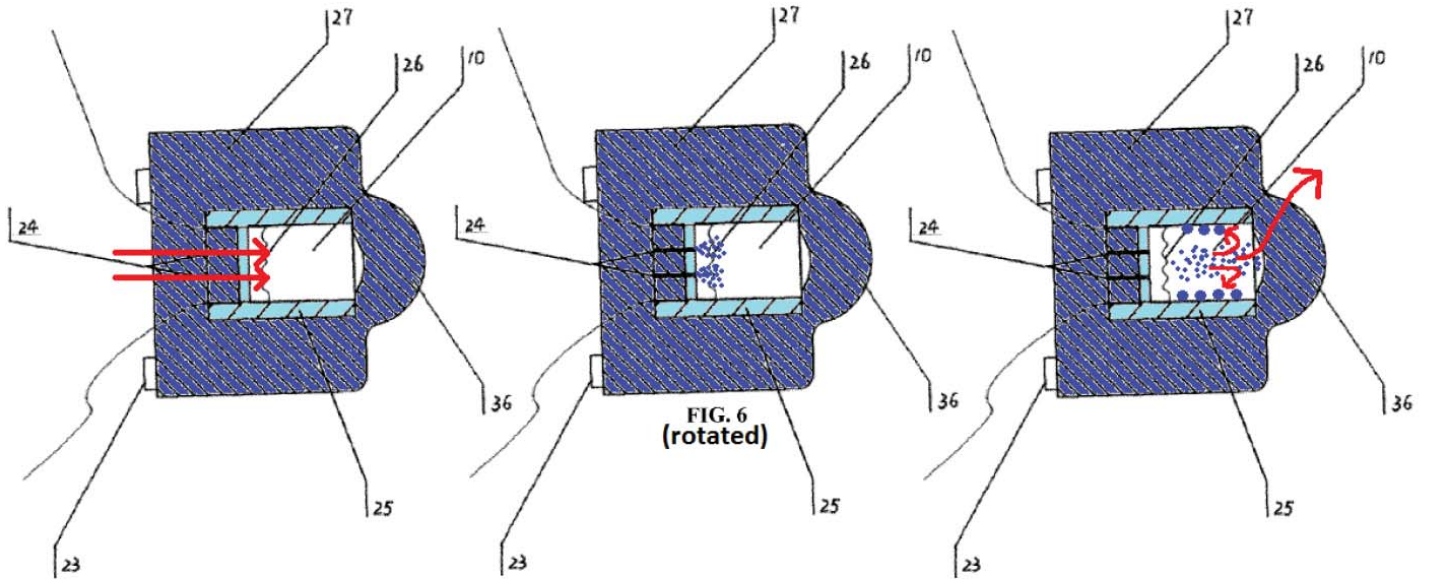
HON 043, pp. 9-10

stream ejection hole 30 has a diameter of about 0.3 mm-1.3 mm. The atomization cavity wall 25 is surrounded with a porous body 27, which can be made of foam nickel, stainless steel fiber felt, high molecule polymer foam and foam ceramic. A first piezoelectric element 23 is also provided on the atomizer 9. The atomization cavity wall 25 can be made of aluminum oxide or ceramic. As shown in FIG. 9, a through hole is provided on the vapor-liquid separator 7, and can be made of plastic or silicon rubber. As shown in FIG. 11, a retaining ring 13 for locking the liquid-supplying bottle 11 is provided between one side of the liquid-supplying bottle 11 and the shell 14, an aerosol passage 12 is provided on the other side of the liquid-supplying bottle. A solution storage porous body 28 is provided in the liquid-supplying bottle, and can be filled with polypropylene fiber, terylene fiber or nylon fiber, or be filled with plastic that are shaped by foaming, such as polyamine resin foam column or polypropylene foam column; alternatively, it may be made of a column formed by molding polyvinyl chloride, polypropylene, polycarbonate into a stack of laminated layers. The air inlet 4, normal pressure cavity 5, vapor-liquid separator 7,

56

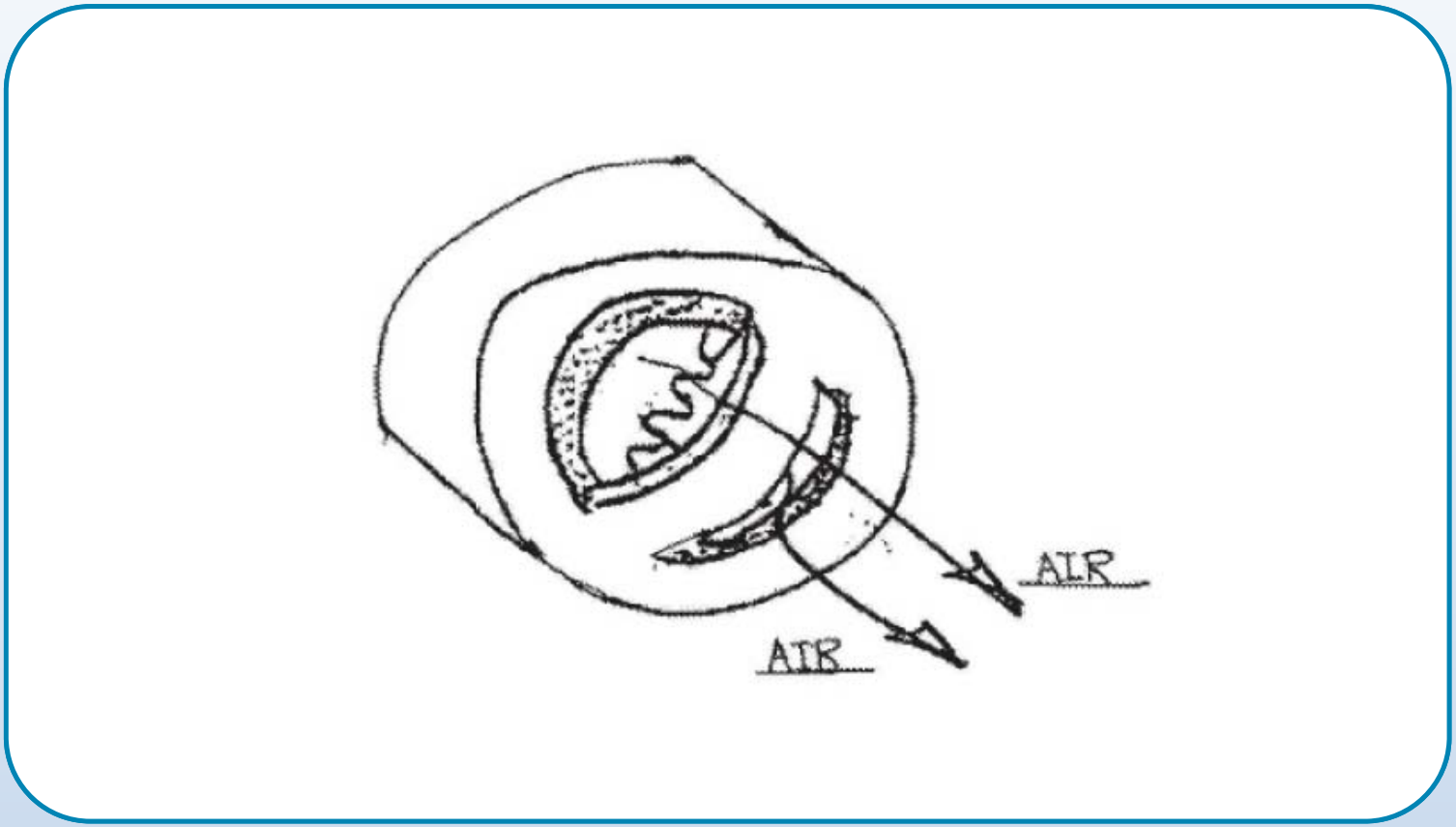
Ex. 1003

MEYST DECLARATION ¶ 38



Ex. 2015

MEYST DECLARATION ¶ 42



Ex. 2015

MEYST DECLARATION

68. In my opinion, a person of ordinary skill would not have been concerned about deformation of Hon '043's porous body 27. Hon '043 itself makes no mention of the porous body deforming, or the need to prevent it from doing so. The purpose of the porous body 27 is to transport liquid from the liquid-supplying bottle 11 via "capillary infiltration" to ejection holes 24, where a "high speed stream passing through the ejection hole drives the nicotine solution in the porous body 27 to eject into the atomization cavity 10 in the form of droplet." Hon '043 at 10–11 (Ex. 1003). Porous body 27 also "reabsorb[s]" large droplets that stick to the cavity wall through overflow hole 29. Hon '043 at 11 (Ex. 1003).

Ex. 2015

MEYST DECLARATION

70. It is also my opinion that a person of ordinary skill in the art would not understand the compressive forces in Hon '043 to be strong enough to cause any noticeable deformation of porous body 27. Hon '043 states that porous body 27 is in "contact" with solution storage body 28 to achieve "capillary infiltration." Hon '043 at 11 (Ex. 1003). A user can unscrew mouthpiece 15 and remove liquid-supplying bottle 11 to refill it, and then "put" it back into shell 14 again. Hon '043 at 11 (Ex. 1003). The amount of force required for "contact" and to "put" the bottle into the shell would be negligible with respect to deforming the porous body.

Ex. 2015

Fontem Ex. 2038
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STURGES DECLARATION ¶ 63

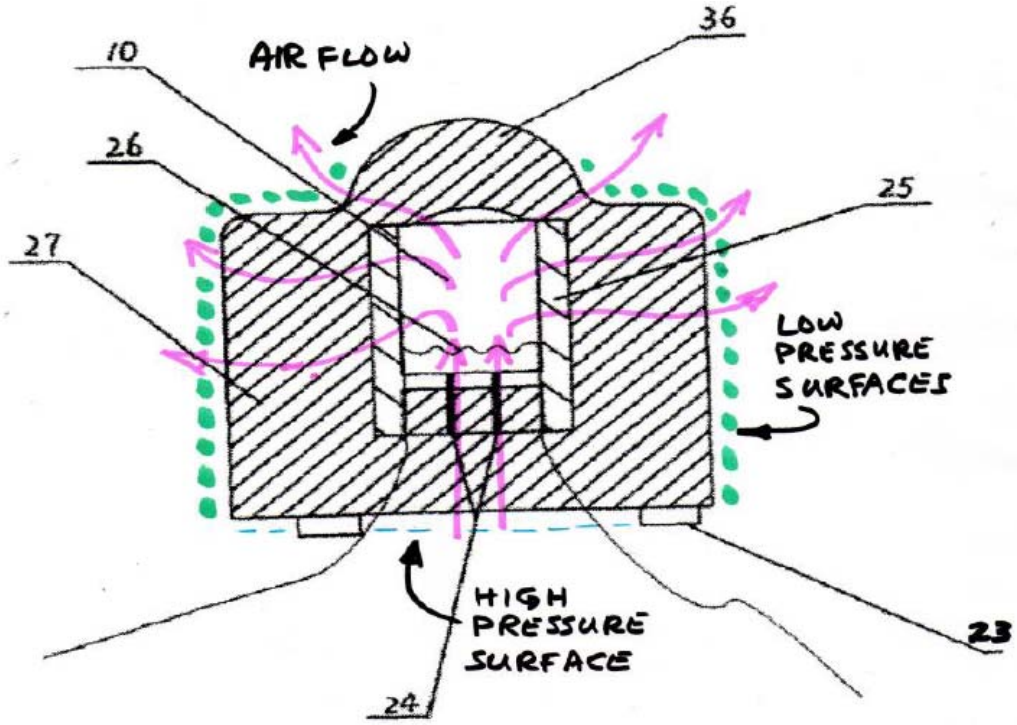

FIG. 6

Ex. 1015

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268
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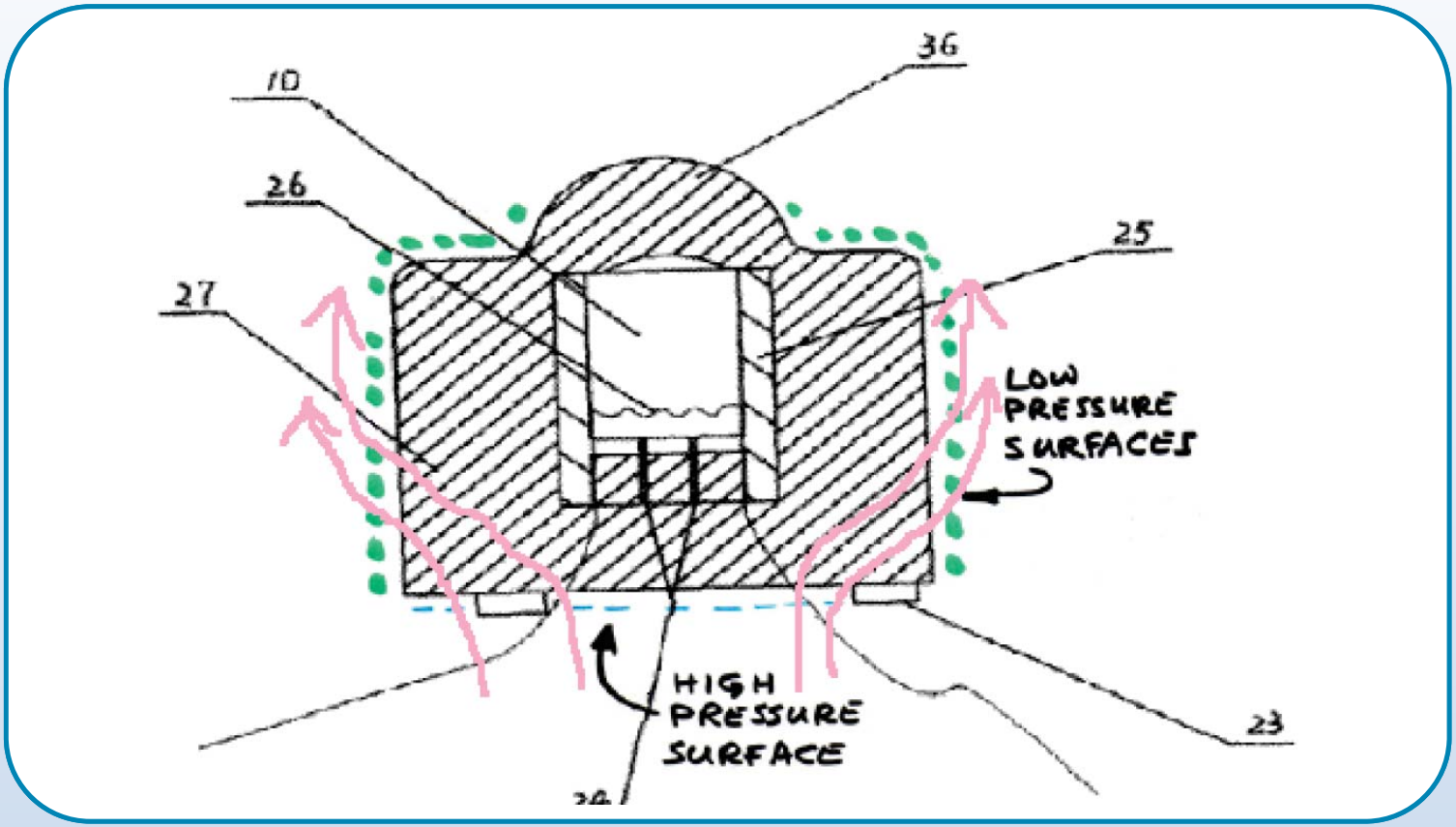
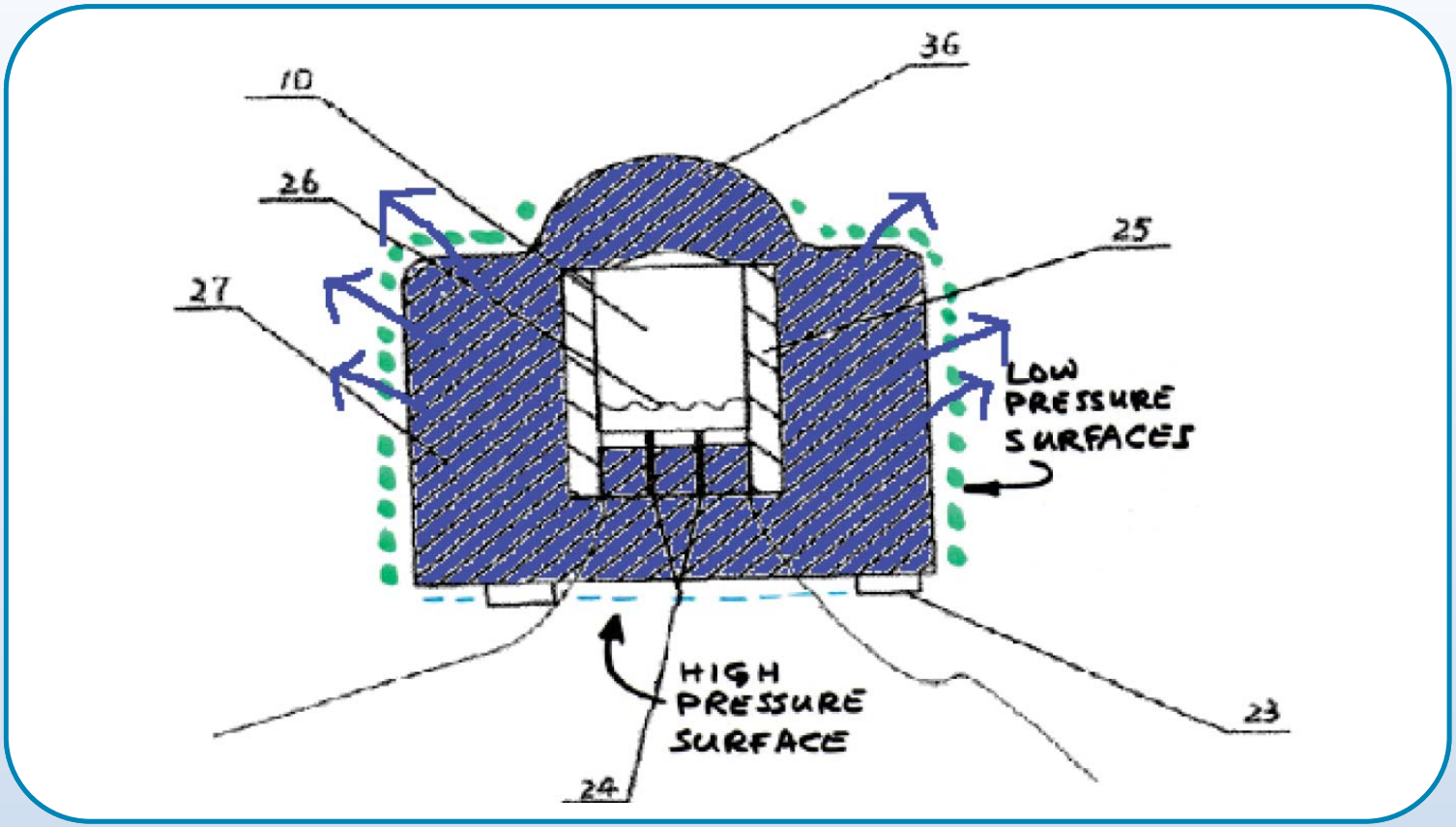
MEYST DECLARATION ¶ 44



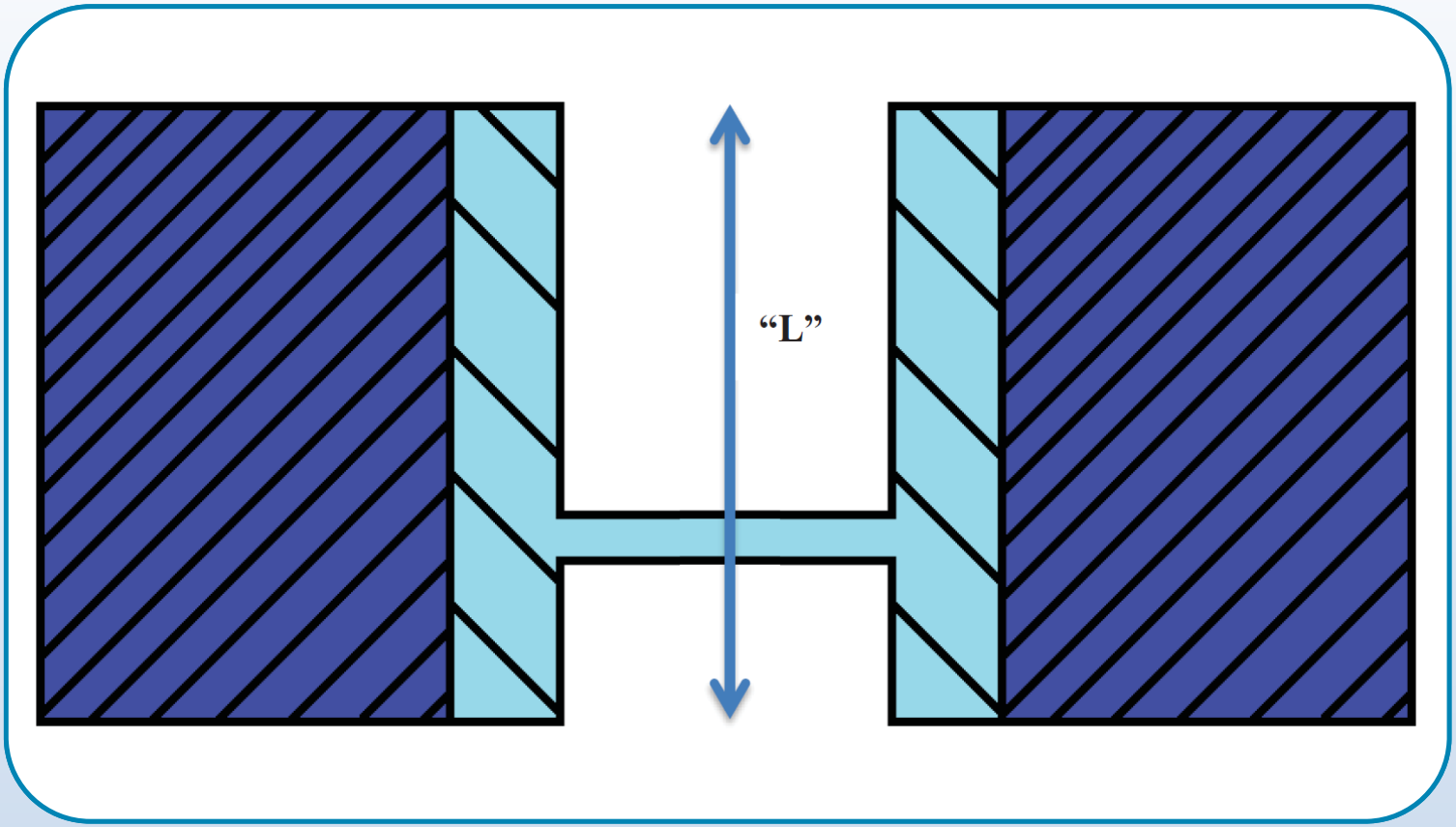
Ex. 2015

MEYST DECLARATION ¶ 46



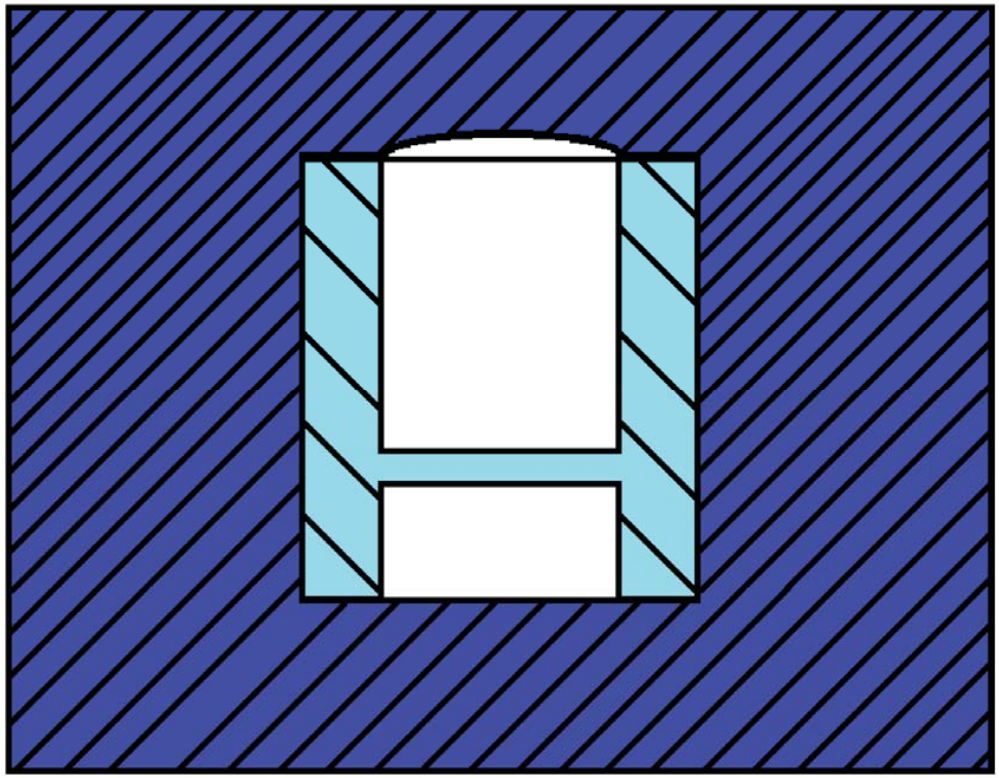
Ex. 2015

MEYST DECLARATION ¶ 71



Ex. 2015

MEYST DECLARATION ¶ 73



Ex. 2015

Fontem Ex. 2038
R.J. Reynolds Vapor Company v. Fontem Holdings 1 B.V. IPR2016-01268
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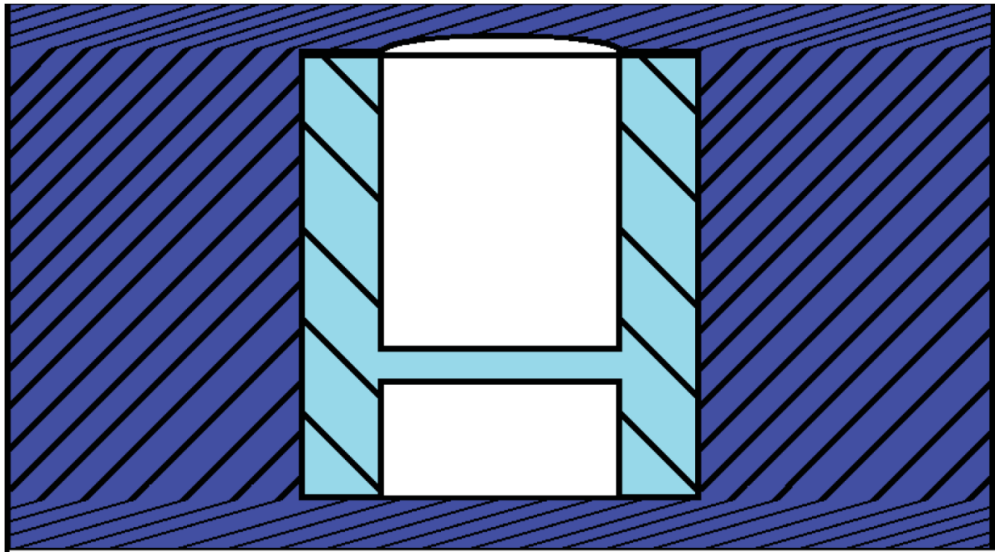
MEYST DECLARATION ¶ 74



Ex. 2015

Fontem Ex. 2038
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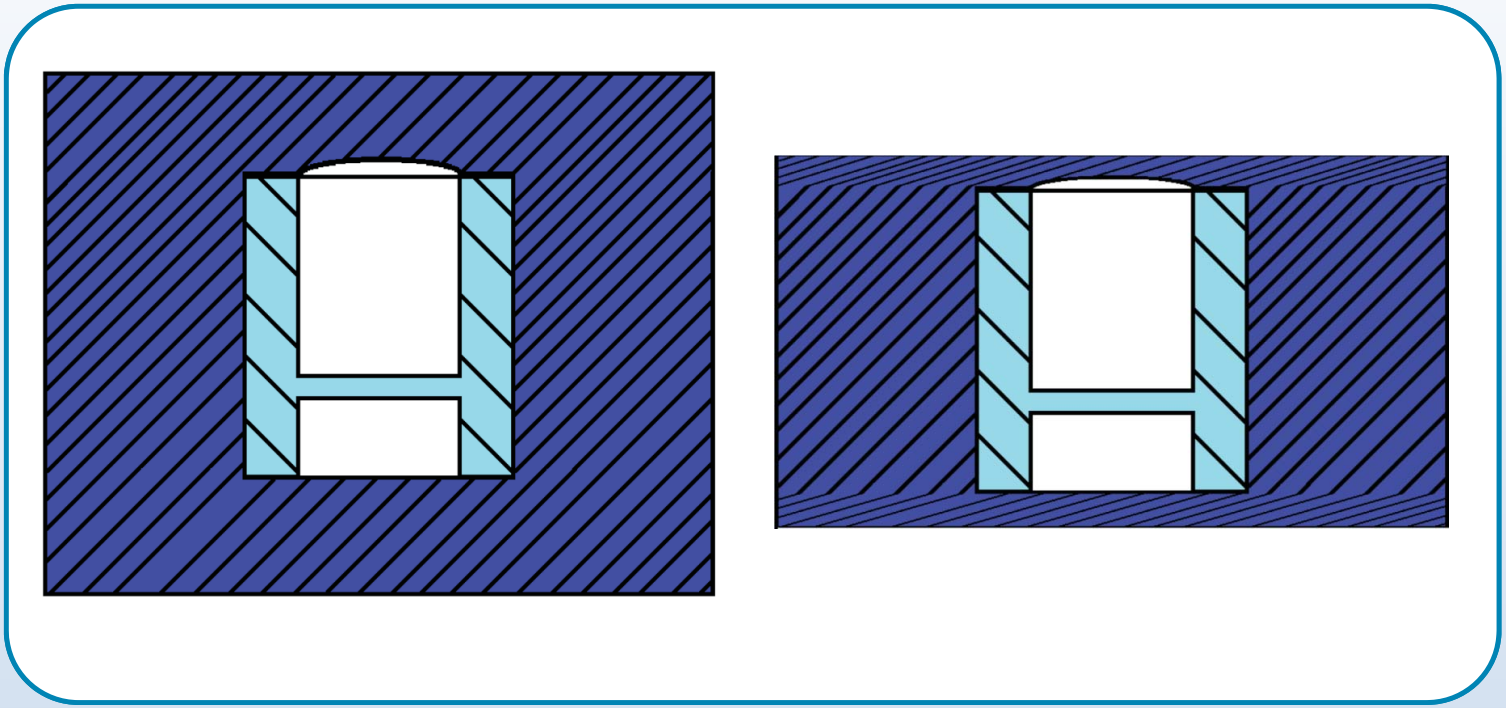
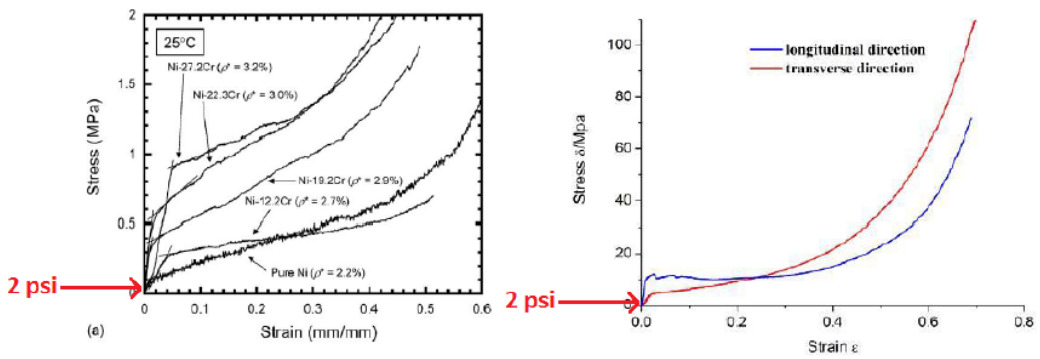
MEYST DECLARATION ¶¶ 73, 74



Ex. 2015

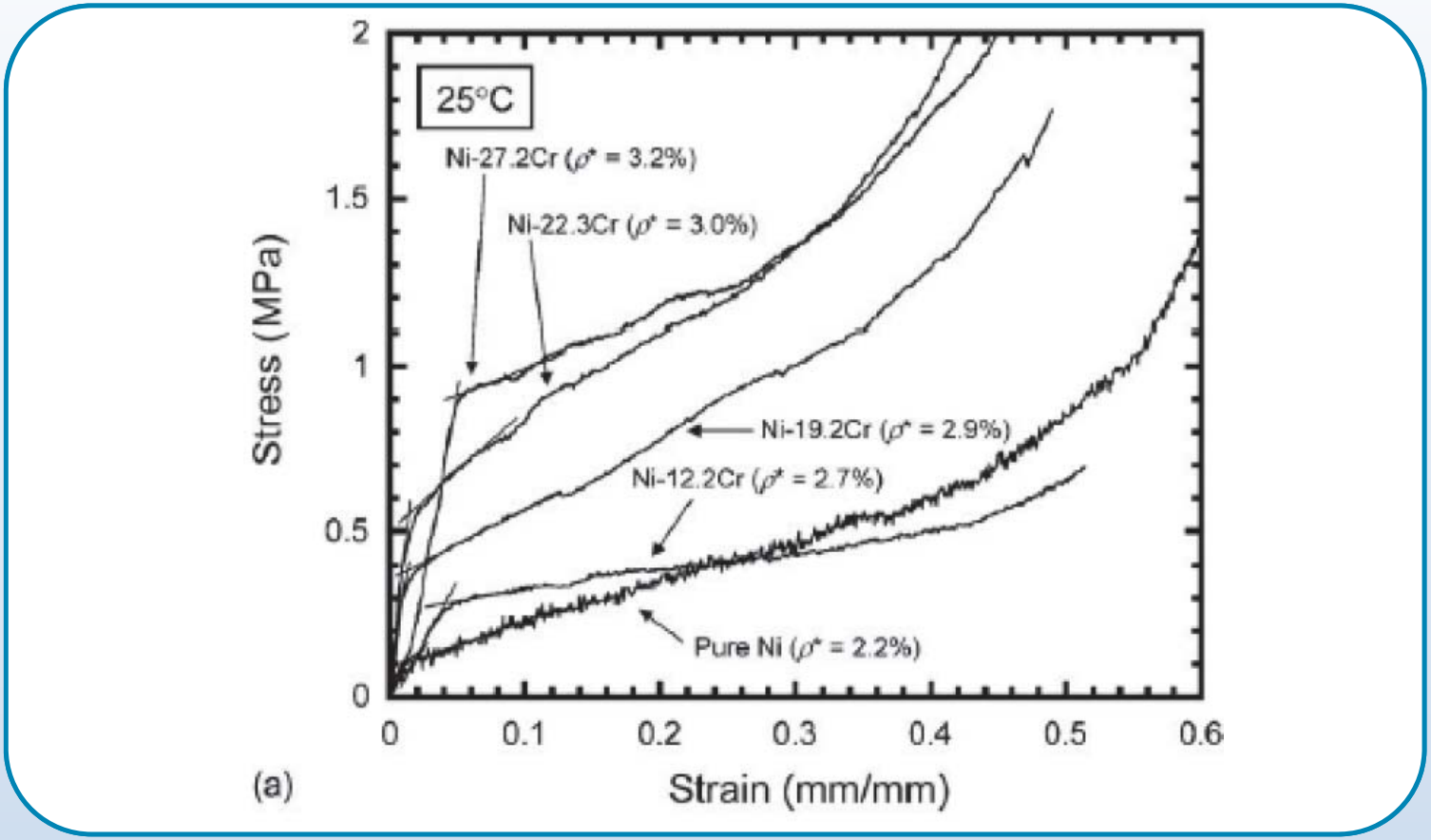
MEYST DECLARATION



81. Two psi equates to roughly 0.014 MPa. The smallest tick mark on the y-axis of this graph is 0.1 MPa, and the smallest tick mark on the x-axis is 0.02 mm. We can see from this chart that nickel foam under 2 psi of stress would strain much less than 0.02 mm, which is essentially zero.

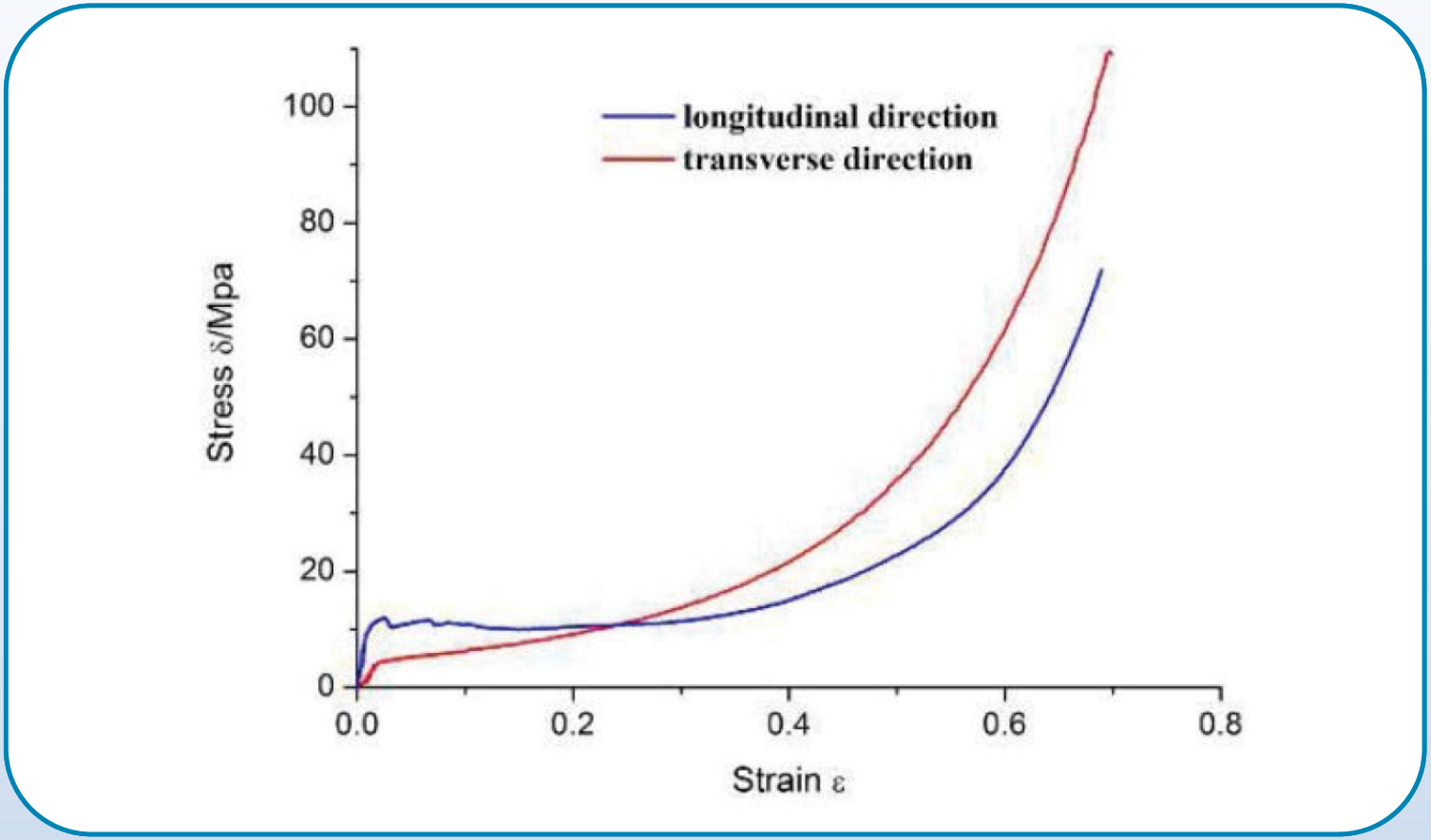
Ex. 2015

MEYST DECLARATION ¶ 80



Ex. 2015

MEYST DECLARATION ¶ 83



Ex. 2015

MEYST IPR2016-01692 DEP., pp. 26-27

Q. Yeah, let's -- let's focus on Figure 18. What forces, if any, would one of ordinary skill in the art expect these pieces to be subject to during normal operation of this device?

A. Gravity.

Q. Any other forces?

A. A force acting on it.

Well, if you have an airstream passing through it, the air would have some momentum, have some energy, and as it hits the porous component with the wire, that could result in some forces. Depending on how it's put together, there may be some forces between 81 and 82, but not necessarily.

Q. What --

A. You can't -- you can't tell by looking at it. If it's a line to line, there's no forces if they're just touching.

71

Ex. 1035

MEYST IPR2016-01692 DEP., p. 28

Q. Well, why would one choose an interfering fit over a contact fit?

A. Well, line to line would be maybe a little more difficult to maintain in terms of consistency of the parts. But like I said before, even if it wasn't an interference fit, it's not going to change the function of the device. It's going to work whether the porous component is slightly loose, line to line, or has an interference fit.

72

Ex. 1035

STURGES DEPOSITION, p. 25

Q And how do those piezoelectric elements 23 assist in atomization of the fluid, of the droplets?

A They provide energy such that the droplets can be made smaller.

Ex. 2030

Fontem Ex. 2038
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STURGES DEPOSITION, pp. 25-26

Q And how does that energy get from the item 23 to the droplet?

A It is conducted through the porous component and the cavity wall.

Q So that energy travels through the porous component, the cavity wall, and then how does it get from the cavity wall to the droplet?

A Through the air space in the cavity 10.

Q The energy travels across the air space, is that your testimony?

A Yes.

Ex. 2030

STURGES DEPOSITION, pp. 161-162

Q What's the known technique you just referred to?

A The known technique is the -- using a heating wire wrapped around a wick. That was known in Whittemore and it's being applied here as a simple substitution in place of the heating wire alone in Hon '043.

Q Why is it in place of the heating wire alone as opposed to in place of the mechanism in Hon '043 to provide liquid to the heating wire?

A I'm not understanding what you mean by the mechanism.

Q So you said the known technique is using a heating wire wrapped around a wick. What's the purpose of that known technique?

A To heat a liquid into -- It's a vaporizer, and that's what the atomizer does. It does the same thing.

Ex. 2016

Fontem Ex. 2038
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