

Patent Owner's Oral Hearing Demonstratives

AliveCor, Inc. (Petitioner)

v.

Apple Inc. (Patent Owner)

IPR2023-00948, IPR2023-00949 (U.S. Patent No. 10,866,619)

Before Hon. Ken Barrett, Scott A. Daniels, Robert L. Kinder

Instituted Grounds

Ground	Claims Challenged	Prior Art
1	1, 5, 9-10 (IPR2023-00948) 11, 14, 16-20 (IPR2023-00949)	Kim
2	1-10 (IPR2023-00948) 11-14, 16-20 (IPR2023-00949)	Kim
3	1, 3-10 (IPR2023-00948) 11-14, 16, 17, 19, 20 (IPR2023-00949)	Jung, Myers
4	1, 2, 6, 9 (IPR2023-00948) 11-17, 19 (IPR2023-00949)	Chang

Topics of Discussion

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The '619 Patent

Specification

The '619 Patent

Background

Many traditional electronics include buttons, keys, or other types of components. Many traditional buttons merely function as switches and are not able to sense a biometric characteristic. Additionally, some traditional buttons may be difficult to seal and may allow for ingress of liquid and other contaminants. The systems and devices described herein are directed to biometric sensing systems that may address these and other issues that are associated with some traditional buttons.

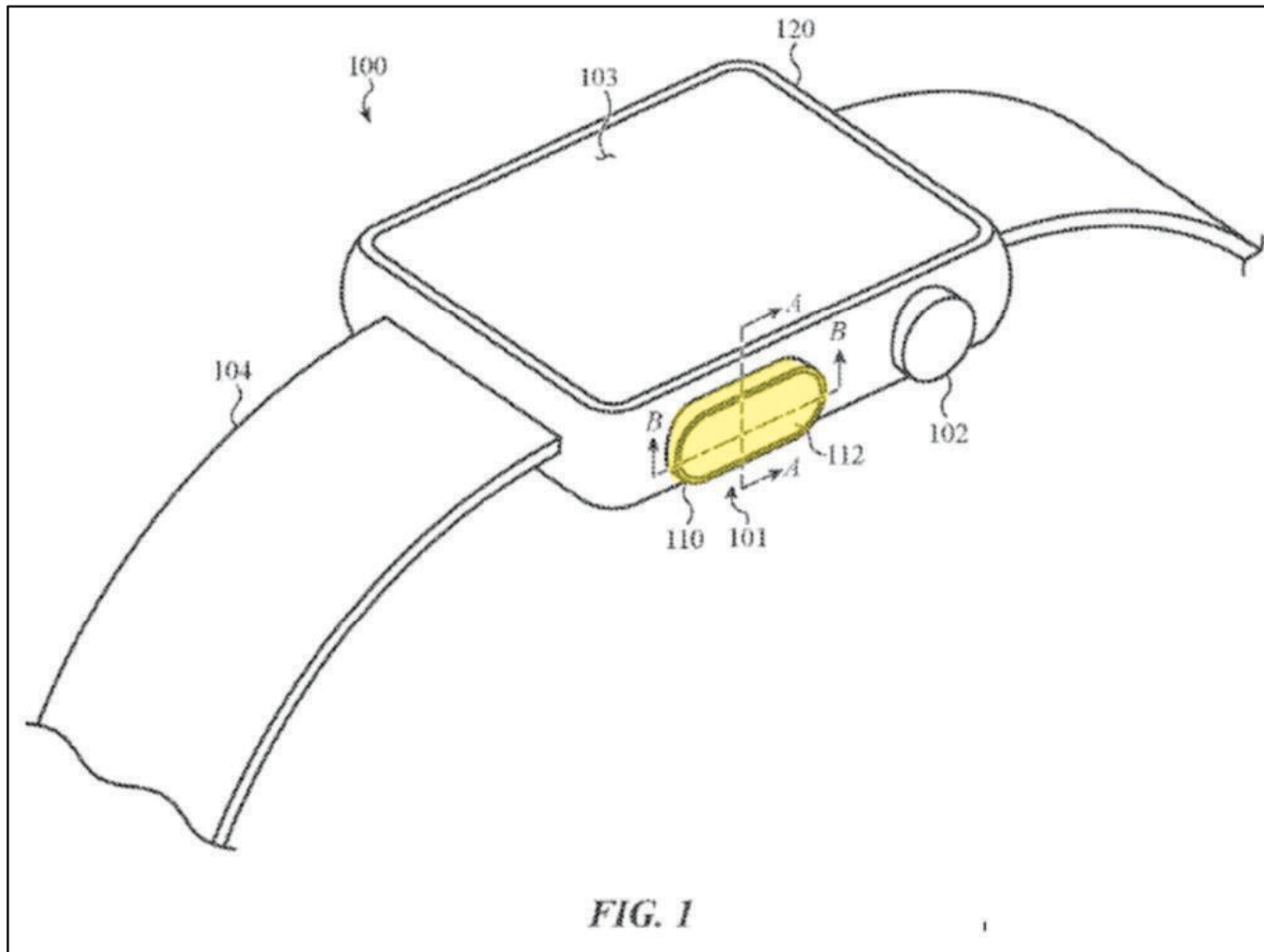
Ex-1001, 1:14-22 (cited in POR, 4)

Anthony Declaration

The '619 Patent is generally focused on novel device assembly structures with specific and concrete manufacturing improvements to prevent liquid or other contaminants from damaging the internal electronics. Ex-1001, 1:14-22, 1:26-40. For example, a biometric button assembly may include an input member, e.g., a button, which is configured to receive inputs, for example, a fingerprint and finger press from a user of the electronic device. *Id.* at Abstr.

Ex-2009, ¶18 (cited in POR, 4)

The '619 Patent



Inst. Dec., 5 (citing Ex-1001, FIG. 1) (annotation in original)

The '619 Patent

Ex. 1001, Fig. 2A

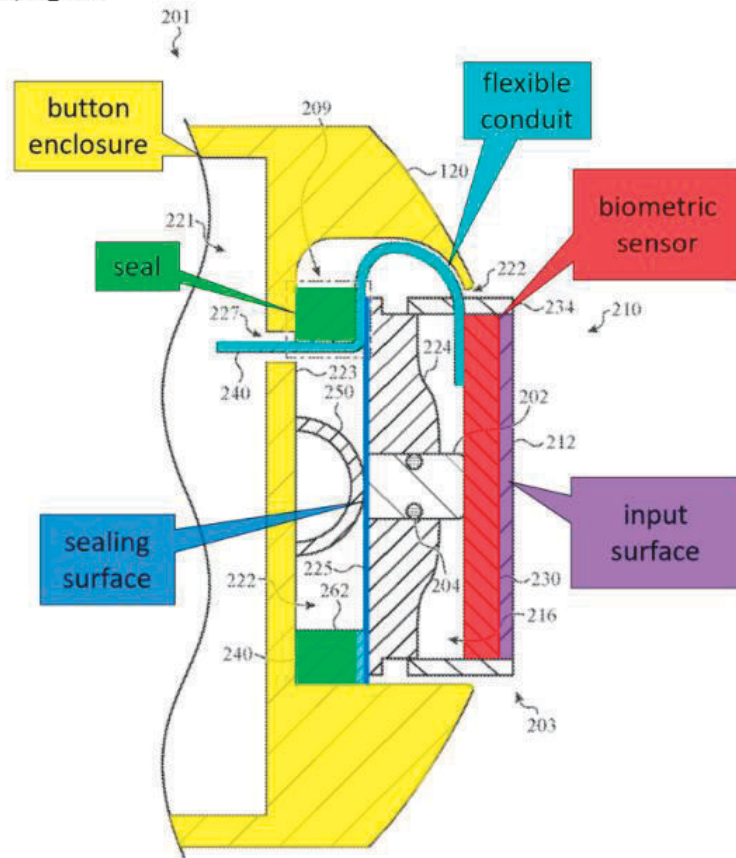


FIG. 2A

Pet., 3 (annotating Ex-1001, FIG. 2A)

Specification

In the embodiment of FIGS. 2A-B, the flexible conduit 240 and the seal 262 form a stack that may be referred to as a seal region 209. The flexible conduit 240 includes a portion that is disposed above or on top of the seal 262, the seal 262 disposed or on top of the enclosure shelf 223. The flexible conduit 240 portion stacked on top of the seal 262 is disposed below a sealing surface 225 of the button assembly 210.

Other configurations of the seal region 209 are possible.... In another embodiment, the seal 262 is overmolded about all or a portion of the portion of the flexible conduit 240 in contact with the seal 262.

Ex-1001, 9:37-54 (cited in Sur-Reply, 23)

Deficiencies in AliveCor's Grounds for Claim 1

Claim 1 – Overview

Claim 1

[1.pre]: An electronic device comprising:

[1.a]: an enclosure having an enclosed volume and ***an opening formed in a sidewall***;

[1.b]: a processor positioned in the enclosed volume;

[1.c]: a ***button assembly within the opening***, the button assembly comprising:

[1.c.i]: an ***input member*** having an input surface; and

[1.c.ii]: a ***biometric sensor positioned below the input member*** and configured to produce an output signal in response to a touch on the input surface, the output signal corresponding to a biometric characteristic

[1.d]: a ***seal*** positioned between a ***sealing surface*** of the button assembly and the enclosure; and

[1.e]: a ***flexible conduit*** coupled to the biometric sensor and configured to transmit the output signal to the processor; wherein:

[1.f]: a portion of the flexible conduit is ***sandwiched*** between the ***seal*** and the ***sealing surface*** or between the ***seal*** and the ***enclosure***.

POR, 6-7 (citing Ex-1001, 26:64-27:7)(emphasis added)

All Grounds Fail To Address The Requirements Of Claim 1

POR

[A]ll grounds advanced in the Petition are deficient because AliveCor fails to demonstrate that the asserted prior art discloses or renders obvious the distinct requirements of the **button assembly** of claim 1...

POR, 18

(1) comprise a **biometric sensor positioned below the input member**,

(2) be **within [an] opening [formed in a sidewall]**, and

(3) include a structural arrangement where **[a] portion of the flexible conduit is sandwiched** between (a) a **seal** and a **sealing surface**, or (b) the **seal** and the **enclosure**.

Ex-2009, ¶38 (cited in POR, 18); see *id.*, ¶54 (cited in POR, 27)

All Grounds Fail To Address The Requirements Of Claim 1

	Missing Claim 1 Limitation(s)
Grounds 1, 2 (Kim)	[1.c.ii]
Ground 3 (Jung, Myers)	[1.a], [1.c]
Ground 4 (Chang)	[1.f]

POR, 18; see *id.*, 35-38 (addressing Grounds 1, 2), 46-47 (addressing Ground 3), 61-63 (addressing Ground 4)

Grounds 1, 2 - Kim

Ground	Claims Challenged	Prior Art
1	1, 5, 9-10 (IPR2023-00948) 11, 14, 16-20 (IPR2023-00949)	Kim
2	1-10 (IPR2023-00948) 11-14, 16-20 (IPR2023-00949)	Kim
3	1, 3-10 (IPR2023-00948) 11-14, 16, 17, 19, 20 (IPR2023-00949)	Jung, Myers
4	1, 2, 6, 9 (IPR2023-00948) 11-17, 19 (IPR2023-00949)	Chang

AliveCor's Proposed Combination of Kim's Figure 10 and Kim's Figure 18

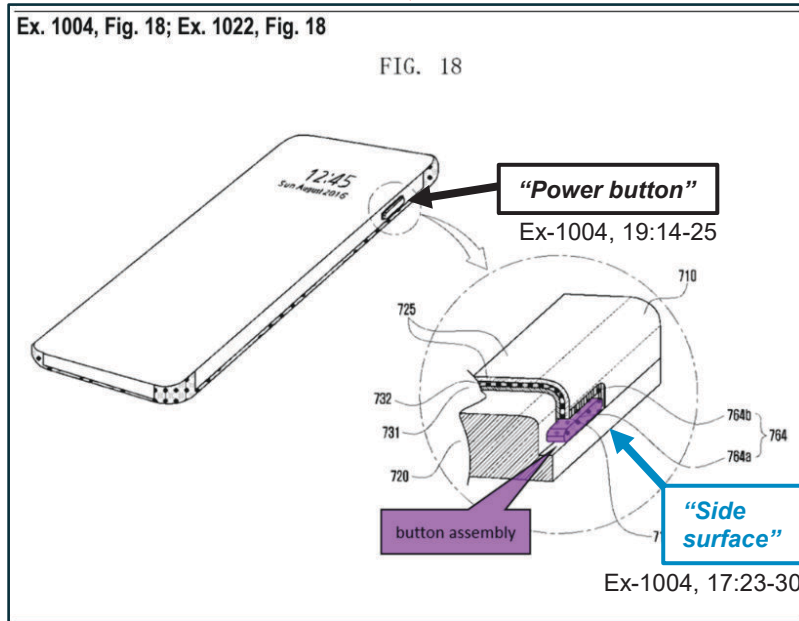
A POSITA Would Not Have Been Motivated to Combine Figures 10 and 18 of Kim

Petition

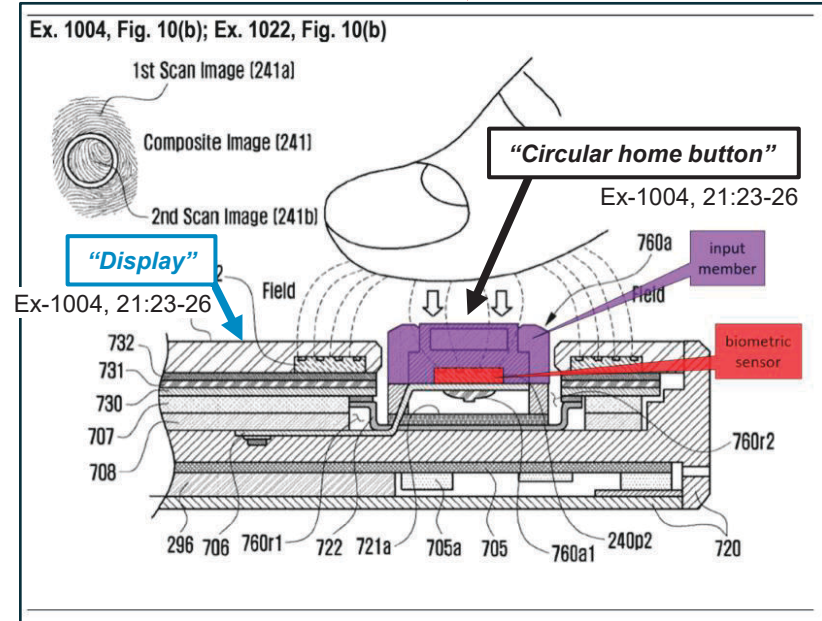
Kim discloses element [1.c.i] (i.e., Kim's "combined button"). **Figure 18** shows "a combined button" (Ex. 1004, 3:22-24; Ex. 1022, ¶18; Ex. 1003, ¶118).

Furthermore, **Figure 10(b)** shows a "cross-sectional view of [the] combined button" (Ex. 1004, 21:20-22; Ex. 1022, ¶166), which includes a surface that may be pressed downward (Ex. 1003, ¶119).

Pet., 17



Pet., 17 (citing Ex-1004, Figure 18)



Pet., 16 (citing Ex-1004, Figure 10)

A POSITA Would Not Have Been Motivated to Combine Figures 10 and 18 of Kim

Petition

Kim further contemplates the “combined button” is a button assembly within an opening formed in a sidewall

Pet., 14

Kim

“According to various embodiments of the present disclosure, the electronic device having a combined button implemented as a combination of a physical button and a virtual button in response to an increase in screen size is provided together with a method for controlling the combined button.”

Ex-1004, 2:29-34 (cited in POR, 21)

Anthony Declaration

This description does not equate the “combined button” term to a button assembly with specific components (e.g., fingerprint sensor), or with a specific positioning configuration within an electronic device (e.g., in an opening formed on a lateral surface). Kim’s Figure 6 embodiment, for example, includes an example of the “combined button” without a fingerprint sensor. Ex-1004, 16:48-54 (identifying “button 660” as the “combined button”)

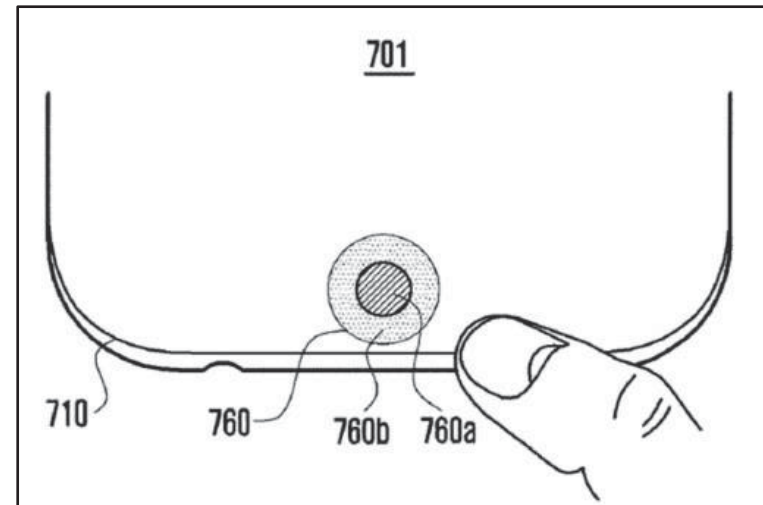
Ex-2009, ¶42 (cited in POR, 21)

A POSITA Would Not Have Been Motivated to Combine Figures 10 and 18 of Kim

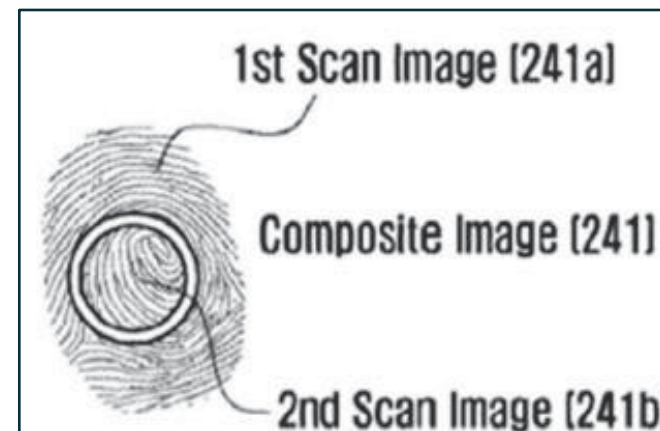
Anthony Declaration

As for Kim, a POSITA also would not have found the Kim Combination obvious. This is because fingerprint detection by the Figure 10 embodiment requires “compos[ing] fingerprint images 241a and 241b respectively obtained by the first and second fingerprint sensors into a single image 241.” Ex-1004, 21:63-22:3. Kim also does not teach or suggest incorporating this specific sensor configuration into the optional fingerprint sensor of the “combined device” of the Figure 18 embodiment.

Ex-2009, ¶67 (cited in POR, 31)



Ex-1004, FIG. 10(a) (cited in POR, 34)



Ex-1004, FIG. 10(b) (excerpt) (cited in POR, 36)

A POSITA Would Not Have Been Motivated to Combine Figures 10 and 18 of Kim

Anthony Declaration

Specifically, a POSITA would have understood that button 760 shown in Figure 10(b) cannot simply be taken and used as the button 764 in Figure 18. The buttons have different shapes and sizes, and the surface area of the device at the front (Figure 10(b)) and lateral (Figure 18) surfaces of the device is significantly different.

Ex-2009, ¶57 (cited in POR, 29)

Anthony Declaration

As such, modifications would be needed in terms of the size and shape of the components of the button assembly, how you seal the button, and how you route electrical connections to the button. AliveCor does not account for these considerations. The Petition also does not explain how a POSITA would have modified the Figure 10(b) button to make it work in the Figure 18 embodiments and still meet all requirements of the **button assembly**.

Ex-2009, ¶59 (cited in POR, 30-31)

A POSITA Would Not Have Been Motivated to Combine Figures 10 and 18 of Kim

Anthony Declaration

By the relevant time frame (around 2015-2017, “Relevant Time Frame”), a POSITA would have been aware of **several technical complexities** associated with this modification. These complexities would have discouraged a POSITA to combine the teachings of the asserted prior art in the manner proposed by AliveCor.

Ex-2009, ¶60 (cited in POR, 29)

...**predictably increased device thickness** to, for example, accommodate the requisite structures/components...

Ex-2009, ¶61 (cited in POR, 29)

...they often are **unable to capture sufficient information** from a single touch input...

Ex-2009, ¶65 (cited in POR, 29)

...it would have been **challenging to integrate techniques required to enable on a narrow topology**.

Ex-2009, ¶65 (cited in POR, 29)

...**require mechanical (dynamic gesture) input (swiping fingerprint motion)** to enable a sufficiently large finger pad area for sufficient fingerprint detection and/or recognition accuracy

Ex-2009, ¶66 (cited in POR, 29)

AliveCor's Mapping To Claim 1 Based on Kim

Kim Fails to Satisfy [1.c.ii]

	Missing Claim 1 Limitation(s)
Grounds 1, 2 (Kim)	[1.c.ii]

POR, 18; see *id.*, 35-38 (addressing Grounds 1, 2), 46-47 (addressing Ground 3), 61-63 (addressing Ground 4)

[1.c.ii]

a **biometric sensor** positioned below the input member and configured to produce an output signal in response to a touch on the input surface, the output signal corresponding to a biometric characteristic

POR, 35; see Ex-1001, 26:64-27:15 (claim 1)

Kim Fails to Satisfy [1.c.ii]

[1.c.ii]

a **biometric sensor** positioned below the input member and configured to produce an output signal in response to a touch on the input surface, the output signal corresponding to a biometric characteristic

POR, 35; see Ex-1001, 26:64-27:15 (claim 1)

Anthony Declaration

...the fingerprint sensor 240p1 is co-planar with (i.e., not positioned below) a body representing physical button 760a (which the Petition maps to the **input member**).

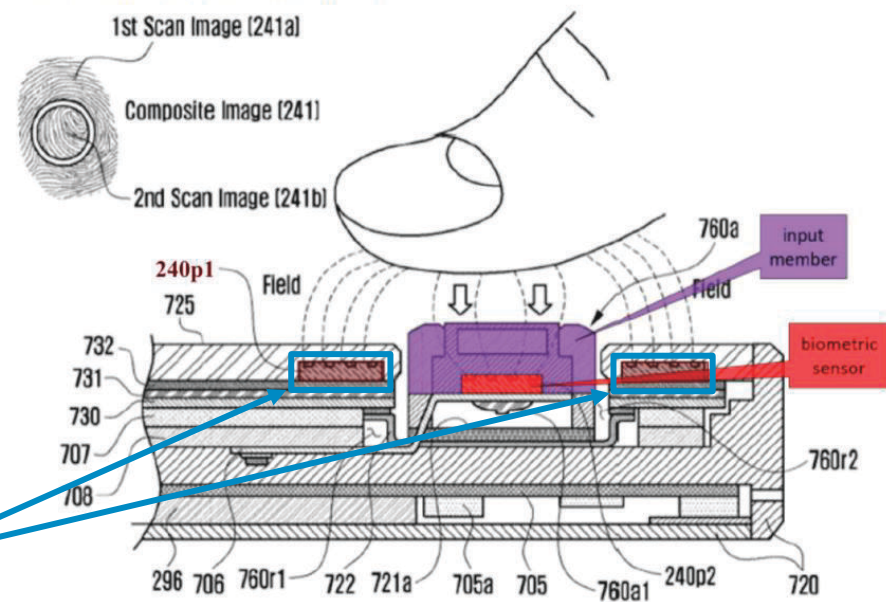
Ex-2009, ¶182 (cited in POR, 36)

POR

AliveCor omitted fingerprint sensor 240p1 from its mapping to the biometric sensor because including it would have left its mapping unable to satisfy the requirement in limitation [1.c.ii]...

POR, 36-37

Ex-1004, Fig. 10(b); Ex-1022, Fig. 10(b)



Pet., 60 (further annotated to include maroon elements)

POR, 37 (citing Pet., 60 and further annotating Ex-1004(b) to add maroon highlight)

Kim Fails to Satisfy [1.c.ii]

Anthony Declaration

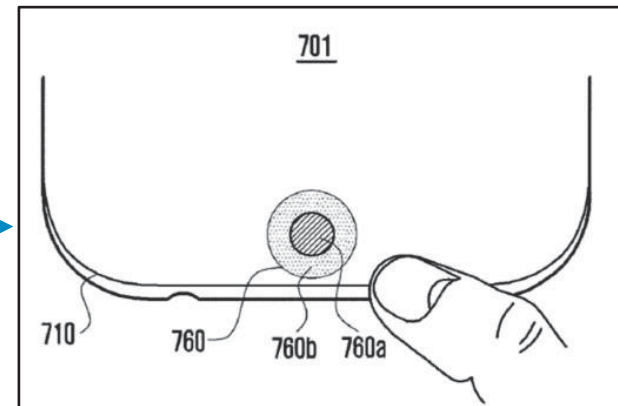
The omission of fingerprint sensor 240p1 **contradicts** how a POSITA would have understood functionality of the fingerprint sensor assembly of Kim's Figure 10 embodiment.

Ex-2009, ¶82 (cited in POR, 36)

Kim

The electronic device 701 may acquire (or capture) the user fingerprint through the first fingerprint sensor corresponding to the physical button 760a and the second fingerprint sensor corresponding to the virtual button 760b in the home button 760.

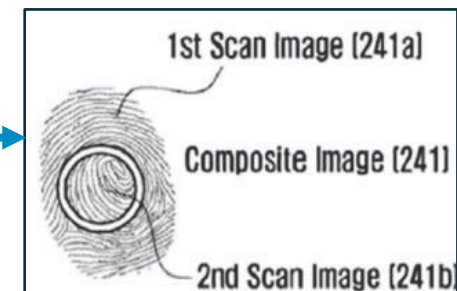
Ex-1004, 21:63-22:3 (cited in POR, 37-38)



Ex-1004, FIG. 10(a) (cited in POR, 34)

The electronic device 701 may compose fingerprint images 241a and 241b respectively obtained by the first and second fingerprint sensors into a single fingerprint image 241.

Ex-1004, 21:63-22:3 (cited in POR, 37-38)



Ex-1004, FIG. 10(b) (excerpt) (cited in POR, 36)

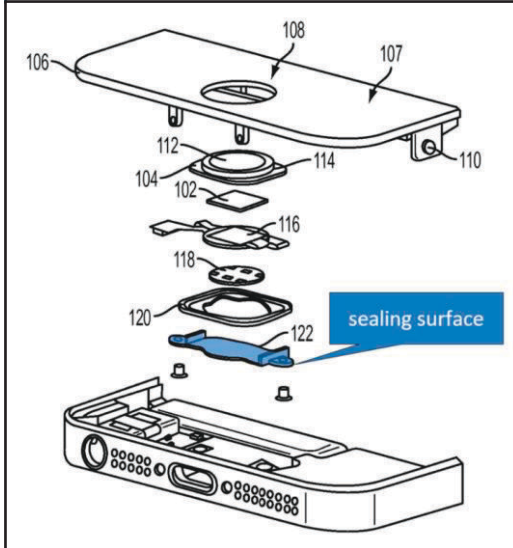
Ground 3 – Jung, Myers

Ground	Claims Challenged	Prior Art
1	1, 5, 9-10 (IPR2023-00948) 11, 14, 16-20 (IPR2023-00949)	Kim
2	1-10 (IPR2023-00948) 11-14, 16-20 (IPR2023-00949)	Kim
3	1, 3-10 (IPR2023-00948) 11-14, 16, 17, 19, 20 (IPR2023-00949)	Jung, Myers
4	1, 2, 6, 9 (IPR2023-00948) 11-17, 19 (IPR2023-00949)	Chang

AliveCor's Proposed Combination of Jung and Myers

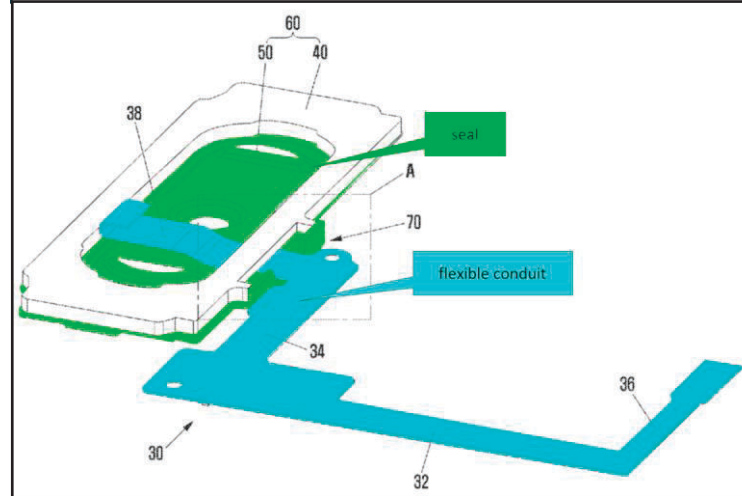
AliveCor's Proposed Combination of Jung and Myers

Petition (citing Myers)

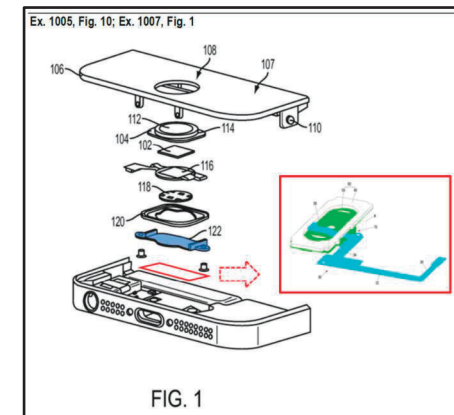


Pet., 62 (annotating Ex-1007, Fig. 1)

Petition (citing Jung)



Pet., 63 (citing Ex-1005, Fig. 10)

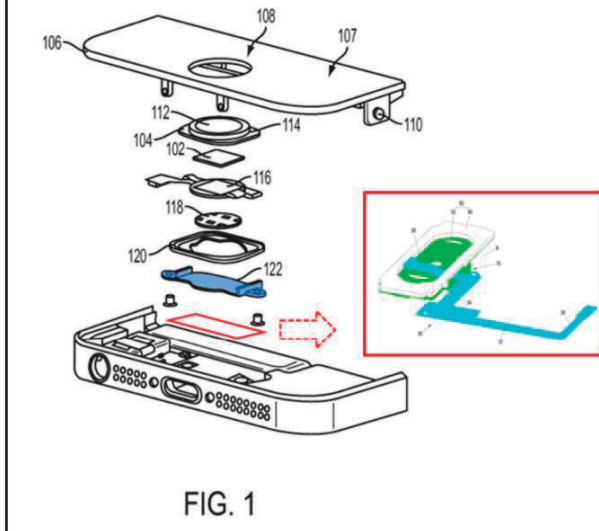


Pet., 64 (annotating Ex-1005, Fig. 10 and Ex-1007, Fig. 1)

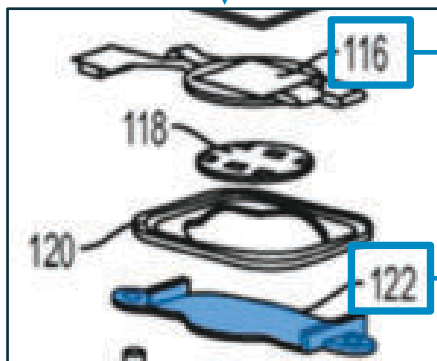
A POSITA Would Not Have Been Motivated to Combine Jung and Myers

Petition

Ex. 1005, Fig. 10; Ex. 1007, Fig. 1



Pet., 64 (annotating Ex-1005, Fig. 10 and Ex-1007, Fig. 1)



Anthony Declaration

Even if a POSITA would have considered using Jung's flexible printed circuit board 30 to connect to Myers' button, the POSITA would have understood that Jung's flexible printed circuit board 30 would need to be arranged to connect to Myers' button at the same location as the flexible element 116.

That location, as shown in Myers' Fig. 1, is clearly above, not below, Myers' button support plate 122.

Ex-2009, ¶97 (cited in POR, 44)

Anthony Declaration

If a POSITA would have considered adding Myers' button support plate 122 to Jung, the POSITA would have used Myers' button support plate 122 to support Jung's dome switch, resulting in Myers' button support plate 122 being located under the silicon rubber 50. With this configuration, Jung's flexible printed circuit board 30 would not be sandwiched between Myers' button support plate 122 and Jung's silicon rubber 50.

Ex-1007, [0049] (cited in POR, 44)

A POSITA Would Not Have Been Motivated to Combine Jung and Myers

Anthony Declaration

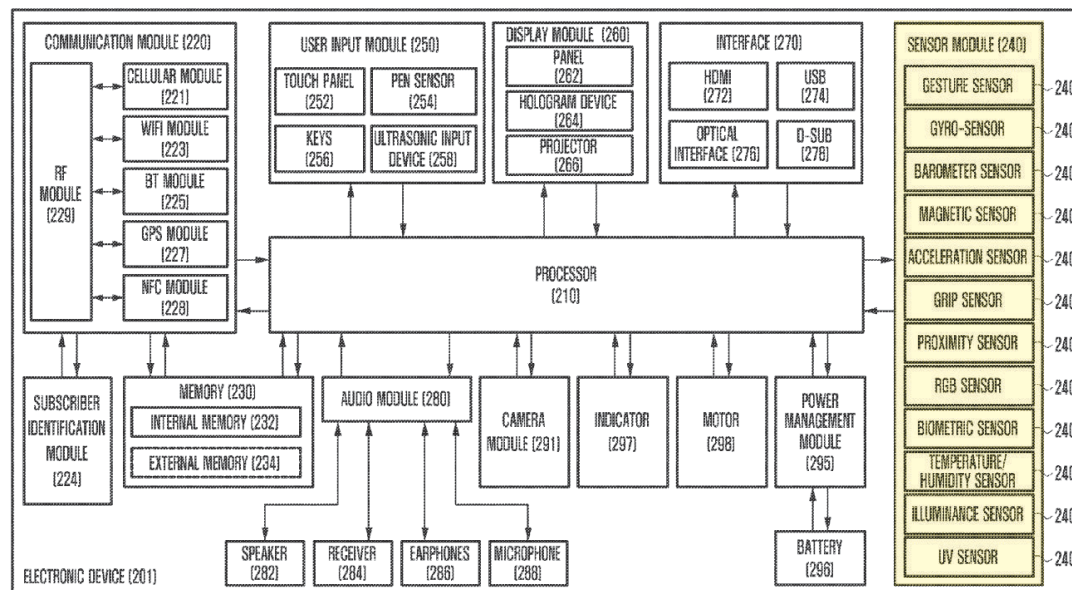
The number of sensing elements described in [paragraph 60] would have suggested to a POSITA that Jung does not disclose or suggest specifically incorporating a fingerprint sensor in a home-key (or any other button assembly of an electronic device).

Ex-2009, ¶87 (cited in POR, 39-40)

Jung

Referring to FIG. 2, the hardware 201 may include one or more processors 210, a subscriber identification module (SIM) card 224, a communication module 220, a memory 230, a sensor module 240, a user input module 250, a display module 260, an interface 270, an audio coder/decoder (codec) 280, a camera module 291, a power management module 295, a battery 296, an indicator 297, a motor 298 and any other similar and/or suitable components.

Ex-1005, [0050] (cited in Pet., 57)



Ex-1005, FIG. 2 (cited in Pet., 24)

A POSITA Would Not Have Been Motivated to Combine Jung and Myers

Petition

...a POSITA would have been motivated to waterproof Meyers's "fingerprint sensor" button assembly using Jung's "key-waterproof structure" and in view of the well known understanding that electronic components should be protected from contaminants...

Pet., 51

Anthony Declaration

...a POSITA would not perceived any benefit from incorporating Jung's key-waterproofing structures into [Myers'] button assembly

Ex-2009, ¶91 (cited in POR, 43)

Myers

A gasket 1025 such as a silicone gasket, may form a seal between the trim 805 and a housing of the electronic device...The gasket may prevent dirt, sweat, water and the like from entering the interior of the electronic device.

Ex-1007, [0130] (cited in POR, 44)

AliveCor's Mapping To Claim 1 Based on Jung and Myers

Jung-Myers Fails to Satisfy [1.a] and [1.c]

	Missing Claim 1 Limitation(s)
Ground 3 (Jung, Myers)	[1.a], [1.c]

POR, 18; see *id.*, 35-38 (addressing Grounds 1, 2), 46-47 (addressing Ground 3), 61-63 (addressing Ground 4)

<i>[1.a], [1.c]</i>
a <i>button assembly</i> within the <i>opening</i> [formed in a sidewall]...

POR, 35; see Ex-1001, 26:64-27:15 (claim 1)

Jung-Myers Fails to Satisfy [1.a] and [1.c]

[1.a], [1.c]

a **button assembly** within the **opening** [formed in a sidewall]...

POR, 35; see Ex-1001, 26:64-27:15 (claim 1)

POR

But even the cited portion of Jung (Ex-1005, [0123]) fails to disclose, teach, or suggest any particular location of a “home-key.”

POR, 46 (citing Pet., 55-56)

Jung

Although the description for the key-waterproof structure of the present disclosure is made of the home-key in the specification, other keys for performing various functions rather than the home-key may be applied to the key-waterproof structure of the present disclosure.

Ex-1005, [0123] (cited in Pet., 55-56, and POR, 46)

Anthony Declaration

A POSITA would have recognized that small dimension and high-radius curves associated with lateral surfaces are **challenging to waterproof** because complex geometry introduces more sources of dimensional variation.

Ex-2009, ¶101 (cited in POR, 47)

Ground 4 – Chang

Ground	Claims Challenged	Prior Art
1	1, 5, 9-10 (IPR2023-00948) 11, 14, 16-20 (IPR2023-00949)	Kim
2	1-10 (IPR2023-00948) 11-14, 16-20 (IPR2023-00949)	Kim
3	1, 3-10 (IPR2023-00948) 11-14, 16, 17, 19, 20 (IPR2023-00949)	Jung, Myers
4	1, 2, 6, 9 (IPR2023-00948) 11-17, 19 (IPR2023-00949)	Chang

AliveCor's Mapping To Claim 1 Based on Chang

Chang Fails to Satisfy [1.f]

	Missing Claim 1 Limitation(s)
Ground 4 (Chang)	[1.f]

POR, 18; *see id.*, 35-38 (addressing Grounds 1, 2), 46-47 (addressing Ground 3), 61-63 (addressing Ground 4)

[1.f]

a portion of the flexible conduit is **sandwiched** between the **seal** and the **sealing surface** or between the seal and the **enclosure**.

POR, 35; *see* Ex-1001, 26:64-27:15 (claim 1)

Chang Fails to Satisfy [1.f]

[1.f]

a portion of the flexible conduit is sandwiched between the seal and the sealing surface or between the seal and the enclosure.

POR, 35; see Ex-1001, 26:64-27:15 (claim 1)

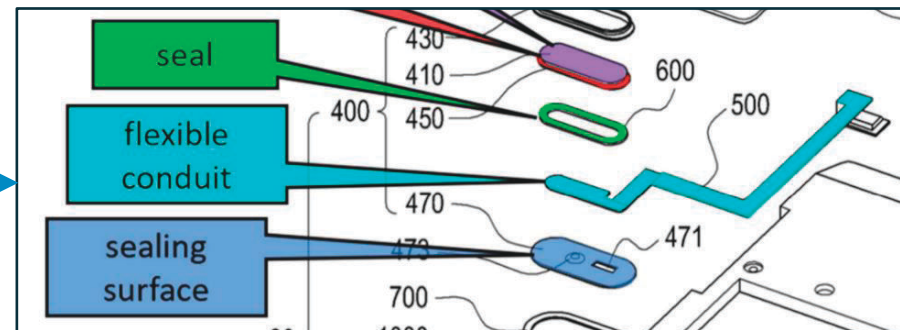
Anthony Declaration

As for the sealing member 600 depicted in Chang's Figure 3, Chang's key module does not satisfy the requirements of limitation [1.f] because, when assembled, **conductive member 500 (mapped to flexible conduit) is co-planar (i.e., not positioned below) the sealing member 600 (mapped to seal)**

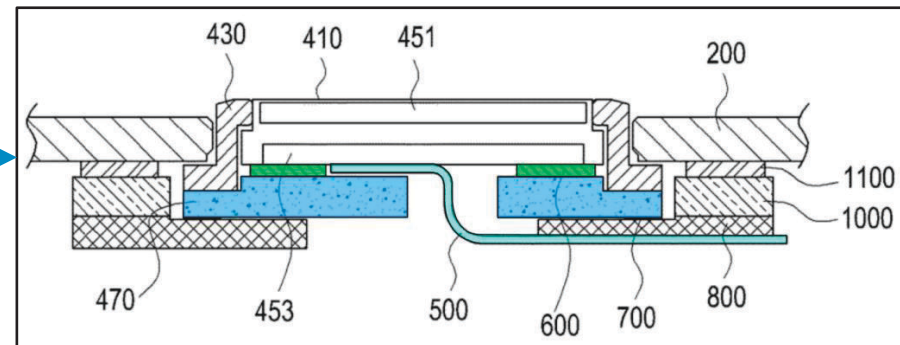
Ex-2009, ¶129 (cited in POR, 62)

Chang's Figure 10...confirms the assembly configuration of Chang's key module...

Ex-2009, ¶130 (cited in POR, 62)



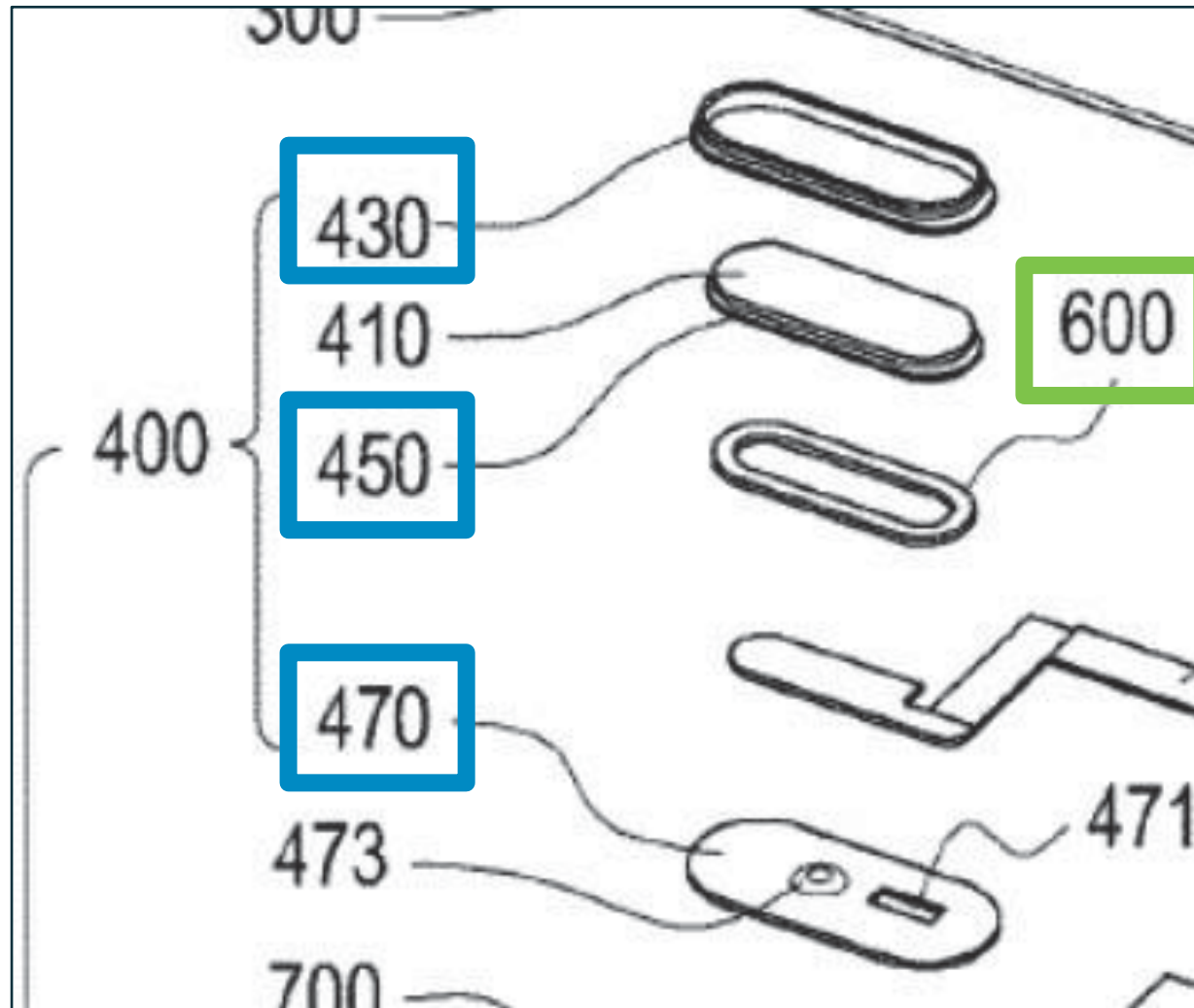
Ex-1015, FIG. 3 (excerpt) (cited and annotated in Pet., 81)



Ex-1015, FIG. 10 (cited and annotated in POR, 63)

AliveCor's Proposed Alterations to Chang

Chang's Unaltered Sealing Member 600



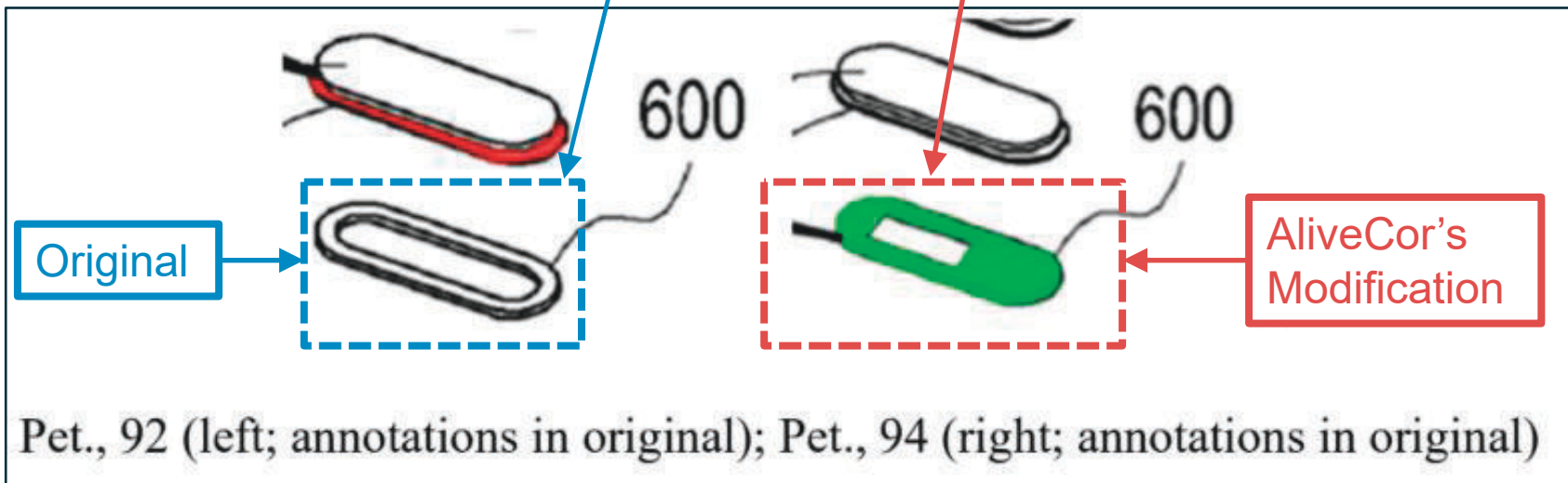
Ex-1015, Fig. 3 (cited in POR, 17)

AliveCor's Alterations Chang's Sealing Member 600

Anthony Declaration

The Petition **alters** the **original annular structure** of sealing member 600 (below, left) within the key module depicted in Chang's Figure 3 (left, below) with a **solid structure** includes a rectangular window (right, below):

Ex-2009, ¶48 (cited in POR, 24)



Pet., 92 (left; annotations in original); Pet., 94 (right; annotations in original)

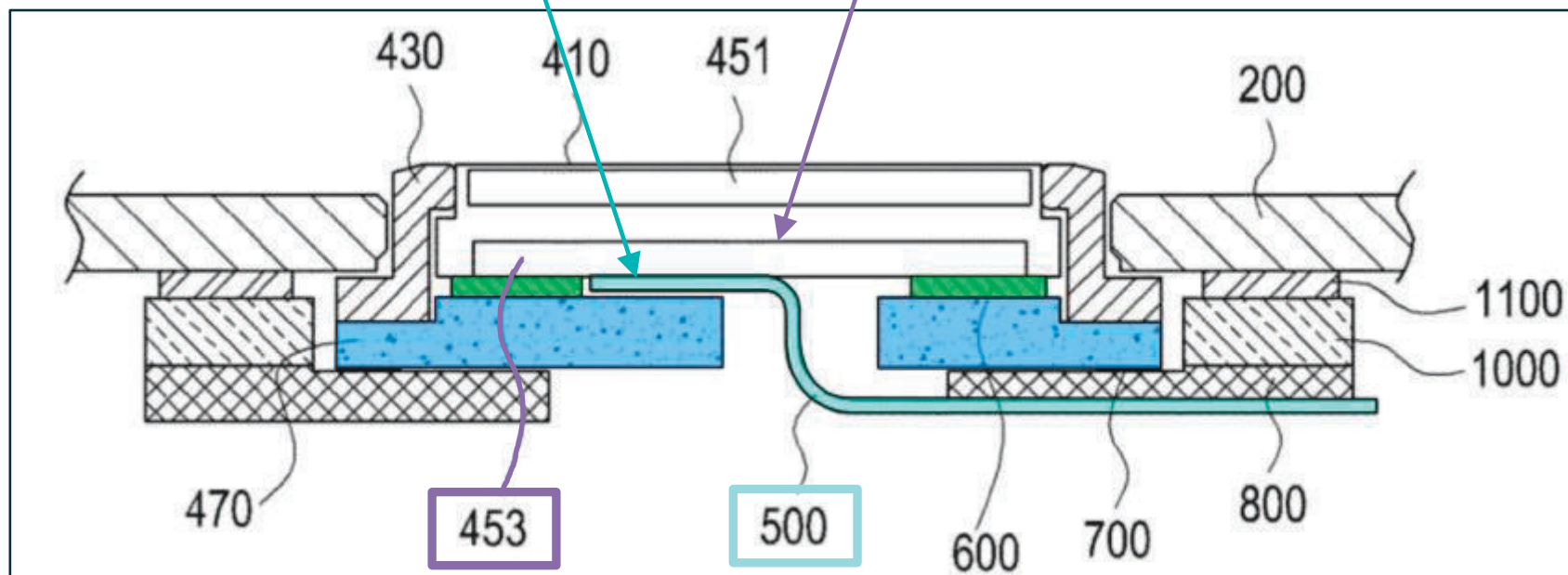
POR, 24 (citing Pet. at 92 and 94)

Chang's Unaltered Sealing Member 600

Chang

...the mutual contact faces between the flexible conductive member 500 and the circuit region 453 may be designed to be bonded with a Thin FPCB Antenna (TFA) or hot bar soldering structure or an FPCB contact structure. With this bonding, the flexible conductive member 500 and the circuit region 453 may be electrically connected to each other...

Ex-1015, 13:1-10 (cited in Pet., 88-89)



Ex-1015, Fig. 10 (cited in POR, 63)

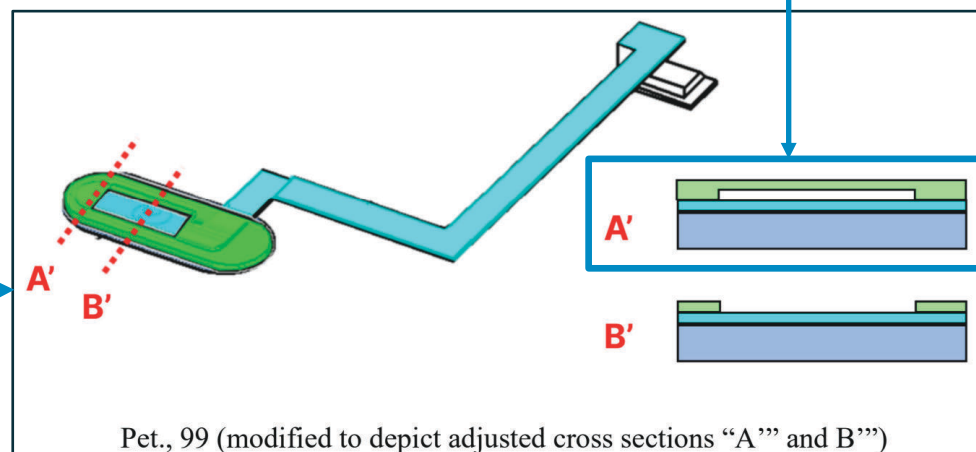
A POSITA Would Not Have Been Motivated to Alter Chang's Sealing Member 600

Sur-Reply

Setting this aside, the portrayal in page 24 of the Reply is still wrong because AliveCor disregards that a portion of conductive member 500 along the cross-section is still below a body of the altered sealing member (because, as altered, the sealing member has a solid body).

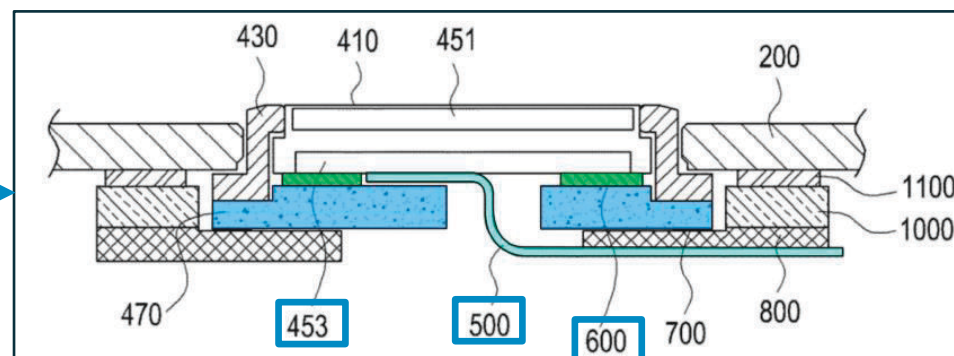
In contrast, Figure 10 of Chang shows a co-planar arrangement of conductive member 500 and sealing member 600.

Sur-Reply, 15



Pet., 99 (modified to depict adjusted cross sections "A'" and "B'")

POR, 60 (modifying annotated figure shown in Pet., 99)



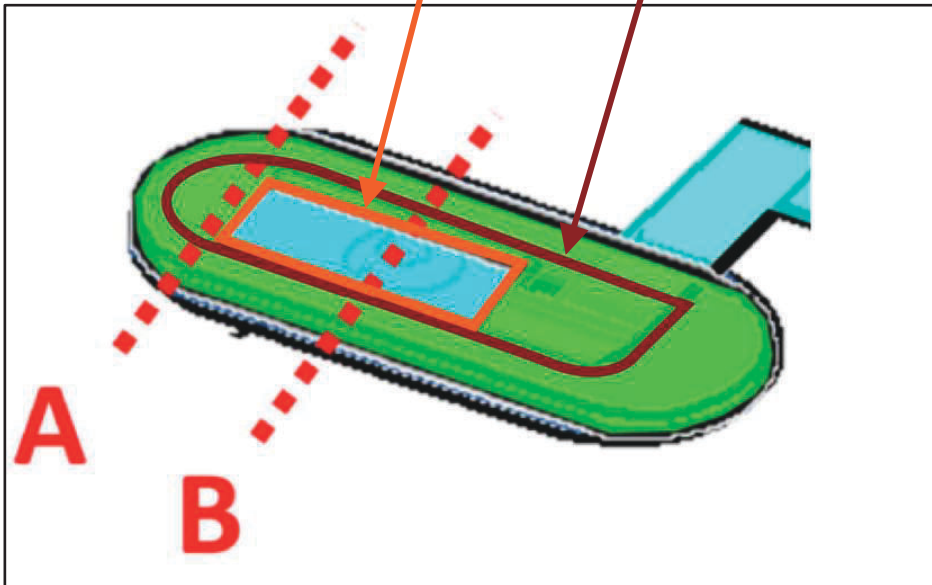
Ex-1015, Fig. 10 (cited in POR, 63)

A POSITA Would Not Have Been Motivated to Alter Chang's Sealing Member 600

Anthony Declaration

...when the Chang Combination is assembled, the circular portion of the **conductive member 500** is **required to be positioned below the sealing member 600** because the area defined by its **boundaries** (outlined below in brown below) is **larger** than the area provided by the **rectangular window** (outlined below in orange).

Ex-2009, ¶123 (cited in POR, 57-58)



POR, 53 (citing Pet., 98, and further annotating to add brown and orange outlines)

Chang

...the flexible conductive member 500 and the circuit region 453 may be **electrically connected** to each other...

Ex-1015, 13:1-10 (cited in Pet., 88-89)

Anthony Declaration

...a POSITA also would not have implemented the assembly of the Chang Combination...because **this** would have **prevented electrical connection** to the conductive member 500.

Ex-2009, ¶127 (cited in POR, 60-61)

Corresponding Claim Limitations

Claim 1	Claim 11	Claim 16
[1.a]	[11.a]	[16.a]
[1.c]	[11.c]	[16.e]
[1.c.ii]	[11.c.i]	[16.e.iii]
[1.f]	[11.g]	[16.g]

949 POR, 15; *see id.*, 33-37 (addressing Grounds 1, 2), 45-46 (addressing Ground 3), 60-62 (addressing Ground 4)

All Grounds Fail To Address The Requirements Of Claims 11 and 16

	Missing Claim 11 Limitation(s)
Grounds 1, 2 (Kim)	[11.c.i]
Ground 3 (Jung, Myers)	[11.a], [11.c], [11.c.i]
Ground 4 (Chang)	[11.g]

949 POR, 15; *see id.*, 33-37 (addressing Grounds 1, 2), 45-46 (addressing Ground 3), 60-62 (addressing Ground 4)

	Missing Claim 16 Limitation(s)
Grounds 1, 2 (Kim)	[16.e.iii]
Ground 3 (Jung, Myers)	[16.a], [16.e]
Ground 4 (Chang)	[16.g]

949 POR, 15; *see id.*, 33-37 (addressing Grounds 1, 2), 45-46 (addressing Ground 3), 60-62 (addressing Ground 4)

Deficiencies in AliveCor's Grounds for Claim 4

Claim 4 – Overview

Claim 4

The electronic device of claim 1, wherein the seal is overmolded around the portion of the flexible conduit.

Ex-1001, 27:34-35 (cited in Pet., 40)

[1.f]

[1.f]: a portion of the flexible conduit is **sandwiched** between the **seal** and the **sealing surface** or between the **seal** and the **enclosure**.

Ex-1001, 26:65-27:15 (cited in Pet., 25)

Claim 4 – Overview

Claim 4

The electronic device of claim 1, wherein the seal is **overmolded** around the portion of the flexible conduit.

Ex-1001, 27:34-35 (cited in Pet., 40)

Berger Declaration

...overmolding refers to a technique in which a **one material is molded over a substrate**, often by injection

Ex-1003, ¶206 (cited in Sur-Reply, 22)

Ground 2 – Kim (Claim 4) (IPR2023-00948)

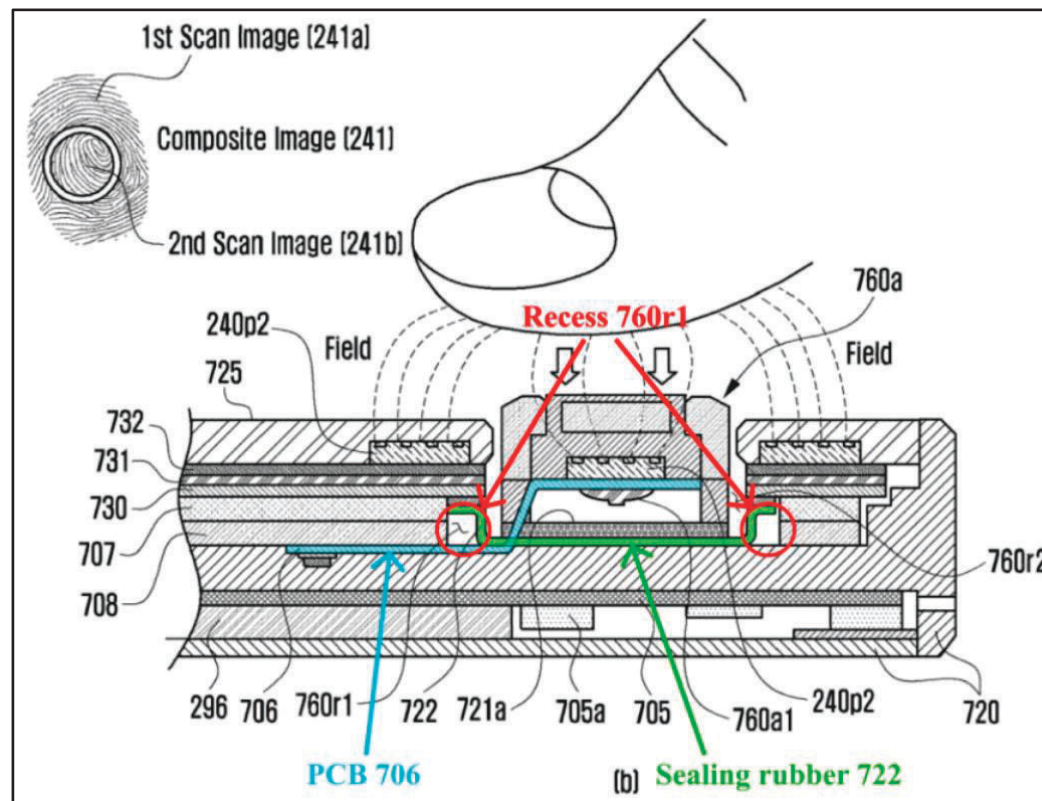
Ground	Claims Challenged	Prior Art
1	1, 5, 9-10	Kim
2	1-10	Kim
3	1, 3-10	Jung, Myers
4	1, 2, 6, 9	Chang

Kim's Figure 10 Does Not Disclose Overmolding

Anthony Declaration

...If the rubber seal 722 was formed by overmolding as AliveCor defines it, the edges of the rubber seal 722 would not be raised with the recess 760r1 present.

Ex-2009, ¶140 (cited in POR, 66)



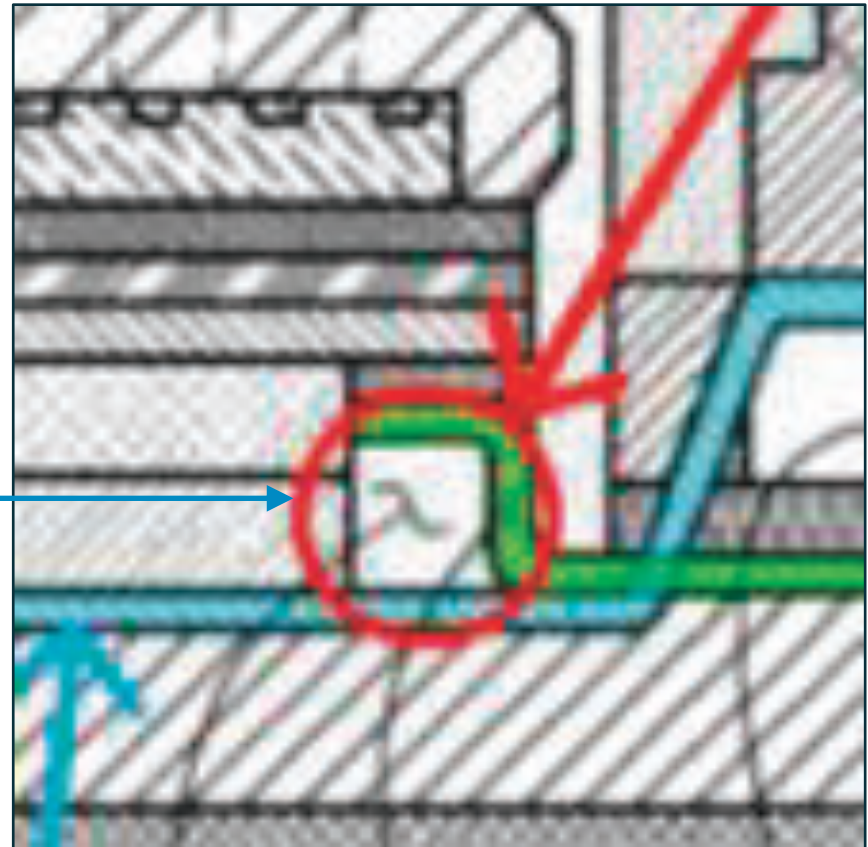
Ex-1005, FIG. 10(b) (cited in Sur-Reply, 21)

Kim's Figure 10 Does Not Disclose Overmolding

Anthony Declaration

...If the rubber seal 722 was formed by overmolding as AliveCor defines it, the edges of the rubber seal 722 would not be raised with the recess 760r1 present.

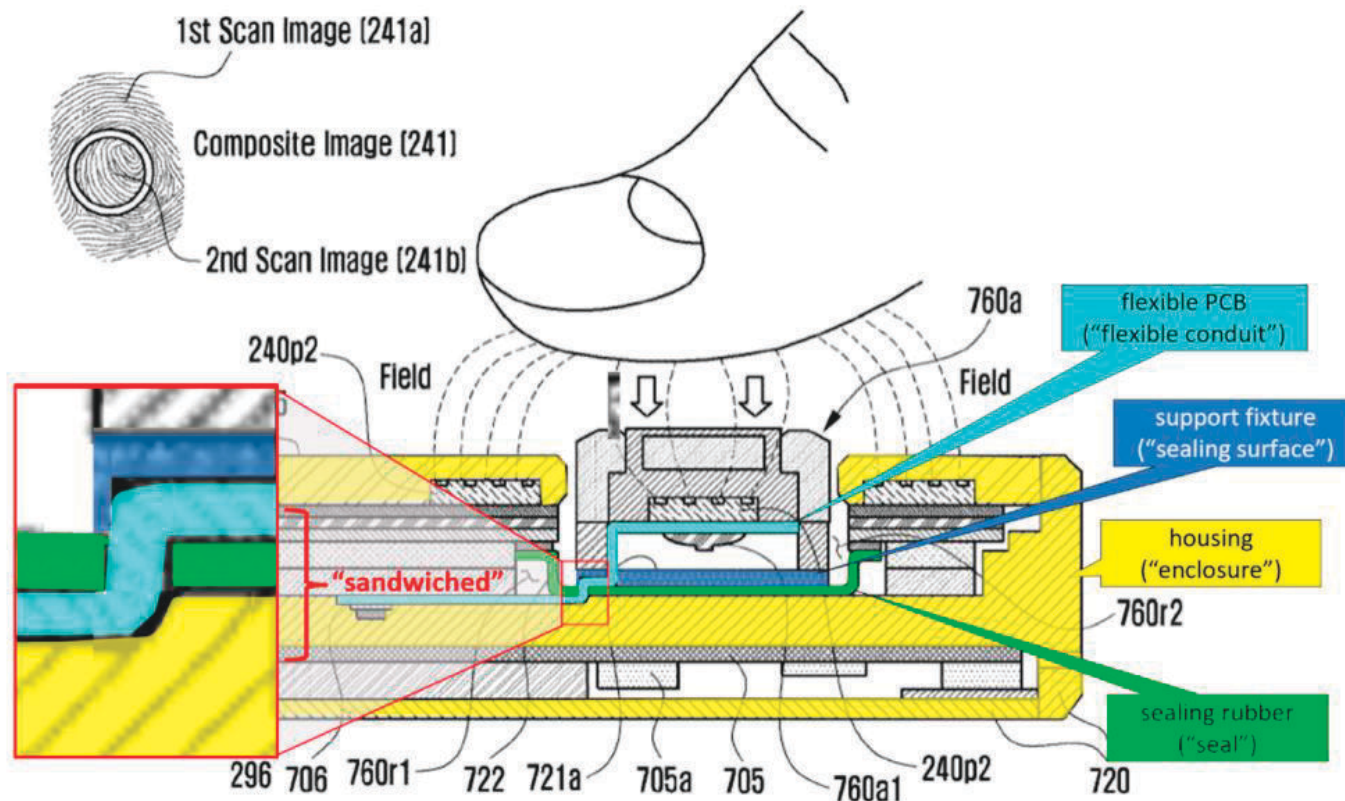
Ex-2009, ¶140 (cited in POR, 66)



Ex-1005, FIG. 10(b) (cited in Sur-Reply, 21) (excerpt)

Kim's Figure 10 Does Not Disclose Overmolding

Ex. 1004, Fig. 10(b) (altered and annotated); Ex. 1022, Fig. 10(b)



Pet., 39 (annotating Ex-1004, FIG. 10)

Ground 3 – Jung, Myers (Claim 4) (IPR2023-00948)

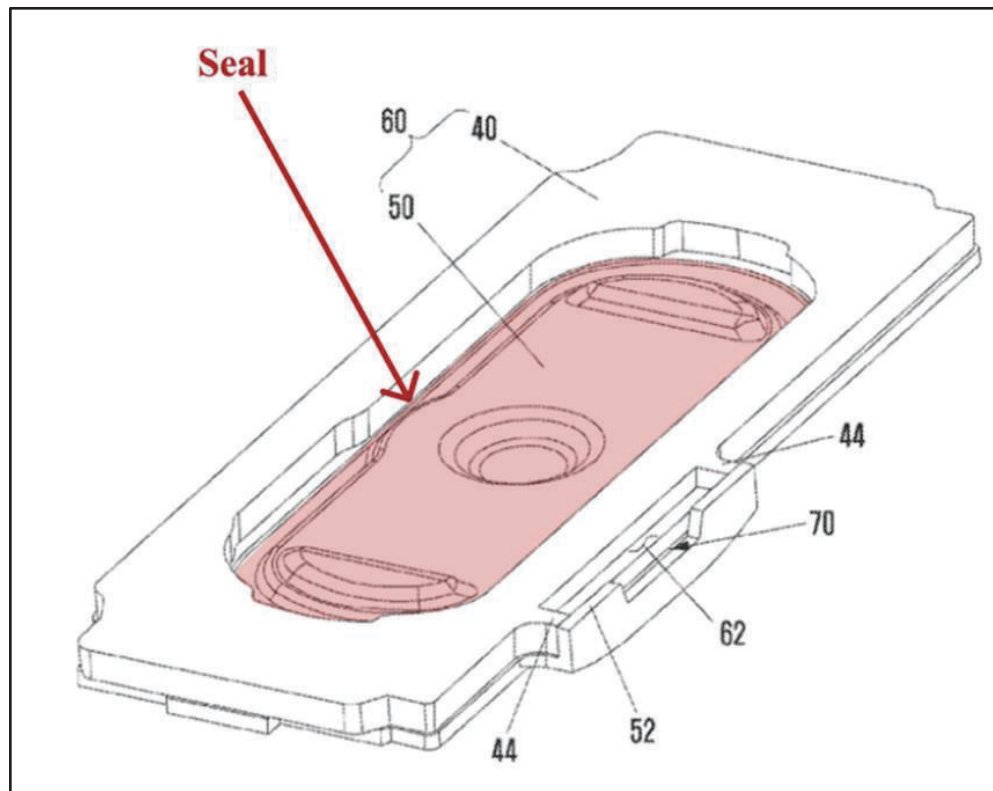
Ground	Claims Challenged	Prior Art
1	1, 5, 9-10	Kim
2	1-10	Kim
3	1, 3-10	Jung, Myers
4	1, 2, 6, 9	Chang

Jung Does Not Disclose Overmolding

Anthony Declaration

Jung's flexible circuit board 30 and silicon rubber 50 do not have an injection based connection...Jung's bracket 40 and silicon rubber 50 are sealed with an opening 70 where the flexible circuit board 30 is later inserted.

Ex-2009, ¶145 (cited in POR, 69-70)



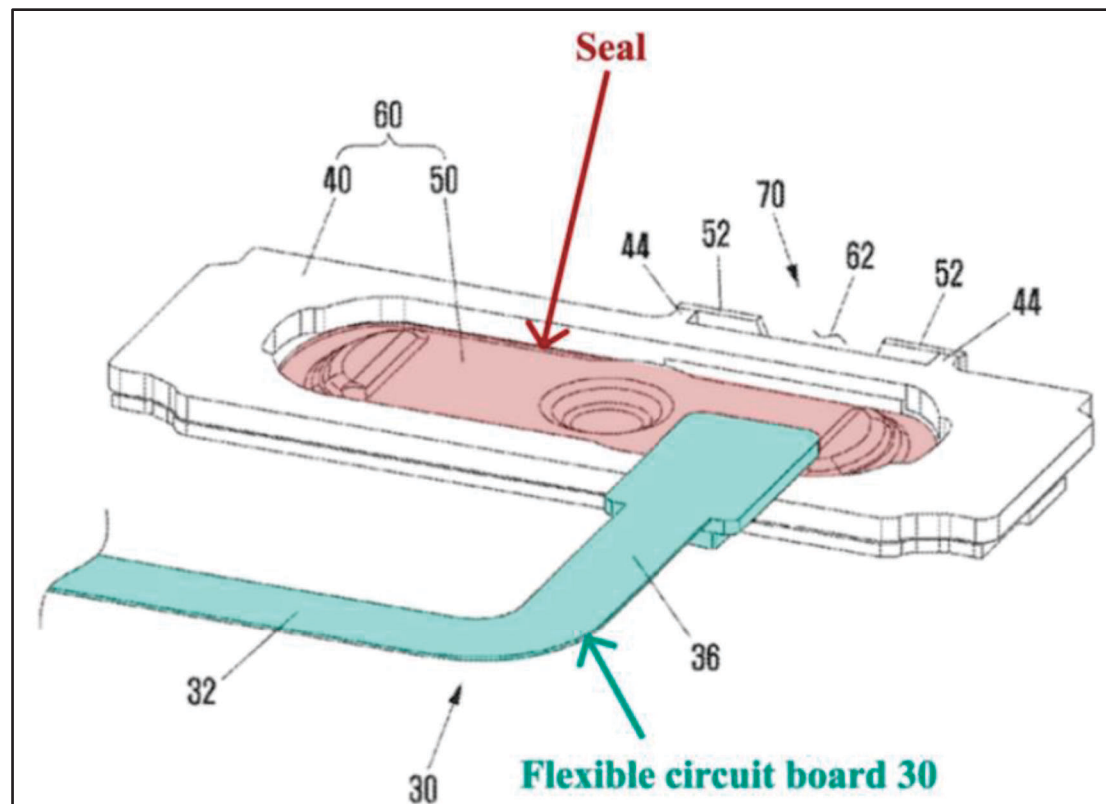
Ex-1005, FIG. 8 (cited in Sur-Reply, 26)

Jung Does Not Disclose Overmolding

Anthony Declaration

Jung's flexible circuit board 30 and silicon rubber 50 **do not have an injection based connection**...Jung's bracket 40 and silicon rubber 50 are sealed with an opening 70 where the flexible circuit board 30 is later inserted.

Ex-2009, ¶145 (cited in POR, 69-70)



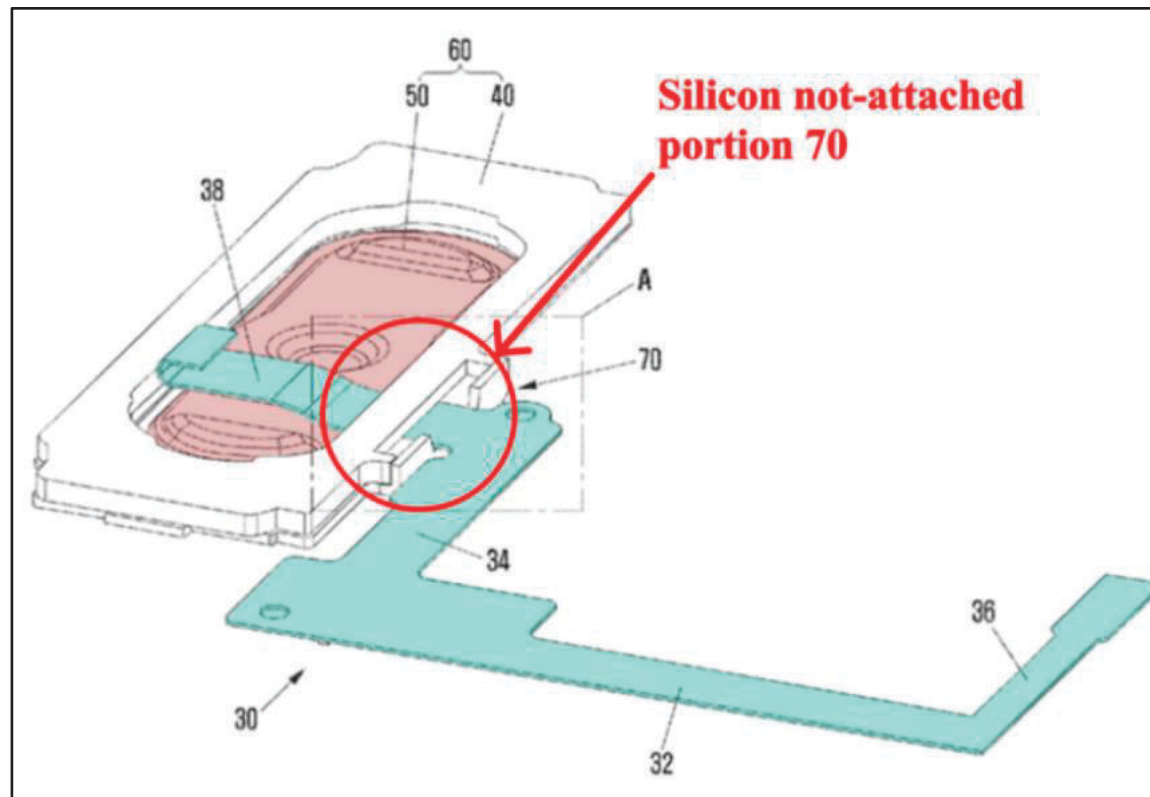
Ex-1005, FIG. 9 (cited in Sur-Reply, 26)

Jung Does Not Disclose Overmolding

Anthony Declaration

Jung's flexible circuit board 30 and silicon rubber 50 **do not have an injection based connection**...Jung's bracket 40 and silicon rubber 50 are sealed with an opening 70 where the flexible circuit board 30 is later inserted.

Ex-2009, ¶145 (cited in POR, 69-70)



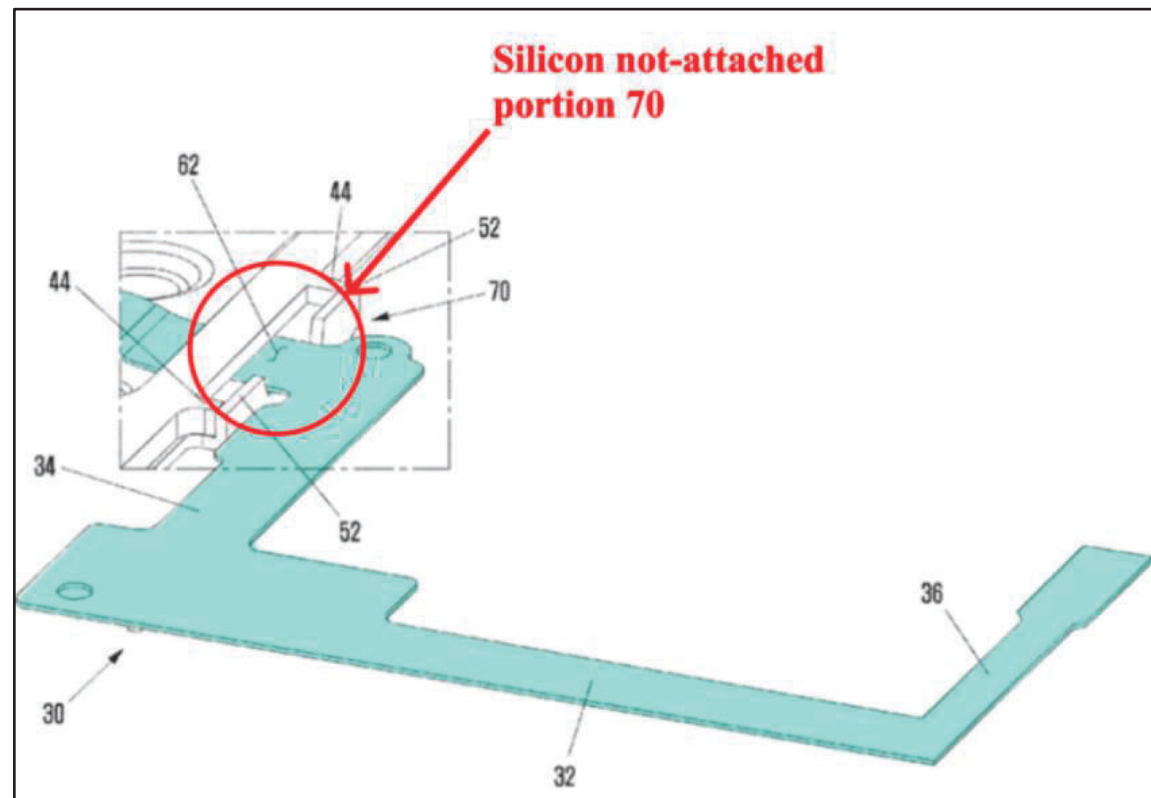
Ex-1005, FIG. 10 (cited in Sur-Reply, 27)

Jung Does Not Disclose Overmolding

Anthony Declaration

Jung's flexible circuit board 30 and silicon rubber 50 **do not have an injection based connection**...Jung's bracket 40 and silicon rubber 50 are sealed with an opening 70 where the flexible circuit board 30 is later inserted.

Ex-2009, ¶145 (cited in POR, 69-70)



Ex-1005, FIG. 11 (cited in Sur-Reply, 27)

Jung Does Not Disclose Overmolding

Anthony Declaration

...a POSITA would not have understood Jung's process of forming the silicon-not-attached portion. Ex-1003, 309. This assembly process is performed **after sealing through insert injection**, which is not the type of overmolding described in claim 4.

Ex-2009, ¶145 (cited in POR, 69-70)

Jung

As described above, the electronic device adopting the key-waterproof structure and a method of waterproofing a key, according to various embodiments of the present disclosure, may be made of two processes, such as a process of forming the silicon-not-attached portion for assembling the flexible printed circuit board in the insert-injected product after the circuit board bracket and the silicon rubber are sealed through the insert injection, and a process of bonding only the silicon-not-attached portion for waterproofing **after assembling** the flexible printed circuit board through the silicon-not-attached portion. Therefore, according to the present disclosure, the process can be simplified, and waterproofing failure can be reduced. In addition, the assembly cost can be reduced due to the reduction in use of the assembly equipment and jigs to thereby enhance the productivity.

Ex-1005, [0122] (cited in POR, 67-70)

Claim Interpretation

Biometric Characteristic

Claim 1

[1.pre]: An electronic device comprising:

[1.a]: an enclosure having an enclosed volume and an opening formed in a sidewall;

[1.b]: a processor positioned in the enclosed volume;

[1.c]: a button assembly within the opening, the button assembly comprising:

[1.c.i]: an input member having an input surface; and

[1.c.ii]: a biometric sensor positioned below the input member and configured to produce an output signal in response to a touch on the input surface, the output signal corresponding to **a biometric characteristic**

[1.d]: a seal positioned between a sealing surface of the button assembly and the enclosure; and

[1.e]: a flexible conduit coupled to the biometric sensor and configured to transmit the output signal to the processor; wherein:

[1.f]: a portion of the flexible conduit is sandwiched between the seal and the sealing surface or between the seal and the enclosure.

POR, 6-7 (citing Ex-1001, 26:64-27:7)

Biometric Characteristic Does Not Require Construction

Sur-Reply

And, because there is no dispute that the “biometric characteristic” encompasses fingerprints, the Board need not construe the term in addressing the merits of the invalidity challenges presented in the Petition.

Sur-Reply, 1

Petition

The '619 Patent explains “fingerprints” are an example of a “biometric characteristic” (Ex. 1001, 5:9-14, 1:63-64, 5:25-26, 4:22-25). And, the prior art discloses “fingerprints” as “biometric characteristics” (Ex. 1003, ¶67)

Ex-1001, 5:9-14 (cited in POR, 10)

Biometric Characteristic Does Not Require Construction

Anthony Declaration

In my opinion, “heart rate” and “blood pressure” are embodiments of biometric characteristics that are not included in AliveCor’s proposed construction because they are not sufficiently distinctive to enable identification of a particular human individual.

Ex-2009, ¶128 (cited in POR, 10)

A POSITA would have been able to interpret the claim language to understand that it includes embodiments of the biometric sensor where “an input (e.g., a touch, a press, or the like) occurs” and a “measure of the input” includes “a measurement of absolute capacitance or capacitance change” to determine, for example, a biometric characteristic of “heart rate.”

Ex-2009, ¶30 (citing Ex-1001, 4:51-67) (cited in POR, 11-12)

Specification

The sensed human physical characteristic may vary widely, but may include fingerprint, palm veins, DNA, heart rate, and blood pressure.

Ex-1001, 4:51-67 (cited in POR, 10)

The biometric characteristic sensed by the biometric sensor may be used by the device in a number of different ways. For example, the biometric characteristic may be used to identify a user and, thus, may provide a biometric identification for a process or a transaction.

Ex-1001, 5:1-14 (cited in Pet., 6)