

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MERCHSOURCE, LLC,

Petitioner

v.

DODOCASE, INC.,

Patent Owner

U.S. Patent No. 9,420,075

Case No.: IPR2018-00494

PETITION FOR *INTER PARTES* REVIEW

DDC_003868

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LIST OF EXHIBITS

Ex. 1001	U.S. Patent No. 9,420,075 (“’075 Patent”)
Ex. 1002	Declaration of Kurtis Keller (“Keller Decl.”)
Ex. 1003	C.V. of Kurtis Keller
Ex. 1004	Prosecution History of U.S. Patent No. 9,420,075 (“File History”)
Ex. 1005	Image File Wrapper of U.S. Provisional Patent Application No. 62/025,376 (“’376 Application”)
Ex. 1006	Image File Wrapper of U.S. Provisional Patent Application No. 62/161,857 (“’857 Application”)
Ex. 1007	Video File of Prince Aryajeet Ramteke (aka Tech#), “Use Google Cardboard Without Magnetometer (Enabling Magnetic Ring Support To Every Device)” Youtube (May 10, 2015), https://www.youtube.com/watch?v=o_Pk_kipYto (last visited Jan 15, 2018) submitted in mp4 format (“Tech#”) Tech# - Part 1. 0 - 3.32.mp4
	Tech# - Part 2, 3.32 - 7.15.mp4
	Tech# - Part 3, 7.15 - end.mp4
Ex. 1008	U.S. Patent Publication No. 2013/0141360 (“Compton”)
Ex. 1009	Signe Brewster, “Why Google Cardboard Is Actually A Huge Boost For Virtual Reality” Gigaom (June 28, 2014) with comments, https://gigaom.com/2014/06/28/why-google-cardboard-is-actually-a-huge-boost-for-virtual-reality/ (last visited Jan 15, 2018) (“Gigaom”)
Ex. 1010	Signe Brewster, “Why Google Cardboard is actually a huge boost for virtual reality” Internet Archive (July 15, 2014), https://web.archive.org/web/20140715204143/https://gigaom.c

	om/2014/06/28/why-google-cardboard-is-actually-a-huge-boost-for-virtual-reality/ (last visited Jan. 15, 2018)
Ex. 1011	“Comments on: Why Google Cardboard is actually a huge boost for virtual reality” Internet Archive (July 15, 2014), https://web.archive.org/web/20140715204200/https://gigaom.com/2014/06/28/why-google-cardboard-is-actually-a-huge-boost-for-virtual-reality/feed (last visited Jan 15, 2018)
Ex. 1012	GoogleDevelopers, “Google I/O 2014 - Cardboard: VR for Android” YouTube (June 27, 2014), https://www.youtube.com/watch?time_continue=2&v=DFog2gMnm44 (last visited Jan 15, 2018) submitted in mp4 format (“Google I/O”) Google IO 2014 - PART 1 0 - 4.24.mp4
	Google IO 2014 - PART 2 4.24 -9.10.mp4
	Google IO 2014 - PART 3 9.10 -13.32.mp4
	Google IO 2014 - PART 4 13.32 - 18.22.mp4
	Google IO 2014 - PART 5 18.22 - 22.59.mp4
	Google IO 2014 - PART 6 22.59 - 28.07.mp4
	Google IO 2014 - PART 7 28.07 - 32.57.mp4
	Google IO 2014 - PART 8 32.57 - 37.47.mp4
	Google IO 2014 - PART 9 37.47 - 41.13.mp4
	Google IO 2014 - PART 10 41.13 - end.mp4
Ex. 1013	U.S. Patent Number. 5,877,459 (“Prater”)
Ex. 1014	U.S. Patent Publication No. 2011/0162894 (“Weber”)
Ex. 1015	U.S. Patent Publication No. 2011/0164000 (“Pance”)

Ex. 1016	U.S. Patent Publication No. 2012/0128995 (“Leto”)
Ex. 1017	U.S. Patent Publication No. 2012/0139879 (“Kim”)
Ex. 1018	U.S. Patent Publication No. 2012/0146957 (“Dunagan”)
Ex. 1019	U.S. Patent Publication No. 2013/0002606 (“Mann”)
Ex. 1020	U.S. Patent Publication No. 2013/0249870 (“Slaby”)
Ex. 1021	Declaration of Prince Aryajeet Milind Ramteke
Ex. 1022	Declaration of Kyle B. Fleming

I. INTRODUCTION

MerchSource, LLC (“Petitioner”) requests *Inter Partes* Review (“IPR”) of Claims 1 to 20 of U.S. Patent No. 9,420,075 (“’075 patent”) (Ex. 1001).

The ’075 patent is directed to a virtual reality viewer for use with a touchscreen enabled mobile device and having an exterior mechanism for causing a touch event at mobile device touchscreen. The patent contends that there is a need for VR viewer having an integrated user input mechanism other than incorporating magnets at an exterior of the viewer, built in accelerometers or other position/orientation sensors, or separate dedicated input devices that connect to the mobile device. Ex. 1001 at 1:3-2:15.

The patent purports to address this need by including (a) a non-moveable input mechanism that contacts a touchscreen of the mobile device and transfers a capacitive touch to the touchscreen in response to a user interaction, or (b) a moveable input mechanism that contacts the touchscreen of the mobile device when the input mechanism is in the extended position, the contact allowing for transfer of a capacitive touch to the touchscreen in response to a user interaction. *Id.* at 2:19-41.

But neither solution nor any of the claimed inventions of the ’075 patent were new or inventive as of the earliest effective filing dates. Claims 1-17 and 20 relating to a viewer having a movable input are not novel or are rendered obvious

in view of one or more of Tech# and Compton. Claims 18 and 19 relating to a viewer having a non-moveable input are not novel or are rendered obvious in view of one or more of Gigaom and Compton.

Any differences between the limitations and the prior art are mere design modifications and obvious in view of the teachings of Tech#, Gigaom and Compton.

II. GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.104(a)

Petitioner certifies that it has standing under 37 C.F.R. § 42.101(a-c), and that (1) the '075 patent is available for IPR; (2) Petitioner is not barred or estopped from requesting an IPR on the Grounds identified herein; and (3) Petitioner has not filed a complaint challenging the validity of the '075 patent. This Petition is filed in accordance with 37 C.F.R. § 42.106(a). Concurrently filed is a Power of Attorney and an Exhibit List per 37 C.F.R. § 42.10(b) and § 42.63(e), respectively.

In a Related Matter, *see infra* III.B, Patent Owner has alleged that Petitioner agreed to not contest the validity of the '075 patent. While Patent Owner might raise this to avoid institution, precedent is clear that a contractual no-challenge clause is not a defense or basis to deny institution. *Dot Hill Systems Corp. v. Crossroads Systems, Inc.*, IPR2015-00822 (PTAB Sept. 17, 2015) (Paper 18, pp. 6-8) (instituting IPR and finding that a settlement no-challenge clause was not grounds for denying institution). *See also Esselte Corp. v. Dymo*, Case IPR2015-

00779 (PTAB Aug. 28, 2015) (Paper 13, pp. 4-7) (35 U.S.C. §§ 311, 314-316 do not provide assignor estoppel as a defense to IPR and rejecting Patent Owner’s contractual bar argument for the same reasons).

Moreover, the Supreme Court has long held that public policy favors challenging the validity of patents and that licensee estoppel or “no-challenge” clauses are not enforceable. *Lear v. Adkins*, 395 U.S. 653, 670 (1969) (license does not estop or preclude licensee from challenging validity of the patent, and “[l]icensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor’s discovery. If they are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification.”). *Massillon-Cleveland-Akron S. Co. v. Golden State Adv. Co.*, 444 F.2d 425, 427 (9th Cir. 1971) (“We think the rationale of *Lear* requires us to hold that the covenant of Golden State and Gold, in the settlement agreement of July 23, 1962, not to contest the validity of MCA’s patent, is void on its face and unenforceable.”); *Rates Tech. Inc. v. Speakeasy, Inc.*, 685 F.3d 163 (2d Cir. 2012) (following *Massillon*).

III. MANDATORY NOTICES (37 C.F.R. § 42.8(b))

A. Real Parties-In-Interest (37 C.F.R. § 42.8(b)(1))

Petitioner certifies that MerchSource, LLC located at 15 Cushing, Irvine, California 92618 and ThreeSixty Brands Group LLC located at 15 Cushing, Irvine California 92618 are the real parties-in-interest.

B. Related Matters (37 C.F.R. § 42.8(b)(2))

DODOcase VR, Inc. (allegedly “fka DODOcase, Inc.”) filed a complaint on December 13, 2017 against MerchSource, LLC and ThreeSixty Brands Group LLC regarding U.S. Patent Nos. 9,420,075, 9,723,117, and 9,811,184. Defendants have not yet responded to the complaint. Also, PGR petitions are being concurrently submitted for U.S. Patent Nos. 9,723,117 and 9,811,184.

C. Lead and Backup Counsel and Service (37 C.F.R. § 42.8(b)(3)-(4))

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Petitioner consents to electronic service by email. A power of attorney under 37 C.F.R. § 42.10(b) accompanies this Petition.

IV. IDENTIFICATION OF CHALLENGE UNDER 37 C.F.R. § 42.104(b)

Pursuant to 37 C.F.R. §§ 42.104(b) Petitioner requests IPR of claims 1-20 of the '075 patent and further requests that the challenged claims be canceled as unpatentable based on the following grounds (which includes the specific prior art identified as well as the knowledge of one of ordinary skill in the art):

Ground 1: Claims 1-3 and 5 are invalid under 35 U.S.C. § 102¹ as being anticipated by Tech#;

Ground 2: Claims 1-3, 5-7 and 16-17 are invalid under 35 U.S.C. § 103 as being unpatentable in view of Tech#;

Ground 3: Claims 1-17 and 20 are invalid under 35 U.S.C. § 103 as being unpatentable in view of Tech#, further in view of Compton;

Ground 4: Claims 18 is invalid under 35 U.S.C. § 102 as being anticipated by of Gigaom;

¹ The AIA version of Sections 102 and 103 of the Patent Act applies.

Ground 5: Claims 18 and 19 are invalid under 35 U.S.C. § 103 as being unpatentable in view of Gigaom;

Ground 6: Claim 19 is invalid under 35 U.S.C. § 103 as being unpatentable in view of Gigaom, further in view of Compton;

While some of the above grounds for obviousness cover the same claims, the technical teachings between the different grounds are not cumulative.

V. OVERVIEW OF THE '075 PATENT

A. Effective Filing Date of the '075 Patent

The '075 patent issued from U.S. Application No. 14/801,606, filed on July 16, 2015, and claims priority to two provisional applications, U.S. Application No. 62/025,376 filed July 16, 2014 ('376 Application) (Ex. 1004) and U.S. Application No. 62/161,857 filed May 14, 2015 ('857 Application) (Ex. 1005). The '075 patent is subject to AIA Rules.

The '075 patent contains twenty claims, three independent claims (1, 18 and 20) and seventeen dependent claims. Each of claims 1-17 and 20 requires the limitation of “an input mechanism...moveable within the interior.” Ex. 1001. At best, the '376 Application discloses merely that “[t]he input devices can be configured to be passive and/or active input devices,” and “[i]t should be understood that other active input device configurations can also be implemented.” Ex. 1004 at 7:13-14 and 9:21-22. No exemplary embodiments or other disclosure

of “active input device(s)” are disclosed. A POSITA would understand that the ’376 Application does not include disclosure sufficient to support the claimed input mechanism moveable within the interior.

Accordingly, claims 1-17 and 20 are not entitled to priority from the ’376 Application and therefore have an effective filing date no earlier than the May 14, 2015 filing date of the ’857 Application.

B. State of the Technology at the Time of the Alleged Invention²

Virtual reality headsets were in use prior to the earliest priority date of any claim of the ’075 patent, and the underlying principles date back to at least the 1820s. Ex. 1002, ¶¶39-40.

Petitioner has submitted a declaration from Kurtis Keller, an expert regarding the relevant art herein. *See* VII; Ex. 1002. Mr. Keller’s declaration contains a more detailed background and summary of the technology and the development of head mounted displays for virtual reality, particularly from the 1960s through 2014. *See* Ex. 1002, ¶¶44-46.

Although not the first instance of a VR viewer utilizing a mobile device

² Cited references not named in a ground of rejection are for the purpose of showing the state of the art and the background knowledge of a POSITA. *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362-63 (Fed. Cir. 2013).

touchscreen, a well-known event in the field was Google I/O 2014, on June 25-26, 2014, introducing Google Cardboard Version 1 (“Cardboard”), a VR viewer for use with a mobile device having a touchscreen. Google presented Cardboard on June 26, 2014 and published that same day a. Exhibit 1012. During the presentation Christian Plagemann describes one known problem with these viewers: how to interact with the enclosed touchscreen without the user sticking fingers inside and interfering with the experience. Ex. 1012 at 18:28-18:35; Ex. 1002, ¶¶47-51 and 54.

Cardboard utilized two magnets, one inside the housing and a second “washer” magnet that the user could slide along the exterior of the housing. Ex. 1001 at 18:35-19:22. Moving the second magnet changed the magnetic field and was detected by the compass inside Google’s mobile device, with software interpreting those changes as an input event in lieu of the user touching the screen with a finger. *Id.*

Mr. Plagemann invites developers to come up with other ways to interact with the touchscreen besides Google’s washer-slider-magnet feature:

And you see when I move this magnet, what kind of beautiful signals we get. And so you can write a very simple classifier that picks up the up and down and translates that into an input event. The downside of this, of course, is you’re losing the compass.... So that’s a trade-off, and you’re completely free to come up with other awesome ideas to interact.

Id. at 19:14-19:49.

One solution for interacting with a touchscreen of a mobile device is disclosed online by Tony Pace, “Google Cardboard DIY Guide” at <http://hacklabtaichung.blogspot.com/2014/07/google-cardboard-diy-guide.html>. This was cited as prior art in U.S. Patent Nos. 9,723,117 and 9,811,184, but not for the ’075 patent. Pace describes a homemade version of Cardboard but, instead of the magnet input, uses metal tape running from the exterior to the interior and in contact with the touchscreen:

Where the plans call for a magnet, I used a bit of foil tape on cardboard. One end of the tape goes somewhere on the left side of the screen, near the middle/top. The other end goes somewhere you can touch it. I used a bit of velcro tape to attach it, so I could adjust its position easily if needed.

Don't make the tape too big. If you do this your finger's influence on the capacitance is small, and the touches won't be registered easily. Make it nice and slim.... Take the metal taped strip and install it on the left side, with about 1 cm touching the screen and the back attached somewhere you can touch it.

The requirements for causing a “touch event” on a capacitive touchscreen were common knowledge to a POSITA. Ex. 1002, ¶¶52-53. Capacitive touchscreens were well known, as were styluses and other input devices for use with capacitive touchscreens. In his declaration, Mr. Keller identifies several examples of these materials, such as conductive elastomers, electrically conductive, conductive or metallized fabrics, conductive or metallized polymers, conductive elastomers, conductive foam

or felt. *Id.* (citing exemplary prior art U.S. patent publications).

C. Summary of the Disclosure of the Claimed Subject Matter

The '075 patent is directed to a virtual reality viewer that attempts to provide a solution for the same problem mentioned by Mr. Plagemann—generating screen inputs when “the touch sensitive display is concealed within the viewer housing, thereby making it difficult for a user to interact with the touch sensitive display of the device.” Ex. 1001 at 1:55-65. The '075 patent additionally sought to avoid using magnets (usable with limited number of mobile devices) or other “dedicated input devices, like video game controllers, that connect to the electronic device within the viewer either by a wired plug like connection (*e.g.*, USB or Apple compatible connector), or a wireless connection capabilities” to interact with the touchscreen of a mobile device in a VR viewer so that the viewer could be “configured for use with a wide variety of conventionally available smartphone devices.” Ex. 1001 at 1:65-2:13.

The '075 patent discloses multiple embodiments of VR viewers 10, 700. The embodiments of viewer 10 include inputs 26a-26d, 28a-28d, and 29a-29d that are fixed in the housing 12 relative to the mobile electronic device 15. Ex. 1001. at 3:25-6:50, Figs. 6A-B. The input mechanisms are accessible from an exterior of a housing 12 such that one or more touchscreen inputs 26a-26d within the interior of the housing 12 are configured to contact the touchscreen of a mobile electronic device 15 in the housing 12 and transfer a capacitive touch input to the touchscreen in response to a user interaction with one or more user inputs 29a-29d at the exterior. A cross-sectional view of a viewer with this embodiment is illustrated in Figure 6A.

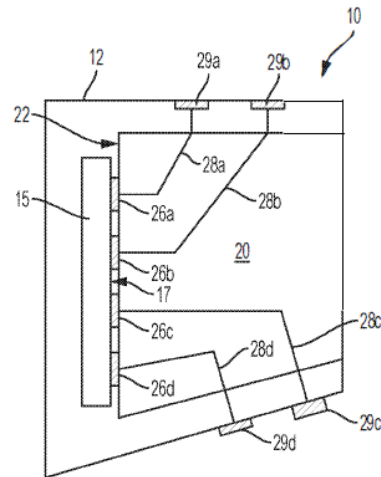


FIG. 6A

The '075 patent also discloses a VR viewer 700 having an input mechanism 715 that is moveable within the housing. *Id.* at 7:8-10:8, Figs. 7A-F. In particular, the viewer 700 includes a lever that is accessible from an exterior of a housing to bring the electrical shield 725 into an actuated state where a contact event is transferred to a touchscreen and a non-actuated state where a contact event is not transferred to the touchscreen inside the housing. A coupling linkage 730 extends between the lever and the electrical shield 725. *Id.* at 7:8-10:8. “[A]ctuation of the lever causes the coupling to deform and extend in a direction towards the

touchscreen, which in turn moves a portion of the electrical shield towards the touchscreen.” *Id.* at 8:7-10. Figures 7A and 7C show the non-actuated state, and Figures 7B and 7E show the actuated state. *Id.* at pages 6 and 8.

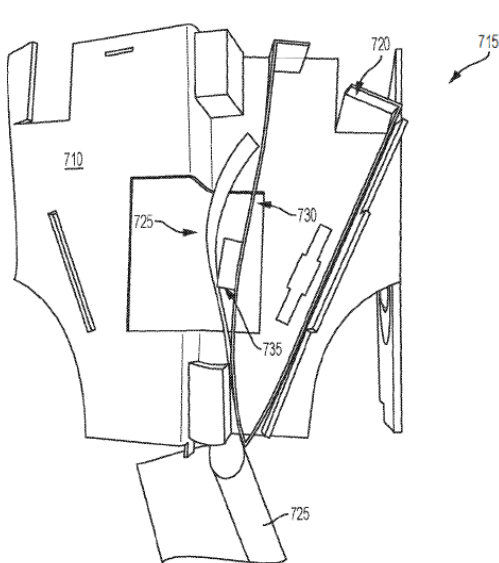


FIG. 7A

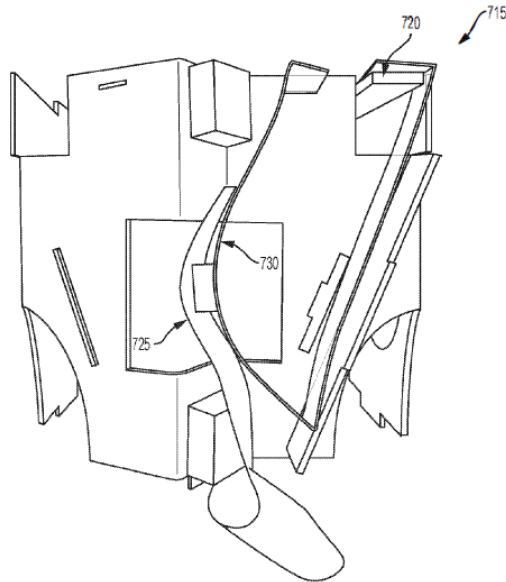


FIG. 7B

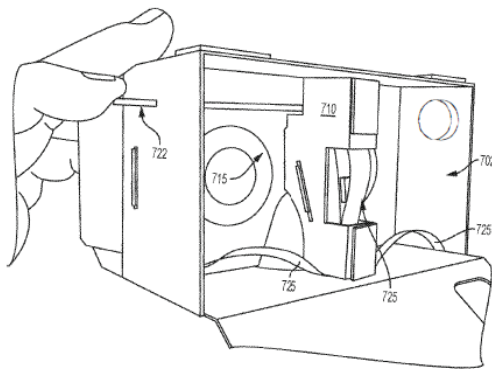


FIG. 7C

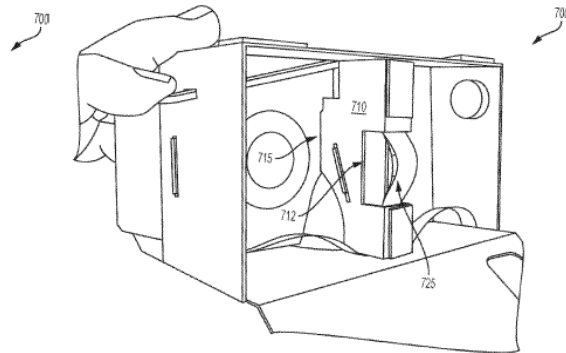


FIG. 7E

VI. CLAIM CONSTRUCTION UNDER 37 C.F.R. § 42.104(b)(3)

Claim terms are to be given their broadest reasonable construction consistent with the specification. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268 (Fed. Cir.

2015), *aff'd*, 136 (2016); 37 C.F.R. § 42.100(b). “[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’” *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (citation omitted).

Petitioner believes that each of the terms within the challenged claims can be given their plain and ordinary meaning, and that no constructions are needed “to resolve the controversy.”

VII. PERSON HAVING ORDINARY SKILL IN THE ART

In view of the subject matter of the '075 patent, a person of ordinary skill in the art at the time of the alleged invention (“POSITA”) was a person having an undergraduate degree (or equivalent) in mechanical engineering or a related field, with knowledge of mechanical actuation systems, head mounted displays, a basic understanding of touchscreen technology, and at least two years of experience of professional work experience in mechanical and basic optical design or engineering. Ex. 1002, ¶34.

Kurtis Keller is well versed in the technology of the '725 patent, including VR technology and the materials necessary to induce a touch event on a mobile device touchscreen, as of at least June 2014. At all relevant times for the purpose of this Petition, Mr. Keller was a POSITA. *Id.*

VIII. OVERVIEW OF THE PRIOR ART

A. Overview of Tech#

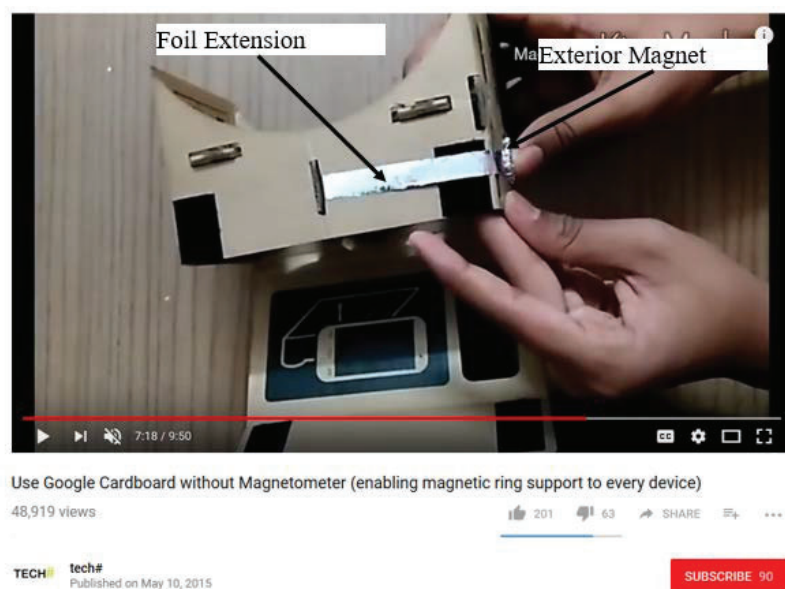
Tech# is entitled *Use Google Cardboard without Magnetometer (enabling magnetic ring support to every device)*. Ex. 1007. The video was published for public viewing onto Youtube.com on May 10, 2015 by Prince Aryajeet Ramteke, aka “Tech#.” See Exs.1007, 1021. The video is a printed publication because it was publicly accessible as of May 10, 2015 at the website, https://www.youtube.com/watch?v=o_Pk_kipYto, to persons interested and ordinarily skilled in the art. Mr. Ramteke has submitted a declaration authenticating Ex. 1007 and confirming that he published that video on Youtube on May 10, 2015. Ex. 1021. Tech# is therefore admissible and authenticated pursuant to F.R.E. 901(b)(1).

Accordingly, Tech# is prior art to claims 1-17 and 20 under Post-AIA § 102(a)(1).

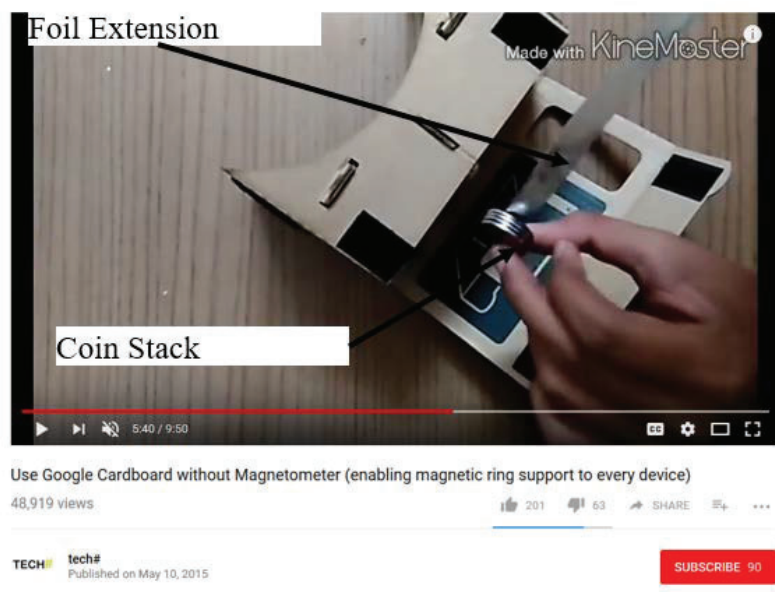
As previously discussed, Cardboard includes a magnetic input mechanism: “[a] washer on the side of the headset can be pushed up and down to create changes in the magnet’s field, which affects the phone’s compass. The Android app that accompanies Cardboard treats that change in field as a click.” Ex. 1009.

Tech# discloses a modification to Cardboard to enable a capacitive touch input to the enclosed mobile device. Utilizing the sliding magnet/washer fixed to

an exterior of the Cardboard housing, Tech# teaches attaching to the magnet an aluminum foil extension passing from an exterior of the housing, through a cutout of the housing and into an interior of the housing:

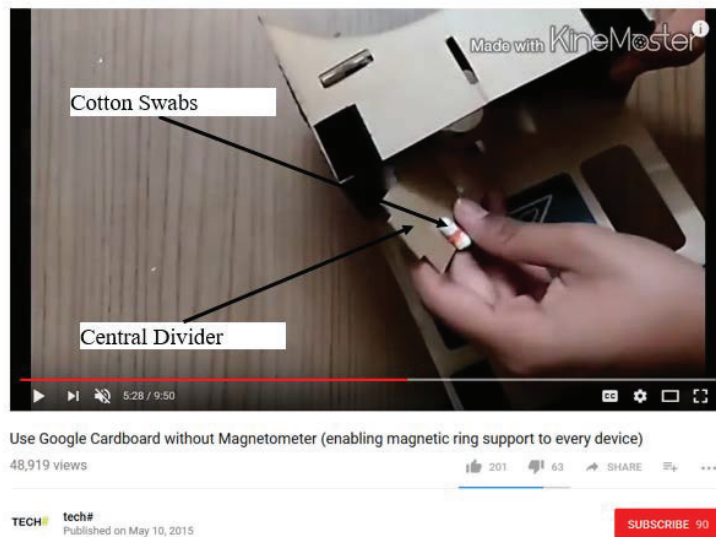


Id. at 7:18, annotated for emphasis. A coin stack is connected to the distal end of the foil extension opposite the magnet, and the foil is connected to the coins.

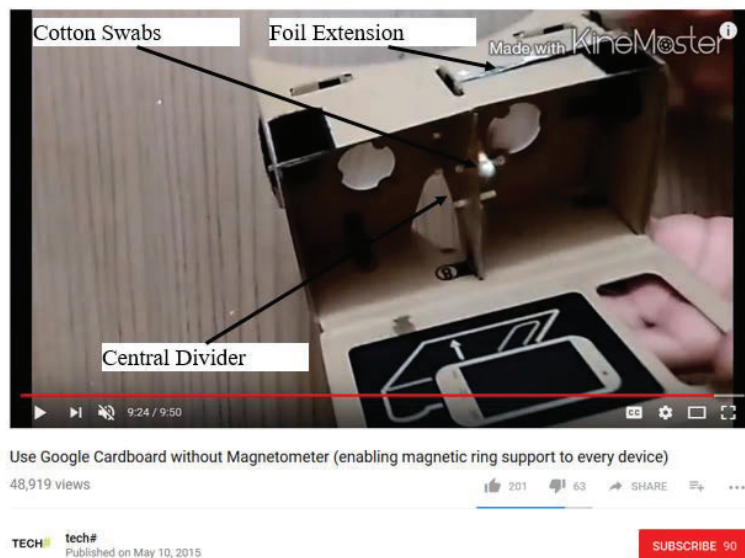


Id. at 5:40, annotated for emphasis.

Cotton swabs are fixed to the central divider to be in contact with the touchscreen and the coins, which are in contact with the foil, when the coins are pulled upwards. Tech# advises to moisten the cotton swabs prior to use. *Id.* at 7:02.

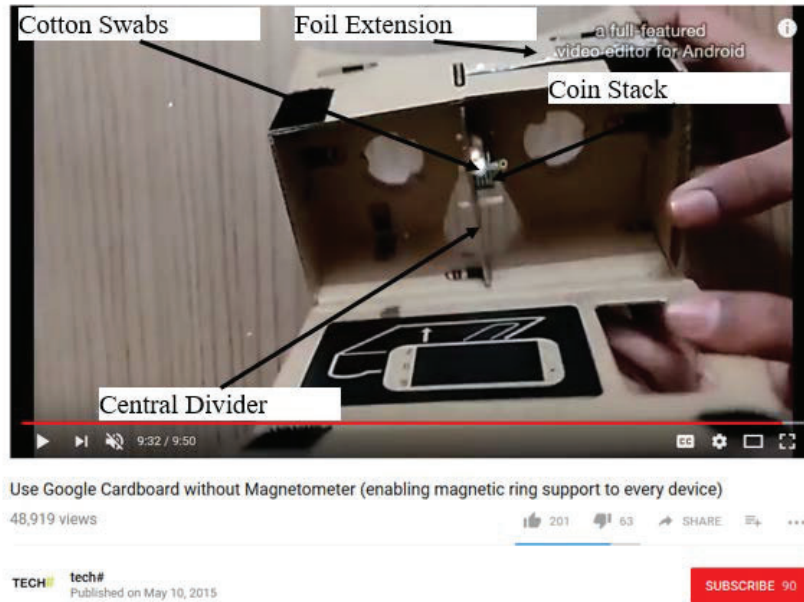


Id. at 5:28, annotated for emphasis.



Id. at 9:24, annotated for emphasis.

When the magnet is moved downwards, a portion of the foil extension is pulled out of the housing into an extended position relative to a default position. In turn the coins are drawn/extended upward along the central divider and into contact with the moistened cotton swabs, which are fixed to the central divider.



Id. at 9:32, annotated for emphasis.

In this extended position, a capacitive touch is transferred from the user, through the proximal end of the foil extension attached to the magnet, through the foil extension to the distal end of the extension at the coin stack, and from the coin stack to the touchscreen via the moistened cotton swabs, which are in contact with the touchscreen. Ex. 1002, ¶66.

B. Overview of Compton

Compton is entitled “Head Mounted Display for Viewing Three Dimensional Images,” U.S. Patent Publication No. 2013/0141360, filed on

November 2, 2012 and published on June 6, 2013. Ex. 1008. Compton claims the benefit of U.S. Provisional Application No. 61/565,557 filed on December 1, 2011. Regardless of the priority date, Compton is prior art to all claims under Post-AIA 35 U.S.C § 102(a)(2).

Compton is directed to a head mounted display device that displays three dimensional images from a mobile device. The Examiner relied on Compton in rejecting claims during prosecution of the '075 patent. *See, e.g.*, Ex. 1004 at 100-108. The viewer of Compton includes a housing, a mobile device holder, and a reflecting surface that reflects images displayed by the mobile device. To activate functions of the mobile device, the viewer includes multiple lever input mechanisms (510, 512, 610) and (511, 513, 611) and a slider input mechanism (520, 521 611), as shown in Fig. 6A of Compton below.

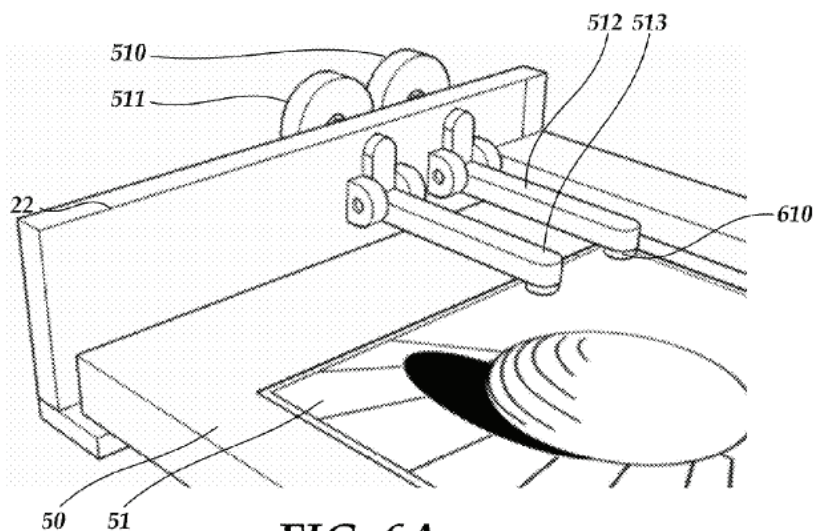


FIG. 6A

Each lever mechanism includes a portion exterior to the housing that is accessible by a user (*e.g.*, 510) to move a portion of the lever mechanism interior to the housing (*e.g.*, 512, 610) from a first position spaced from the touchscreen 51 of the mobile device to an extended position in contact with the touchscreen of the mobile device.

Compton also discusses the nature of capacitive touchscreens and the types of materials (*e.g.*, electrically conductive materials that increase or change the relative capacitance, or parasitic capacitance to ground, when contact is made with the capacitive sensors of the display) that suitable for use with capacitive displays. *Id.*, ¶0050. Compton notes that exemplary materials include a conductive fabric or a flexible material such as plastic embedded with conductive material such as metallic wires or grains. *Id.*

C. Overview of Gigaom

Gigaom is entitled “Why Google Cardboard is actually a huge boost for virtual reality.” Ex. 1009. On July 7, 2014, “tobiasclaren” posted a comment suggesting the use of electrically-conductive tape with Cardboard to generate a capacitive touch. *Id.* Both the web page including the Gigaom article and the July 7, 2014 tobiasclaren comment were archived by archive.org on July 15, 2014, confirming that Gigaom was published with the comment from tobiasclaren as of at least July 15, 2014. Exs.1011, 1012, and 1022.

Gigaom is a media business that, among other activities, publishes an online newspaper featuring articles on a range of technology topics. *See* <https://gigaom.com/> (last visited Jan. 15, 2018). Exhibit 1009 is self-authenticating under at least Federal Rule of Evidence 902(6) as a “[p]rinted material purporting to be a newspaper or periodical.” F.R.E. 101(b)(6) (“a reference to any kind of written material or any other medium includes electronically stored information.”)

Further, the archived copies of Gigaom maintained by the Internet Archive (archive.org), Exs.1011 and 1012, are additional evidence to authenticate Ex. 1009. F.R.E. 901(a) (“To satisfy the requirement of authenticating or identifying an item of evidence, the proponent must produce evidence sufficient to support a finding that the item is what the proponent claims it is.”). *See also* Ex. 1022. Additionally, the Board can take judicial notice of the authenticity of archived documents and website from the Internet Archive. *Marten Transport, Ltd. v. Plattform Advertising, Inc.*, Case No. 14-2464-JWL (D. Kansas) (unpub. Op. dated April 29, 2016) (taking judicial notice of archived websites without need for declarations, and string citing case “in which courts have taken judicial notice of sites from the Internet Archive while noting that other courts commonly take judicial notice of such sites.”).

Gigaom displays a publication date of June 28, 2014 for the main article and July 7, 2014 for the tobiasclaren comment. These publication dates appear to be

automatically generated by the computer(s) on which gigaom.com is operated at the time of publication, and therefore are not hearsay. *See United States v. Washington*, 498 F.3d 225, 231 (4th Cir. 2007) (machine generated information is not a “statement” under FRE 801 and therefore cannot be hearsay); *U.S. v. Khorozian*, 333 F.3d 498, 506 (Fed. Cir. 2003) (automatically generated time stamp on a fax was not a hearsay statement because it was not uttered by a person).

In addition, the archived copies of Gigaom dated July 15, 2014 and maintained by the Internet Archive (archive.org) further evidence those publication dates and shows that Gigaom (Ex. 1011) and the tobiasclaren comment (Ex. 1012) were available on the world wide web at least on July 15, 2014 (the date of the archive). This archival date is before the earliest priority date for the '075 patent. The Archive Date (July 15, 2014) of Exs.1011 and 1012 is automatically generated by the computer(s) on which archive.com is operated at the time of archival, and therefore this date not hearsay. *See* <https://archive.org/legal/affidavit.php> (describing computerized date stamp system of Internet Archive); *see also Washington*, 498 F.3d at 231(machine generated information is not a “statement” under FRE 801 and therefore cannot be hearsay).

Alternatively, the publication dates for Gigaom and the tobiasclaren comment (as shown in either Ex. 1010 or Exs.1011-1012) fall within at least the

residual hearsay exception of F.R.E. 807(a) and, for the reasons previously stated, satisfy elements (1)-(4) thereunder.

Accordingly, Gigaom,³ including the July 7, 2014 tobiasclaren comment, is prior art to all claims of the '075 patent under Post-AIA § 102(a)(1), regardless of the priority of the claims.

Gigaom discusses the Google I/O keynote speech revealing Cardboard (Ex. 1013), and provides various pictures. The comments section includes a discussion of options for modifying Cardboard to include an input mechanism for capacitive touch as an alternative to using the magnets. On July 7, 2014, tobiasclaren described an input mechanism including a metal tape extension at the separator between the eyes and extending to the exterior:

The use of the compass make the use of the compass mode in google street view impossible... Or?

The gyro function is good, but better would be gyro + compass.

The alternative: A metal tape at the separator between the eyes.
It has contact with the touch screen.

If you touch this metal tape (alloy, or this small copper tape for Tiffany), is it the same like this “magnet click”.

And the compass is full working.

Test it with a wire on every capacitive touch screen.

³ If Patent Owner objects to the admissibility of Gigaom or any other evidence, Petitioner will submit supplemental evidence pursuant to 37 C.F.R. §42.64(b)(2).

Exs. 1009 and 1011.

A POSITA would understand the metal tape to extend from an interior of Cardboard (at the central divider) to an exterior location of Cardboard that could be touched by a user to create the capacitive touch. Ex. 1002, ¶59.

**IX. DETAILED EXPLANATION AND SUPPORTING EVIDENCE
UNDER 37 C.F.R. §§ 42.104(b)(4) AND (b)(5)**

Pursuant to 37 C.F.R. § 42.104(b)(4) and (5), Petitioner provides in the following analysis a comparison of the claimed subject matter and prior art specifying where each claim limitation is found in the art and thus invalid under §§ 102 and/or 103.

A. Ground 1: Claims 1-3 and 5 are invalid under 35 U.S.C. § 102 as being anticipated by Tech#.

Tech# discloses every element of the challenged claims 1-3 and 5.

1. Claim 1

a. A virtual reality viewer for use with a mobile electronic device having a touch-screen, the viewer comprising:

Tech# demonstrates a modification of Cardboard to achieve a VR viewer for a mobile device with a touchscreen.



Ex. 1007 at 0:15; Ex. 1002, ¶¶71-72.

- b. a housing configured to receive the mobile electronic device, wherein the housing is configured to hold the mobile electronic device such that the touch-screen is generally centered in a horizontal direction and directly in a user's field of view when looking into a generally hollow interior of the housing through a side opposite the touch-screen;**

Tech# discloses the Cardboard housing. A mobile device inserted into the housing is centered horizontally and is directly in a user's field of view when looking through the lenses at the housing side opposite the touchscreen.



Ex. 1007 at 5:32; Ex. 1002, ¶¶73-74.

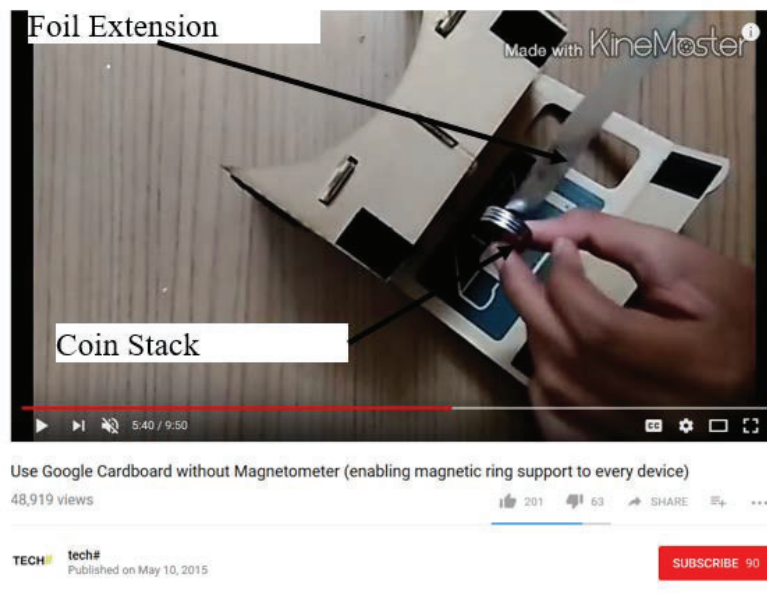
- c. an input mechanism that is accessible from an exterior of the housing and is moveable within the interior between at least a first position and an extended position,**

Tech# discloses an input mechanism including the exterior, sliding magnet, and an aluminum foil extension passing from the housing exterior, through a cutout in the housing, and into the housing interior at the central divider between the eyes.



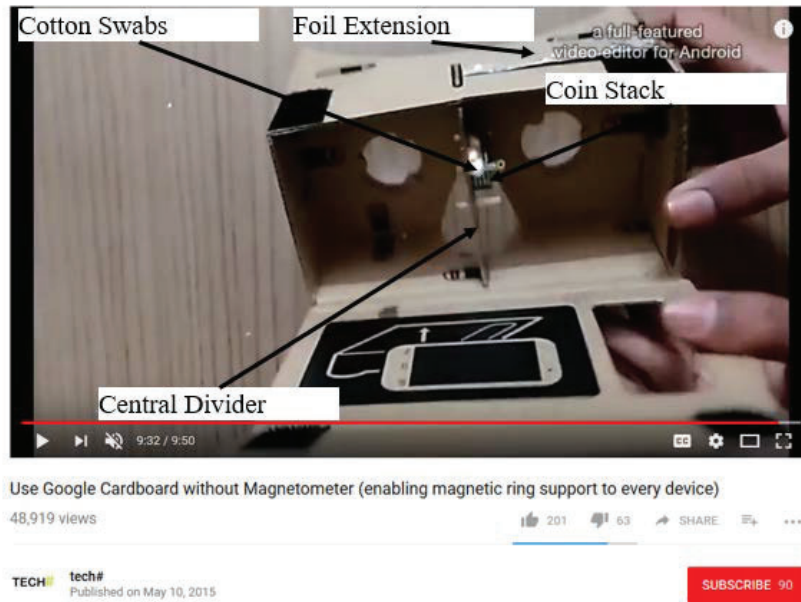
Ex. 1007 at 7:18, annotated for emphasis; Ex. 1002, ¶75.

A coin stack is connected to a distal end of the aluminum foil extension opposite the magnet.



Ex. 1007 at 5:40, annotated for emphasis; Ex. 1002, ¶76.

When the magnet at the exterior of the housing is moved downwards, a portion of the foil extension is drawn out of the housing into an extended position relative to a default position. The coins are also extended upward along the divider.



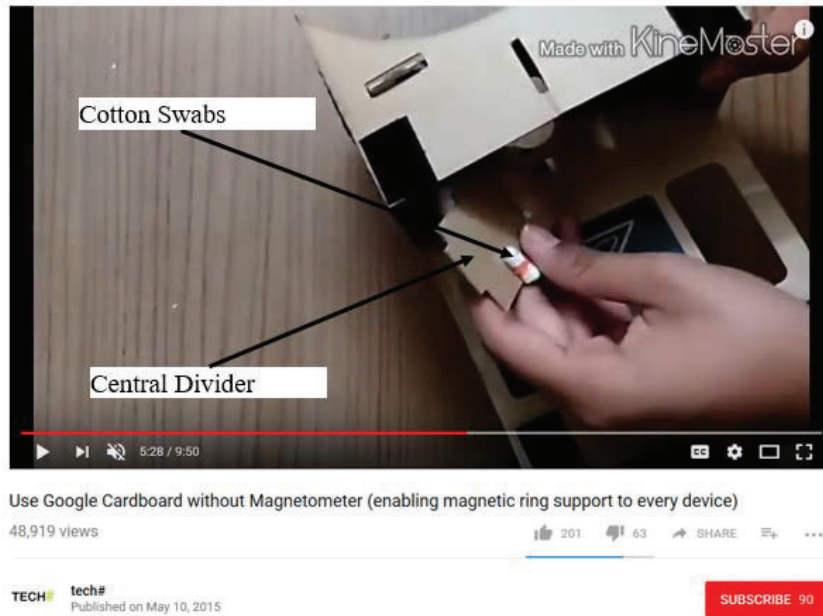
Ex. 1007 9:32, annotated for emphasis; Ex. 1002, ¶¶77.

Accordingly, a POSITA would understand that the Tech# discloses an input mechanism having a magnet that is accessible at an exterior of the housing, and a foil extension and a coin stack movable within the interior of the housing between a first position and an extended position (in an actuated state). *Id.* at 6:60-67; Ex. 1002, ¶¶78-79.

- d. **the input mechanism comprising: an electrical shield having a surface, wherein only a portion of the surface of the electrical shield is configured to contact a central region of the touch-screen of the mobile electronic device when the input mechanism is in the extended position.**

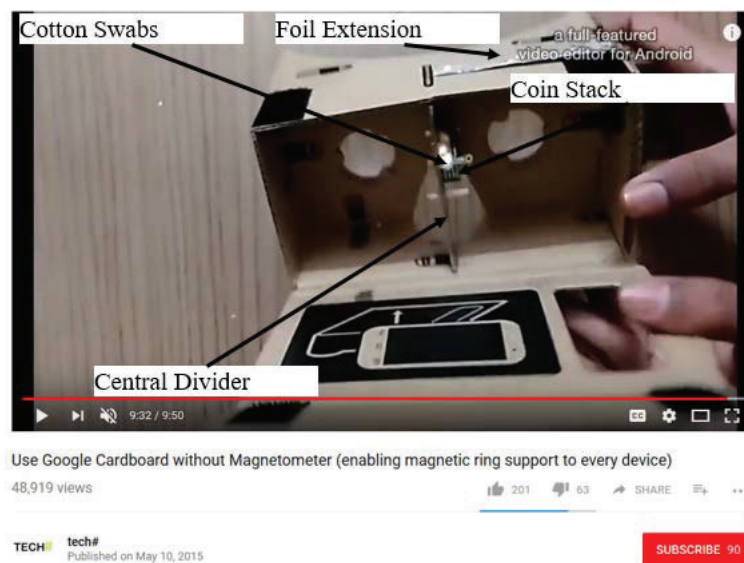
According to the '075 patent, the “electrical shield is a material configured to, when brought in proximity to and/or touches the touchscreen, induce a touch event that is electrically detectable by the touchscreen/device.” Ex. 1001 at 7:22-25. The input mechanism disclosed in Tech# further includes the moistened cotton swabs as an “electrical shield.” Ex. 1002, ¶80. However, a POSITA also would have recognized that the material of the swabs, while present in many homes and suggested by Tech#, is not ideal to induce a touch event on a capacitive touchscreen. Ex. 1002, ¶¶100-103. As discussed below, in Grounds 2 and 3, a POSITA would have been motivated to improve the conductivity and longevity of the input mechanism by replacing the swabs with any of a wide variety of alternative materials, such as a conductive polymer, that were well-known to a POSITA. *Id.*

The swabs have a rounded surface such that only a distal section of the surface contacts the touchscreen, and the cotton swabs are fixed to the central divider of the housing to thereby contact a central region of the touchscreen. Ex. 1007 at 3:36, 9:32, annotated for emphasis; Ex. 1002, ¶80.



Ex. 1007 at 5:28, annotated for emphasis.

The contact occurs when the input mechanism is in the extended position/actuated state, when the exterior magnet is moved downward, and the coin stack is moved upwards to contact the swabs:



Ex. 1007 at 9:32, annotated for emphasis; Ex. 1002, ¶81.

Accordingly, Tech# discloses each and every limitation of claim 1 of the '075 patent. Ex. 1002, ¶¶82-83.

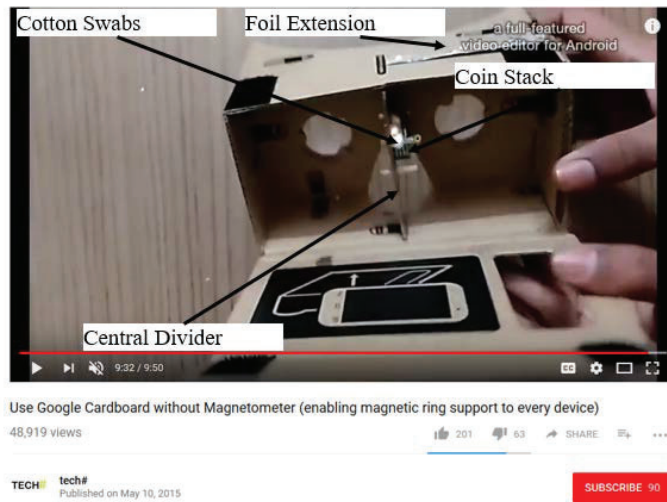
2. Claim 2

Tech# discloses claim 1 (IX.A.1) and the additional limitations of claim 2:

The virtual reality viewer of claim 1, wherein input mechanism is configured to provide a capacitive touch input to the touch-screen when the input mechanism is in the extended position, and

wherein at least a portion of the input mechanism is moveable between the first position and the extended position and is located within a central region of the interior that is between a left and a right region of the interior and the field of view such that only the portion of the surface of the electrical shield contacts the central area of the touch-screen of the mobile electronic device.

Tech# discloses wherein the input mechanism—including the magnet, foil extension, coin stack and cotton swabs—provides a capacitive touch input to the touchscreen when a user is in contact with the magnet/foil extension exterior to the housing, and when the magnet is in the downwardly-moved position, causing the coin stack to move upwardly along the central divider into contact with the cotton swabs, which are in turn in contact with the screen when the housing is closed with the mobile device in the housing:



Ex. 1007 at 9:32, annotated for emphasis; Ex. 1002, ¶¶85-86.

Tech# discloses the input mechanism as being movable via movement of the exterior magnet between unactuated and actuated positions. As shown above, the foil extension, coin stack and cotton swabs are located at a central region of the interior of the housing, along the central divider that is spaced for location centrally between left and right regions of the interior. Ex. 1002, ¶86.

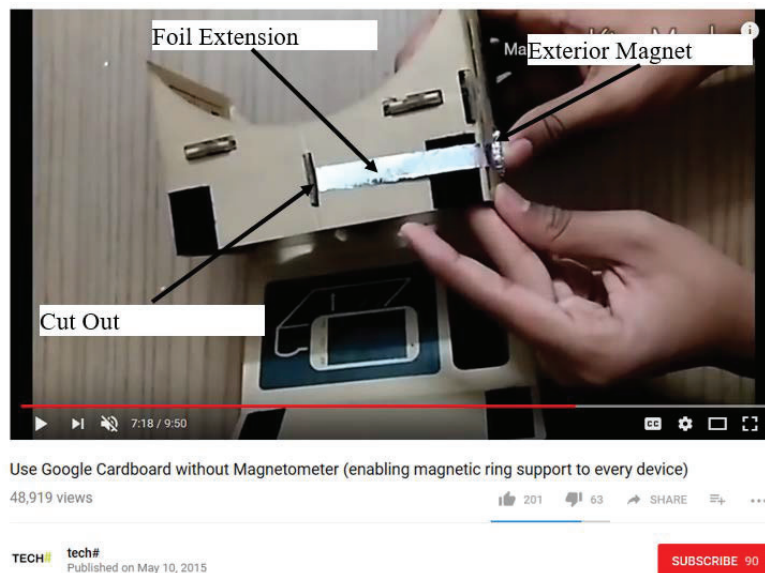
The forwardmost swab is adjacent the touchscreen when the mobile device is placed into the housing. Ex. 1002, ¶87. Only the distal portion of the exterior surface of the tip of one of the cotton swabs is in contact with (and remains in contact with) the touchscreen when the mobile device is placed into the housing, and regardless of movement of the remainder of the input mechanism between an unactuated position and an actuated extended position. *Id.*, ¶¶87-89.

3. Claim 3

Claim 3 depends from claim 1. Tech# discloses claim 1 (IX.A.1) and the additional limitations of claim 3:

The virtual reality viewer of claim 1, wherein an exterior wall of the housing is shaped to define a cut-out, and wherein at least a first portion of the input mechanism is accessible to the user through the cut-out.

As shown below, Tech# includes a cut out in an exterior wall of the housing, where the proximal end of the foil extension extends from within the housing, through the slot, to an exterior of the housing at the magnet, to be accessible by a user:



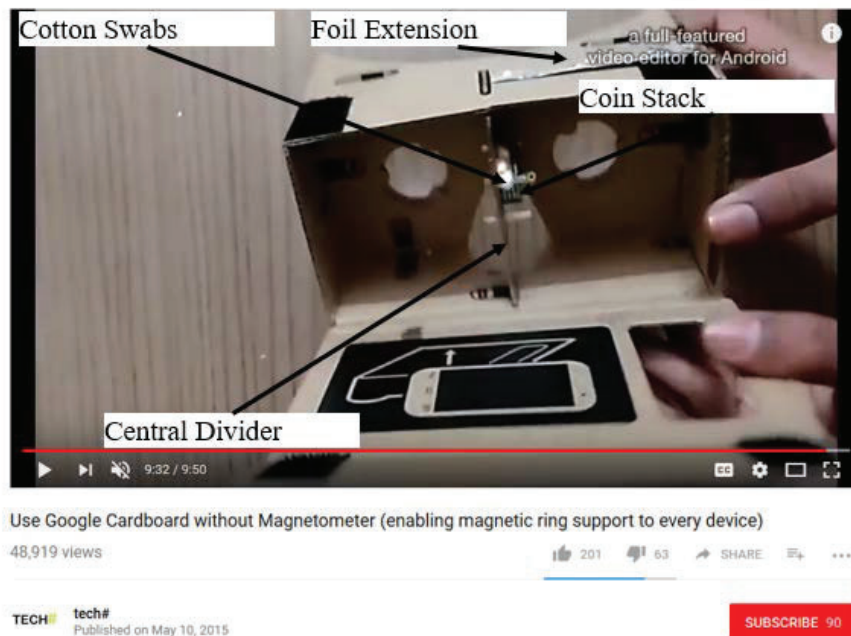
Ex. 1007 at 7:18, annotated for emphasis; Ex. 1002, ¶¶91-93.

4. Claim 5

Claim 5 depends from claim 1. Tech# discloses claim 1 (IX.A.1) and the additional limitations of claim 5:

The virtual reality viewer of claim 1, wherein at least a portion of the input mechanism defines at least a portion of a view divider within the interior of the housing, wherein the view divider is a structure that is generally centered within the interior and at least partially separates a left and a right region of the interior.

As explained above with respect to claim 1, Tech# discloses the foil extension, coin stack and cotton swabs attached to the central divider that is located centrally between left and right regions of the interior. Ex. 1002, ¶95. The coin stack, cotton swabs, and a portion of the foil extension within the housing of Tech# thus in part define at least a portion of a central view divider centered in the housing separating left and right regions of the interior:



Ex. 1007 at 9:32, annotated for emphasis Ex. 1002, ¶¶95-96.

B. Ground 2: Claims 1-3, 5-7, 16 and 17 are invalid under 35 U.S.C. § 103 as being unpatentable in view of Tech#.

Tech# discloses or teaches every element of the challenged claims 1-3, 5-7, 16 and 17, or such elements would have been obvious in view of the disclosure of Tech# to a POSITA.

1. Claim 1

A virtual reality viewer for use with a mobile electronic device having a touch-screen, the viewer comprising:

a housing configured to receive the mobile electronic device, wherein the housing is configured to hold the mobile electronic device such that the touch-screen is generally centered in a horizontal direction and directly in a user's field of view when looking into a generally hollow interior of the housing through a side opposite the touch-screen;

an input mechanism that is accessible from an exterior of the housing and is moveable within the interior between at least a first position and an extended position, the input mechanism comprising:

an electrical shield having a surface, wherein only a portion of the surface of the electrical shield is configured to contact a central region of the touch-screen of the mobile electronic device when the input mechanism is in the extended position.

To the extent Tech# lacks explicit disclosure of one or more limitations of claims 1, any difference between Tech# and the claims would be minor and no more than a design choice. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 and 421 (2007) (“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a

different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability” and “[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”).

Indeed, a POSITA would have recognized that Tech# used household materials and construction techniques available to a user, and a POSITA would have been motivated to modify Tech# to provide a more accurate, consistent, and durable input mechanism for capacitive touch. Ex. 1002, ¶101.

For example, a POSITA would have recognized that the moistened cotton swabs taught by Tech# are not ideal material for inducing a touch event and thus would have been motivated to substitute the material of the swabs with a more suitable material. Ex. 1002, ¶102. For example, moistened cotton swabs might lose their electrical conductivity as they dry out or wear out after only a few use cycles, and wet swabs might soil the screen of the user’s mobile device. *Id.* Examples of such suitable materials that would have been design alternatives well-known to a POSITA include: metallized fabrics, metallized polymers; conductive polymers, and conductive fabric. Ex. 1002, ¶¶52-53; 102-103. Indeed, a POSITA would have understood that, as explained in Compton, suitable materials for inducing a touch event on a capacitive display included any “electrically conductive material that

increases or changes the relative capacitance, or parasitic capacitance to ground, when contact is made with the capacitive sensors of the display.” Ex. 1008 at [0050].

Other modifications to Tech# would have been obvious to a POSITA motivated to improve on the materials and techniques of Tech#, including those modifications described below.

2. Claim 2

The virtual reality viewer of claim 1, wherein input mechanism is configured to provide a capacitive touch input to the touch-screen when the input mechanism is in the extended position, and

wherein at least a portion of the input mechanism is moveable between the first position and the extended position and is located within a central region of the interior that is between a left and a right region of the interior and the field of view such that only the portion of the surface of the electrical shield contacts the central area of the touch-screen of the mobile electronic device.

See the argument for claim 1. *See* IX.B.1.

3. Claim 3

The virtual reality viewer of claim 1, wherein an exterior wall of the housing is shaped to define a cut-out, and wherein at least a first portion of the input mechanism is accessible to the user through the cut-out.

See the argument for claim 1. *See* IX.B.1.

4. Claim 5

The virtual reality viewer of claim 1, wherein at least a portion of the input mechanism defines at least a portion of a view divider within the interior of the housing, wherein the view divider is a structure that is generally centered within the interior and at least partially separates a left and a right region of the interior.

Claim 5 depends from claim 1, See the argument for claim 1. *See* IX.B.1.

If it is deemed that the input mechanism of Tech#, including the swabs, does not “define[] at least a portion of a view divider,” such difference between the disclose of Tech# and the limitations of claim 5 amounts to nothing but an obvious design choice well within the knowledge of a POSITA. Ex. 1002, ¶¶105-108.

Tech# is a homemade modification of Cardboard where the input mechanism is simply wrapped-around, taped, or string-tied to Cardboard structures, including the central divider. Ex. 1002, ¶107. A POSITA would have recognized that the temporary construction materials and techniques of Tech# could be made permanent or more durable by, in part, integrating components. It would have been obvious to a POSITA that one such design option would integrate electrically conductive material as a portion of the view divider. *Id.*

Accordingly, claim 5 is obvious in view of Tech#. *See also* Ex. 1002, ¶108.

5. Claim 6

Claim 6 depends from claim 1. Tech# discloses and/or renders obvious claim 1 (IX.A.1 and IX.B.1), and the additional limitations of claim 6 are obvious in view of, if not disclosed by, Tech#.

The virtual reality viewer of claim 1, wherein the electrical shield comprises one or more of: a metallized fabric, a metallized polymer; a conductive polymer, a conductive fabric, a rigid flex printed circuit board and a flexographic ink.

As discussed above in IX.B.1, it would have been obvious to modify Tech# to substitute the material of the swabs with a more suitable material. Included in examples of such more suitable materials were conductive materials already known and used in stylus input devices for use with capacitive touchscreen devices. Ex. 1002, ¶110. Suitable materials well-known to a POSITA would include conductive fabric, conductive foam, conductive polymers such as rubber, or other materials metalized to create or improve conductivity, such as metalized fabrics. *Id.*, ¶¶52-53 (identifying exemplary prior art publications describing conductive stylus materials) and 110; *KSR*, 550 U.S. at 421 (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”). Employing such materials would be a design choice, based on the well-known properties of the

materials, to achieve a predictable result—to conduct a touch signal from a human body to the capacitive touchscreen. Ex. 1002, ¶111.

Accordingly, claim 6 is obvious in view of Tech#. *See also* Ex. 1002, ¶112.

6. Claim 7

Claim 7 depends from claim 6. Tech# discloses and/or renders obvious claims 1 and 6 (IX.A.1, IX.B.1 and IX.B.2), and the additional limitations of claim 7 are obvious in view of, if not disclosed by, Tech#.

The virtual reality viewer of claim 6, wherein the surface of the electrical shield is sized to have electrical properties that are sufficient to be detected by the touch-screen based on capacitance when the input mechanism is in the extended position and only the portion of the surface is contacting the touch-screen.

Tech# discloses this additional limitation, which is dependent from the limitation of claim 6 of the ‘075 patent. As discussed in IX.A.1.d, the swabs have a rounded surface such that only a distal section (“a portion”) of the surface contacts the touchscreen. Ex. 1007 at 3:36, 5:28, 9:32.

Moreover, because the purpose of the input mechanism and electrical shield is to have a touch registered on the touchscreen, a POSITA would understand that the contact area with the touchscreen must be sufficiently sized for detection. Ex. 1002, ¶114. The “sufficient” size would be based on the touchscreen technical specifications and requirements, and also could be easily ascertained by a POSITA.

Id. (identifying exemplary prior art publications describing sufficient minimum contact area for stylus tip).

Accordingly, claim 7 is obvious in view of Tech#. *See also* Ex. 1002, ¶115.

7. Claim 16

Claim 16 depends from claim 1. Tech# discloses and/or renders obvious claim 1 (IX.A.1 and IX.B.1), and the additional limitations of claim 16 are obvious in view of, if not disclosed by, Tech#.

The virtual reality viewer of claim 1, further comprising: a plurality of input mechanisms; wherein each of the plurality of input mechanisms are accessible from the exterior of the housing at a respective location and are moveable within the interior;

wherein each of the plurality of input mechanisms have a respective electric shield having a respective surface located within the interior of the housing, and wherein only a respective portion of the respective surface is configured to contact the central region of the touch-screen at a distinct respective location when in the extended position.

As discussed above, each of the elements of the single input mechanism of claim 1 is disclosed by Tech# or obvious in view of Tech#. *See* IX.A.1 and IX.B.1. Claim 16 requires a plurality of such mechanisms. Adding an additional input mechanism could be accomplished, for example, by adding the same input mechanism structure from Tech# to the other side of the central divider. Ex. 1002, ¶¶117-119.

The desire to add additional input mechanism features is a design choice by a POSITA. *Id.* For example, offering users the option of a left-handed or right-

handed input mechanisms, or VR designers the possibility of receiving multiple, different screen inputs (for example, button “A” or “B” or both). Ex. 1002, ¶117. Physically, adding additional input mechanisms would have been a matter of merely duplicating known, existing parts. Ex. 1002, ¶118.

Locating these input mechanisms so that the respective electrical shields are located at a central region of the touchscreen is a matter of obvious design choice to avoid obscuring the user’s view. Ex. 1002, ¶119. Moreover, because of the different form factors (sizes) of mobile devices, centrally locating the point of contact is more likely to work with all sizes of displays and, compared to locating the contact point along the periphery, substantially lowers the risk that it will miss the touchscreen. Ex. 1002, ¶120. In addition, the central region of the display (between the left image and the image) is likely not in use, so locating the contact point centrally is efficient use of the display space (compared to peripheral screen space that might otherwise be used for the images). Ex. 1002, ¶121.

Accordingly, claim 16 is obvious in view of Tech#. *See also* Ex. 1002, ¶122.

8. Claim 17

Claim 17 depends from claim 1. Tech# discloses and/or renders obvious claim 1 (IX.A.1 and IX.B.1), and the additional limitations of claim 17 are obvious in view of, if not disclosed by, Tech#.

The virtual reality viewer of claim 1, further comprising at least one additional user input devices that is accessible from an exterior of the housing.

As discussed for claim 16, it would have been obvious and a matter of design choice to a POSITA to include an additional user input mechanism for the touchscreen. *See* IX.B.7.

Moreover, Mr. Keller stated that would also have been an obvious matter of design choice to a POSITA to include a different user input device for the user to interact with the mobile device other than through the touchscreen. Ex. 1002, ¶¶124-127. Indeed, the '075 patent admits that other types of external controllers with a wired or wireless connection to the mobile device were known in the prior art.

Other VR viewers utilize dedicated input devices, like video game controllers, that connect to the electronic device within the viewer either by a wired plug like connection (e.g., USB or Apple compatible connector), or a wireless connection capabilities.

Ex. 1001 at 2:1-6. As Mr. Keller stated in his declaration:

Including additional user input devices is a design choice by a POSITA, for example, motivated by or desiring to offer users the ability to control other feature of the mobile device while located within the headset, such as for example, volume controls, camera activation, or affording VR software designers the possibility of receiving multiple, different inputs to control the experience, such as offering a joystick or other video-game type controller to allow the user to “move” virtually in a direction independent of the orientation of the headset or mobile device. Simply put, additional inputs options allow VR software designers and users the ability to create or access more features. And adding such an additional input device would have

been simple as such input devices existed and were well known in prior art VR viewers.

Ex. 1002, ¶127. Accordingly, claim 17 is obvious in view of Tech#. *See also* Ex. 1002, ¶128.

C. Ground 3: Claims 1-17 and 20 are invalid under 35 U.S.C. § 103 as being unpatentable in view of Tech#, further in view of Compton.

As discussed above, Tech# is directed to a VR viewer that provides a mechanism for actuating the capacitive touchscreen of a mobile device while the mobile device is in the viewer. This was a known problem, as noted during the June 2014 Google I/O event (Ex. 1013 at 19:14-19:49) and as admitted in the background of the '075 patent; Ex 1001 at 1:56-59.

Like Tech#, Compton is also directed to a virtual/augmented reality device. Ex. 1008; Ex. 1002, ¶68. Also like Tech#, the device of Compton is designed to receive a mobile device, which generates the virtual content to be viewed. *Id.* Additionally, Compton, like Tech#, is directed specifically to input mechanisms for causing a touch event at a touchscreen of the mobile device while the mobile device is in a viewer. *Id.*

Tech# and Compton are analogous art and a POSITA would have been motivated to look to the teachings of Compton to improve the input mechanism disclosed in Tech#, resulting in a more accurate, precise and/or stable input mechanism capable of causing more accurate, precise, and consistent capacitive

responses at the touchscreen. *Id.*, ¶¶134-136. Substituting one input mechanism for another would have been a mere matter of simple design choice for a POSITA. *Id.*, ¶134; *KSR*, 550 U.S. at 417 and 421 (“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability” and “[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”).

1. Claim 1

Tech# discloses each and every limitation of claim 1, as detailed below.

- a. A virtual reality viewer for use with a mobile electronic device having a touch-screen, the viewer comprising:**

Tech# discloses this limitation as discussed above. *See* IX.A.1; Ex. 1002,

¶130.

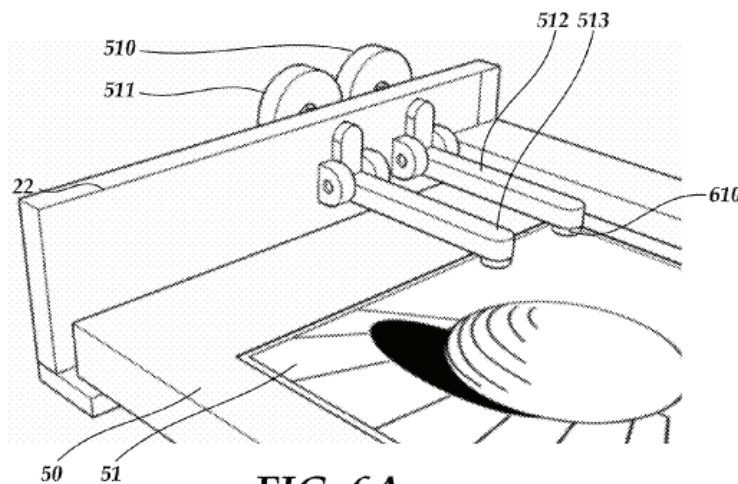
- b. a housing configured to receive the mobile electronic device, wherein the housing is configured to hold the mobile electronic device such that the touch-screen is generally centered in a horizontal direction and directly in a user's field of view when looking into a generally hollow interior of the housing through a side opposite the touch-screen;**

Tech# discloses this limitation as discussed above. *See* IX.A.1; Ex. 1002,

¶131.

- c. **an input mechanism that is accessible from an exterior of the housing and is moveable within the interior between at least a first position and an extended position,**

Compton discloses a rocker arm 512 having a tip 610 (electrical shield) that is a capacitive for touching a touchscreen. Ex. 1008 at [0048-0051]. Pushing 510 actuates the lever 512, which causes tip 610 to move from a first position not in contact with the touchscreen to a second position in contact with the touchscreen. *Id.* at [0048-0059], Fig. 6A; Ex. 1002, ¶133.



It would have been obvious to a POSITA to modify Tech# to replace the input mechanism of Tech# with the input mechanism of Compton such that the button 510 is generally centered on the top surface of the viewer and the rocker 512 is positioned vertically so tip 610 would move toward the touchscreen when

the button is pressed. Ex. 1002, ¶134. A POSITA would have recognized that the teachings of Compton would be useful in improving the viewer of Tech#. Ex. 1002, ¶¶134-137.

For example, a POSITA would have recognized that the materials of tip 610 are an improvement over the swab material identified in Tech#. Ex. 1002, ¶135. Additionally, the rocker of Compton is more durable and mechanically reliable than the homemade design of Tech#. *Id.* And the rocker of Compton readily accommodates mobile devices of different thicknesses compared to Tech#. *Id.* Finally, and as discussed in IX.B.4, it would have been obvious to a POSITA to locate the input mechanism of Compton at the central divider so that it does not obstruct the user's view of the mobile device screen, is more likely to work with different-size displays and, compared to locating the contact point along the periphery, is more efficient use of display space. Ex. 1002, ¶136.

Accordingly, by replacing the input mechanism of Tech# with the input mechanism (510, 512 and 610) of Compton located at the central divider, the modified Tech# would include an input mechanism that is accessible from an exterior of the housing and is moveable within the interior between at least a first position and an extended position. *Id.*, ¶137.

- d. the input mechanism comprising: an electrical shield having a surface, wherein only a portion of the surface of the electrical shield is configured to contact a central region of the touch-screen of the mobile**

electronic device when the input mechanism is in the extended position.

According to the '075 patent, the “electrical shield is a material configured to, when brought in proximity to and/or touches the touchscreen, induce a touch event that is electrically detectable by the touchscreen/device.” Ex. 1001 at 7:22-25. The input mechanism disclosed in Tech# includes the cotton swabs as an “electrical shield.” Ex. 1002, ¶138. Compton discloses an electrical shield at tip 610, which “is made of an electrically conductive material that increases or changes the relative capacitance, or parasitic capacitance to ground, when contact is made with the capacitive sensors of the display.” Ex. 1008 at [0050]; *Id.*

Figure 6A of Compton appears to show a tip 610 that is rounded such that only a portion of tip 610 is configured to contact the touchscreen. Ex. 1002, ¶139. Moreover, Tech# discloses the concept of utilizing a rounded tip in which only a portion (the distal end) of the tip contacts the touchscreen. Ex. 1007 at 3:36, 9:32, annotated for emphasis; Ex. 1002, ¶139. Whether only part of the surface, or the entire surface, of tip 610 contacts the touchscreen is the epitome of design choice. It matters only that the contact surface between the touchscreen and the electric shield is sufficient to cause a touch event. *Id.* Depending on the choice of materials for the tip, POSITA would know, or could readily ascertain by testing, the contact surface area sufficient to cause a touch event. *Id.*

Accordingly, claim 1 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶140.

2. Claim 2

Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional limitations of claim 2:

The virtual reality viewer of claim 1, wherein input mechanism is configured to provide a capacitive touch input to the touch-screen when the input mechanism is in the extended position, and

wherein at least a portion of the input mechanism is moveable between the first position and the extended position and is located within a central region of the interior that is between a left and a right region of the interior and the field of view such that only the portion of the surface of the electrical shield contacts the central area of the touch-screen of the mobile electronic device.

The input mechanism of Compton includes the additional features of claim 2. According to Compton “when one of push buttons 510-511 is pressed by a viewer its corresponding rocker arm 512-513 swings downward and a special tip 610 at the end of the rocker arm makes contact with a fixed location on display 51 of mobile device 50.” Ex. 1008 at [0049]. The “first position” is before pressing button 510 and the “extended position” is the actuated position when tip 610 is in contact with the touchscreen. Ex. 1002, ¶142.

The rocker arm 512 and tip 610 are movable between the first position and the extended position. As discussed above (IX.C.1), modifying Tech# to use the input of Compton results in an input mechanism that moves within the interior in

the central region of the interior between a left and a right region of the interior such that it is not in the user's field of view. Ex. 1002, ¶143.

Accordingly, claim 2 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶144.

3. Claim 3

Claim 3 depends from claim 1. Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional limitations of claim 3.

The virtual reality viewer of claim 1, wherein an exterior wall of the housing is shaped to define a cut-out, and wherein at least a first portion of the input mechanism is accessible to the user through the cut-out.

Compton's input mechanism is connected through a wall of the unit so that the user-accessible exterior portion can be connected to the interior portions. Ex. 1002, ¶146. Providing a housing cut-out for the input mechanism would have been nothing more than an obvious design choice to a POSITA to accomplish this connection. *Id.* Accordingly, claim 3 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶147.

4. Claim 4

Tech# and Compton disclose claim 3 (IX.A.3 and IX.C.3) and the additional limitations of claim 4:

- a. **The virtual reality viewer of claim 3, wherein the housing substantially encloses the touch-screen within the interior, and further comprising:**

As shown In Tech# at at 0:15 and 5:32, the Cardboard housing substantially encloses a mobile electronic device and the touchscreen of the device within the interior of the housing when the front flap is Velcro-secured.



Ex. 1007 at 0:15.



Id. at 5:32; Ex. 1002, ¶149.

- b. a back wall opposite the touch-screen, wherein the back-wall includes a left and a right lens for viewing a left and a right region of the interior and the touch-screen within the housing;**

Tech# discloses the Cardboard housing having a back wall opposite the touchscreen, including left and right lenses for viewing an interior of the housing and the touchscreen in the interior:



Id. at 0:15; Ex. 1002, ¶150.

- c. wherein at least a second portion of the input mechanism is generally centered in the horizontal direction within the interior and is configured to move in a direction toward the touch-screen when the first portion of the input mechanism is actuated; and**

- d. **wherein the portion of the surface of the electrical shield is disposed on the second portion of the input mechanism and is generally centered within the interior in the horizontal direction whereby the portion is generally located between the left and right regions and is moveable between the first position and the extended position.**

As modified by Compton, rocker 512 is generally centered in the horizontal direction within the interior and is configured to move in a direction toward the touchscreen when the button 510 is actuated. Ex. 1002, ¶151. Additionally, tip 610 is disposed on rocker 512 and is generally centered within the interior in the horizontal direction and is moveable between the first position and the extended position. Accordingly, claim 4 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶¶152-153.

5. Claim 5

Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional limitations of claim 5.

The virtual reality viewer of claim 1, wherein at least a portion of the input mechanism defines at least a portion of a view divider within the interior of the housing, wherein the view divider is a structure that is generally centered within the interior and at least partially separates a left and a right region of the interior.

The arguments previously made with respect to claim 5 under Ground 2 apply here. The Tech# device modified to include the Compton tip would still be attached to and, in part, define at least a portion of the central view divider.

Accordingly, claim 5 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶¶154-155.

6. Claim 6

Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional limitations of claim 6.

The virtual reality viewer of claim 1, wherein the electrical shield comprises one or more of: a metallized fabric, a metallized polymer; a conductive polymer, a conductive fabric, a rigid flex printed circuit board and a flexographic ink.

See IX.B.1, IX.C.1 and IX.C.5; Ex. 1002, ¶¶156-158. Accordingly, claim 6 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶159.

7. Claim 7

Tech# and Compton disclose claims 1 and 6 (IX.A.1, IX.C.1, IX.B.2 and IX.C.6) and the additional limitations of claim 7.

The virtual reality viewer of claim 6, wherein the surface of the electrical shield is sized to have electrical properties that are sufficient to be detected by the touch-screen based on capacitance when the input mechanism is in the extended position and only the portion of the surface is contacting the touch-screen.

See IX.B.3, IX.C.1 and IX.C.6; Ex. 1002, ¶160. In addition, Figure 6A of Compton shows a tip 610 that is rounded such that only a portion of tip 610 is configured to contact the touchscreen. Ex. 1002, ¶161. Depending on the choice of materials for the tip, POSITA would know, or could readily ascertain by testing, the contact surface area sufficient to cause a touch event. Ex. 1002, ¶¶53 and 161

(identifying exemplary prior art publications describing sufficient minimum contact area for stylus tip).

Accordingly, claim 7 is obvious in view of Tech# in view of Compton. *See* Ex. 1002, ¶162.

8. Claim 8

Tech# and Compton disclose claims 1 and 6 (IX.A.1, IX.C.1, IX.B.2 and IX.C.6) and render obvious the additional limitations of claim 8.

The virtual reality viewer of claim 6, wherein the surface of the electric shield is sized to have sufficient capacitive properties such that contact between only the portion of the surface and the touch-screen can be detected by a capacitive touch-screen when the input mechanism is in the extended position and in the absence of human contact with the electric shield.

Tip 610 of Compton's rocker arm 512 is disclosed as being made of an electrically conductive material that causes a capacitive touch. Ex. 1002, ¶165. Compton makes no mention of human contact with the electric shield being needed for the tips 610 to function. Ex. 1008 at [0050]. Moreover, a POSITA would have been aware of conductive materials with capacitive properties to trigger a capacitive touch even when the user is not in contact with the electric shield—for example, when wearing gloves. Ex. 1002, ¶¶164-165. It would have been a design choice of POSITA to select material (or incorporate a power source) to permit a user to wear gloves or otherwise not need to contact the electric shield but still cause a capacitive touch. Ex. 1002, ¶165. Indeed, further evidence that a POSITA

would know and understand how to implement such an element or feature is evident from the superficial discloser in the Specification:

Moreover, the exemplary viewer and user input assembly can be configured to allow a user to interact with the touch sensitive screen without reliance on the electrical properties of the human body to induce the electrical event. For instance, the metallized film 725 can be sized such that it is suitable for inducing a touch event without requiring user contact therewith.

Ex. 1001 at 10:61-67. Accordingly, modifying Tech# and/or Compton in this regard would have been an obvious design modification. Ex. 1002, ¶¶164-167.

Furthermore, the POSITA would also have been motivated to provide the modified electrical shield in a construction that is not always in contact with the touchscreen; otherwise the modified electrical shield would cause a continuous capacitive touch, movement of the electrical shield into and out of contact with the touchscreen (as disclosed in Compton) would have been an obvious design modification of Tech# in view of Compton. *See also* IX(C)(4).

Accordingly, claim 8 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶168.

9. Claim 9

The virtual reality viewer of claim 8, wherein the only portion of the surface that is configured to contact the touch-screen when the input mechanism is in the extended position is substantially smaller in size than the remaining portion of the surface of electric shield that is not configured to contact the touch-screen.

Tech# and Compton, alone or in combination, disclose the limitations of claim 8. *See* IX.B.8; Ex. 1002, ¶169.

As for the additional limitations, the portion of the swabs of Tech# that are configured to contact the touchscreen is substantially smaller than the remaining portion of the surface area of the electric shield, for example the aluminum foil. Ex. 1002, ¶170.

Further, tip 610 of Compton's rocker arm 512 is disclosed as sufficiently sized for causing a capacitive touch at a touchscreen. Ex. 1002, ¶¶171-172. The contact surface of tip 610 is only partially in contact with the touchscreen, and a remaining portion of the surface that extends upwardly towards lever arm, at a radially outer periphery of surface, is not contactable with the touchscreen, and is larger in size than the contact surface of tip 610. *Id.* The size of the part of the electric shield that contacts the touchscreen, relative to the size of the electric shield, would have been nothing but a matter of simple design choice to a POSITA and dictated, in large part, by the technical touch requirements and sensitivity of the mobile device displays. Ex. 1002, ¶173.

Accordingly, claim 9 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶174.

10. Claim 10

Tech# and Compton disclose claims 1 and 6 (IX.A.1, IX.C.1 and IX.C.6) and render obvious the additional limitations of claim 10.

The virtual reality viewer of claim 6, further comprising a compressible pad disposed between the second portion of the input mechanism and the portion of the surface of the electric shield, wherein the pad is configured to create a sufficiently sized area of contact between the portion of the surface and the touch-screen when the input mechanism is in the extended position.

Tech# and Compton, alone or in combination, disclose the limitations of claim 6. *See* IX.C.1 and IX.C.6; Ex. 1002, ¶175.

The cotton swab of Tech#'s input mechanism are compressible material. Ex. 1002, ¶176. Further, tip 610 of Compton's rocker arm 512 is disclosed as being compressible—i.e., being made of a flexible material. Ex. 1008 at [0050]; Ex. 1002, ¶¶176-177.

The compressible pads of Tech# and Compton are located at the end of the input mechanism contacting the touch-screen. Although the claim states that it is positioned “between the second portion of the input mechanism and the portion of the surface of the electric shield,” the location is simply a matter of design choice within the discretion of POSITA. Ex. 1002, ¶177. A basic design consideration for these viewer devices is accommodating different mobile device form factors, particularly differing thicknesses. *Id.* A POSITA would have recognized that the use of compressible pad between the actuator of the input mechanism (*e.g.*, a lever

or button) and the electric shield would provide improved control over the force applied to the screen by the electric shield. *Id.*, ¶¶ 177-178 (citing prior art publications disclosing this placement). The use of a compressible pad as set forth in claim 10 would have been an obvious design choice to provide this flexibility. Ex. 1002, ¶¶177-179.

Accordingly, claim 10 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶180.

11. Claim 11

The virtual reality viewer of claim 10, wherein the pad is configured to vary the size of the area of contact between the portion of the surface of the electric shield and the touch-screen as a function of a force applied to the input mechanism from the exterior of the housing.

Tech# and Compton, alone or in combination, disclose the limitations of claim 10. *See* IX.C.10; Ex. 1002, ¶181.

With respect to the additional elements of claim 11, using more force to cause a greater or more significant screen touch event is a well-known, common activity. Ex. 1002, ¶182. Indeed, this is what mobile device users typically do with their finger—pressing harder to cause more of the finger to engage the screen—and the entire input mechanism is intended to mimic a user screen touch even though the user cannot readily access the screen with a finger. *Id.* It would have been obvious to a POSITA to configure the compressible pad of Tech# or Compton or as modified in claim 10, to increase the size of the contact area with

the touchscreen as more force is applied by the user, thereby mimicking the properties of a real, round-tipped finger. *Id.* This is a design choice, utilizing the well-known properties of compressible materials, including user's fingers on a touchscreen display, to achieve a predictable result. *Id.*

Accordingly, claim 11 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶183.

12. Claim 12

Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional limitations of claim 12.

The virtual reality viewer of claim 1, wherein the input mechanism includes a lever and a flexible linkage coupled to the housing, wherein the flexible linkage is configured to deform when the lever is actuated and thereby guide at least the portion of the surface between the first position and the extended position.

Tech# and Compton, alone or in combination, disclose the limitations of claim 1. *See* IX.A.1, IX.B.1 and IX.C.1; Ex. 1002, ¶184.

Compton's rocker arm 512 is a lever, which is movable to vary the position of tip 610 into and out of contact with a touchscreen. Ex. 1002, ¶185. Because the viewer's input mechanism must selectively engage and disengage the screen to cause a touch event, a POSITA would understand that the input mechanism returns to the unactuated, first position after the user triggers movement to the actuated, extended position. Ex. 1002, ¶¶185-186; Ex. 1001 at 8:16-26. A POSITA at least

would have understood that it would be desirable if the button of Compton actuating the rocker were adapted to automatically return from its extended position to its unactuated position, Ex. 1002, ¶186.

Design options were known to POSITA to achieve this needed feature, such as compressing a spring, or using flexible linkage or deforming a flexible material as part of the actuating process, and then using the potential energy to guide the input mechanism back to the unactuated state. Ex. 1002, ¶187; Ex. 1001 at 8:16-26.

Employing flexible linkage is a design choice, based on the well-known properties of flexible materials, to achieve a predictable result—using potential energy to return the input mechanism from the actuated to the unactuated state to reset the switch. Ex. 1002, ¶188.

Accordingly, claim 12 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶189.

13. Claim 13

Tech# and Compton disclose or render obvious claims 1 and 12 (IX.A.1, IX.C.1 and IX.C.12) and the additional limitations of claim 13.

The virtual reality viewer of claim 12, wherein at least a portion of the flexible linkage is integrally formed with the housing.

Tech# and Compton, alone or in combination, disclose or render obvious the limitations of claim 12. *See* IX.C.12; Ex. 1002, ¶190.

Whether part of the flexible linkage is “integrally formed” with the housing is purely a matter of design choice, based in part on material and assembly ease and costs. Ex. 1002, ¶191. The ’075 patent confirms that that there is no reason related to the invention to pick between these obvious design choices. Ex. 1001 at 8:28-39.

Accordingly, claim 13 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶193.

14. Claim 14

Tech# and Compton disclose or render obvious claims 1 and 12 (IX.A.1, IX.C.1 and IX.C.12) and the additional limitations of claim 14.

The virtual reality viewer of claim 12, wherein the flexible linkage is configured to return the portion of the surface from the extended position to the first position in the absence of user interaction with the input mechanism.

Tech# and Compton, alone or in combination, disclose or render obvious the limitations of claim 12. *See* IX.C.12; Ex. 1002, ¶194.

As discussed above for claim 12, the input mechanism is to selectively cause a touchscreen event when desired by the user. Ex. 1002, ¶195. A POSITA would have understood that the user might want to trigger repeated touch events during the period of use, and therefore the input mechanism must return to a first, unactuated state after extending into the actuated state. *Id.* This reset can be accomplished either manually—for example, by manually flipping a lever back to

the first position—or automatically, without requiring the user to do it herself by using a spring or flexible linkage or material. *Id.* Selecting one of two known choices, manual or automatic, is an obvious design choice. *Id.*

Accordingly, claim 14 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶196.

15. Claim 15

Claim 15 is an amalgamation of the various elements of claims 1, 3, 7 and 12 and, as previously discussed, Tech# and Compton, alone or in combination, disclose the limitations of claims 1, 3, 7 and 12. *See* IX.C.1, IX.C.3; IX.C.7, and IX.C.12; Ex. 1002, ¶¶197-199.

The virtual reality viewer of claim 1, wherein the housing is formed to define a cut-out through an exterior side of the housing; and

wherein the input mechanism further comprises:

a lever that is accessible through the cut-out;

wherein the surface of the electrical shield is sized to have capacitive properties sufficient to provide a detectable capacitive touch input to the touch-screen when the input mechanism is in the extended position and only the portion of the surface contacts the touch-screen; and

a flexible linkage coupled to the lever and the housing, wherein the linkage is configured to flex in response to actuation of the lever and guide at least the portion of the surface between the first position and the extended position and return to the first position in response to release of the lever after actuation is complete.

As discussed above for claims 1, 3, 7 and 12, each of these claim elements is simply a matter of design choice and obvious to a POSITA. Ex. 1002, ¶¶197-199. Likewise, combining these elements together is likewise an obvious design choice. *Id.*

Accordingly, claim 15 is obvious in view of Tech# in view of Compton.

16. Claim 16

Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional limitations of claim 16.

The virtual reality viewer of claim 1, further comprising: a plurality of input mechanisms; wherein each of the plurality of input mechanisms are accessible from the exterior of the housing at a respective location and are moveable within the interior;

wherein each of the plurality of input mechanisms have a respective electric shield having a respective surface located within the interior of the housing, and wherein only a respective portion of the respective surface is configured to contact the central region of the touch-screen at a distinct respective location when in the extended position.

See IX.B.1 and IX.C.1; Ex. 1002, ¶200. Each of the elements of the single input mechanism of claim 1 is disclosed by Tech# or obvious in view of Tech#. Claim 16 further requires a plurality of such mechanisms. Adding an additional input mechanism could be accomplished, for example, by adding the same input mechanism structure from Tech# to the other side of the central divider. Ex. 1002, ¶201. The desire to add additional input mechanism features is a design choice by a POSITA. Ex. 1002, ¶202. For example, doing so would offer users the option of a

left-handed or right-handed input mechanisms, or VR designers the possibility of receiving multiple, different screen inputs (for example, button “A” or “B” or both). *Id.*

Compton does exactly this:

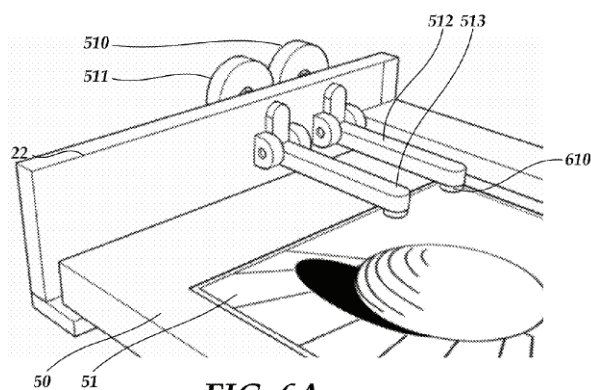


FIG. 6A

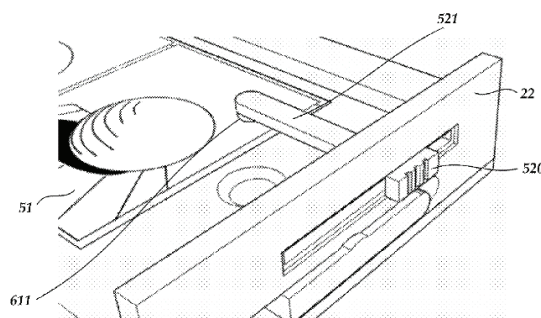


FIG. 6B

Ex. 1008; Ex. 1002, ¶¶202-203.

Compton discloses multiple lever input mechanisms (510, 512, 610) and (511, 513, 611) and a slider input mechanism (520, 521 611), as shown in Figs. 6A and 6B of Compton. Ex. 1008 at [0047-0051]; Ex. 1002, ¶¶203. Physically, implementing this simple design choice would involve nothing more than adding the disclosed input mechanisms of Compton to the device of Tech# (*e.g.*, one on each side of the central divider). *Id.*

Accordingly, claim 9 is obvious in view of Tech# in view of Compton. *See also id.*, ¶204.

17. Claim 17

Tech# and Compton disclose claim 1 (IX.A.1 and IX.C.1) and the additional

limitations of claim 17.

The virtual reality viewer of claim 1, further comprising at least one additional user input devices that is accessible from an exterior of the housing.

As previously discussed it would have been obvious to a POSITA to modify TECH# by adding “at least one additional user input” from Compton. *See* IX.C.16; Ex. 1002, ¶¶205-207.

Accordingly, claim 17 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶208.

18. Claim 20

Independent claim 20 contains a combination of claim elements previously discussed and disclosed in Tech# and Compton, alone or in combination.

- a. A virtual reality viewer for use with a mobile electronic device having a touch-screen, the viewer comprising:

a housing configured to receive a mobile electronic device within an interior of the housing, wherein the housing is formed to define a cut-out through an exterior side of the housing;**

Tech# discloses a VR viewer with a housing to receive a mobile electronic device within. *See* IX.A.1. Further, as discussed for claim 3, Tech# discloses a cut-out through the exterior side of the housing. *See* IX.A.3; Ex. 1002, ¶¶209-210.

- b. an input mechanism that is accessible from an exterior of the housing and is moveable within the**

interior between at least a first position and an extended position, the input mechanism comprising:

Tech# and Compton disclose the input mechanism of this element. *See* IX.A.1.c (Tech#) and IX.C.1.c (Compton); Ex. 1002, ¶211.

c. a lever that is accessible through the cut-out;

Compton discloses an input mechanism that includes a lever accessible on the exterior of the housing through a cut-out. *See* IX.C.12; Ex. 1002, ¶¶212-213.

d. an electrical shield, wherein only portion of a surface of the electrical shield is configured to contact the touch-screen of the mobile electronic device when in the extended position,

As previously discussed for claims 7-9, Tech# and Compton disclose an electrical shield as part of the input mechanism where only a portion (tip 610) is configured to contact the touch-screen. *See* IX.C.7-9; Ex. 1002, ¶214.

e. a flexible linkage coupled to the lever and the housing, wherein the linkage is configured to deform in response to actuation of the lever and thereby guide the portion of the surface between the first position and the extended position, and

As previously discussed for claim 12, it would have been obvious to a POSITA to modify the input mechanism of Tech# or Compton to include the flexible linkage of this element. *See* IX.C.12; Ex. 1002, ¶215.

f. wherein at least a portion of the input mechanism defines at least a portion of a view divider within the interior of the housing.

As previously discussed for claim 5, the input mechanism of Tech# either discloses—or it would have been obvious to a POSITA to modify Tech# such—that at least a portion of the input mechanism defines at least a portion of a view divider within the interior of the housing. *See* IX.A.4 and IX.B.1; Ex. 1002, ¶216.

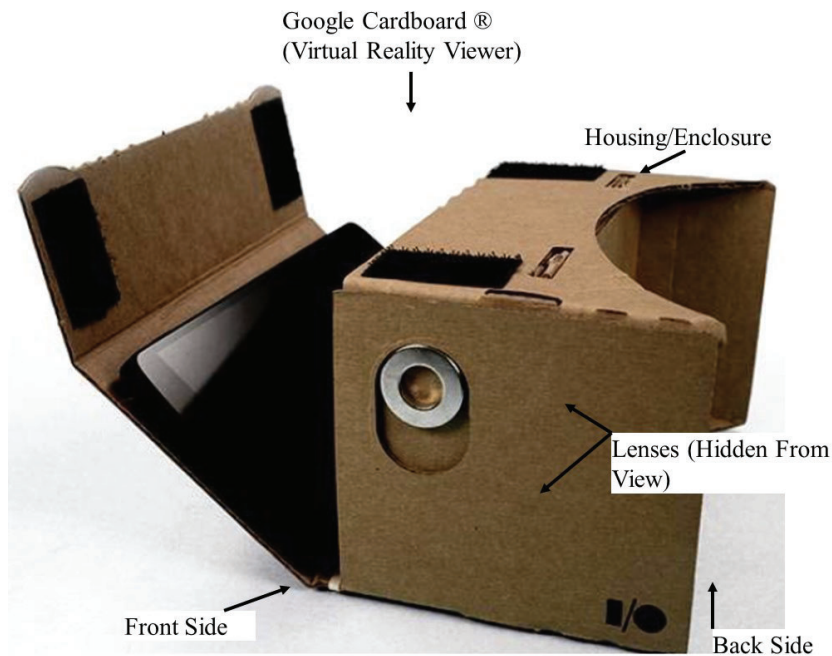
Accordingly, claim 20 is obvious in view of Tech# in view of Compton. *See also* Ex. 1002, ¶217.

D. Ground 4: Claim 18 is invalid under 35 U.S.C. § 102 as being anticipated by of Gigaom.

1. Claim 18

- a. A virtual reality viewer for use with a mobile electronic device having a capacitive touch-screen, the viewer comprising: a housing configured to receive the mobile electronic device and substantially enclose the touch-screen within a generally hollow interior of the housing,**

Gigaom discloses a housing for enclosing a mobile device with a touchscreen. An annotated image from Gigaom of a mobile device being enclosed is shown below:



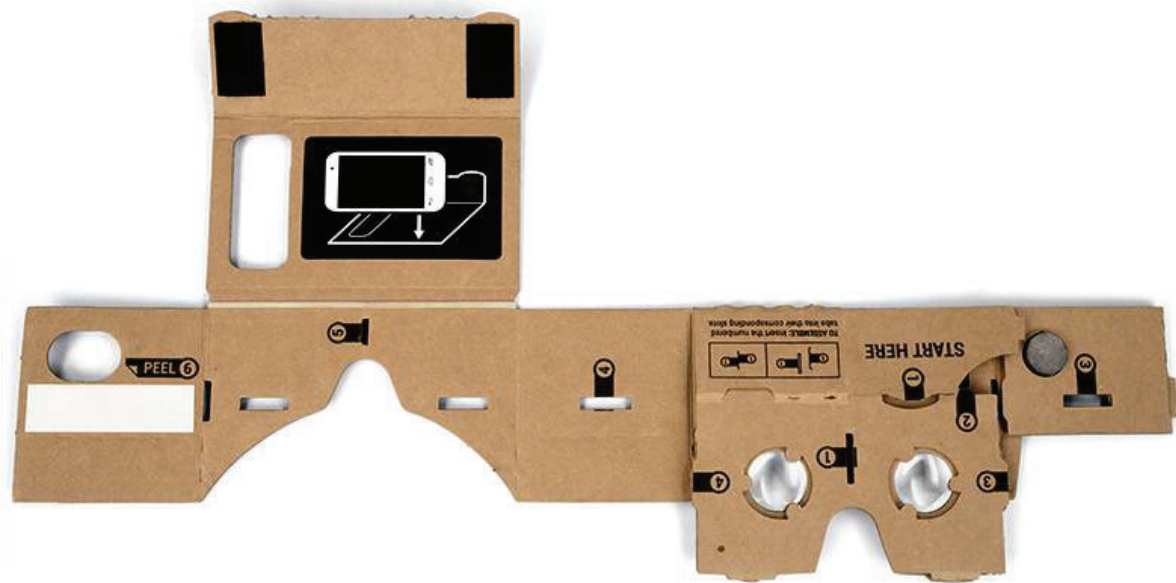
Ex. 1007. *See also* Ex. 1002, ¶¶219-220.

- b. wherein the housing holds the touch-screen in a position that is generally centered in a horizontal direction and directly in a user's field of view when viewing the touch-screen through a back wall of the housing,**

As shown above, the touchscreen is positioned centrally and in the user's view from a backside of the housing. Ex. 1007; Ex. 1002, ¶¶221-222.

- c. wherein the back-wall is opposite the touch-screen and includes a left and a right lens for viewing a left region and a right region of the interior and the touch-screen;**

The back wall is opposite the touchscreen and has lenses for viewing the left and right regions of the interior and touchscreen.



Ex. 1007; *See also* Ex. 1002 at 223-224.

- d. an input device including, a first portion that is accessible from an exterior of the housing, and an elongate second portion disposed within the interior of the housing between the left and right regions wherein the second portion is generally oriented in a vertical direction that is perpendicular to the horizontal direction;

Tobiasclaren suggested use of an elongate metal tape at the separator between the eyes:

The alternative: A metal tape at the separator between the eyes. It has contact with the touch screen.
If you touch this metal tape (alloy, or this small copper tape for Tiffany), is it the same like this “magnet click”.
 And the compass is full working.
 Test it with a wire on every capacitive touch screen.

Ex. 1009, emphasis added.

A POSITA would have understood that the “separator between the eyes” was the center divider, which is shown clearly in Ex. 1010 and is oriented in a vertical direction perpendicular to the horizontal direction:



Ex. 1010 at 6:05, annotated for emphasis; Ex. 1002, ¶¶225-226.

A POSITA would have understood the comment to suggest placing metal tape vertically along the central divider, which would maximize contact with the touchscreen and not obstruct the images on the display. Ex. 1009, Ex. 1002, ¶227. Additionally, a POSITA would have understood that tobiasclaren was suggesting that part of the magnetic tape should extend to the exterior of the housing so that the user could “touch this metal tape.” Ex. 1009, Ex. 1002, ¶228.

A POSITA would have understood that that the metal tape is an input device, that the portion of the metal tape on the exterior of the housing is the first portion, and that the portion of the metal tape on the central divider is the elongate second portion. Ex. 1002, ¶¶229-230.

- e. **an electric shield, wherein a first surface of the electric shield is disposed on the first portion and is electrically coupled to a second surface of the electric shield, wherein the second surface is disposed on the second portion within the interior and is generally centered in the horizontal direction between the left and right regions, and**

A POSITA would have understood that the electric shield (the metal material surface on the metal tape suggested by tobiasclaren) has a first surface on the first portion (on the exterior of the housing) where the first surface is electrically coupled to the second surface on the second portion (on the central divider). Ex. 1002, ¶¶231-232.

- f. **wherein only the second surface of the electric shield is configured to contact a central portion of the touch-screen of the mobile electronic device and selectively transfer a capacitive touch input to the touch-screen in response to a user interaction with the first portion of the input mechanism.**

In the modification of tobiasclaren, only the second surface of the metal tape within the housing is configured to contact a central portion of the touchscreen adjacent the central separator between the eyes. Ex. 1002, ¶233. Capacitive touch is transferred along the metal tape from an exterior user contact with the first portion to the interior second portion in contact with the touchscreen. *Id.*, ¶¶233-235.

E. Ground 5: Claim 19 is invalid under 35 U.S.C. § 103 as being unpatentable in view of Gigaom.

1. Claim 19

Claim 19 depends from claim 18, and requires additional limitations including a “compressible pad.” Gigaom contains all of the limitations of claim 18, *see* Ground 4, IX.D.1, and renders claim 19 obvious. Claim 19 includes:

- a. The virtual reality viewer of claim 18, further comprising: a compressible pad disposed between the second portion and the second surface to provide an area of contact between the second surface and the touch-screen that is sufficient to transfer the capacitive touch input;**

Gigaom discloses a VR viewer utilizing metal tape to transfer the capacitive touch from the user to the screen. Ex. 1009; Ex. 1002, ¶236. As previously discussed regarding claim 10, utilizing a compressible pad between the second portion and the second surface to provide an area of contact for the capacitive material with the touchscreen would have been an obvious design modification to a POSITA. *See* IX.C.10; Ex. 1002, ¶¶236-237.

- b. wherein at least the electric shield includes a conductive material configured to transfer electrical capacitance between the first surface and the touch-screen via the second surface in response to a user interaction with the first surface; and**

Gigaom discloses configuring conductive materials, such as copper metal tape or wire, to transfer capacitance between a human touch (on the first surface at the first portion of housing) and the touchscreen. *See* IX.D.1.d-e; Ex. 1002, ¶238.

c. wherein the second portion of the input mechanism at least partially divides the left and right regions.

Gigaom discloses locating the copper tape at the separator between the eyes, thus at least partially dividing the left and right internal regions. *See* IX.D.1.d; Ex. 1002, ¶¶239-240.

X. CONCLUSION

For all the above reasons, institution of IPR of Claims 1-20 of the '075 patent is respectfully requested.

Dated: January 15, 2018

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §§ 42.24 *et seq.*, the undersigned certifies that this Petition complies with the 14,000 word type-volume limitation. The brief was prepared in Times New Roman 14-point font, double spaced, using Microsoft® Word and contains 13,993 words as indicated by Word, excluding the table of contents, table of authorities, mandatory notices section under § 42.8, certificate of compliance, certificate of service, and appendix of exhibits.

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**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105(a)**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a), the undersigned certifies that on the 15th day of January, 2018, a complete and entire copy of this Petition for Inter Partes Review been served via Federal Express overnight delivery to the Patent Owner on January 16, 2018, upon the following attorneys of record for the Patent Owner identified on U.S. PAIR:

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