UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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RING LLC,
Petitioner,

v.

SKYBELL TECHNOLOGIES, INC.,
Patent Owner

_____

PETITION FOR *INTER PARTES* REVIEW

OF

U.S. PATENT NO. 9,179,107

TABLE OF CONTENTS

I.   **INTRODUCTION**

U.S. Patent No. 9,179,107 ("the '107 Patent," RING-1001) is generally

directed to the concept of a doorbell system that emits a sound derived from a data

file. Because such systems were already well known before the '107 Patent, the

claims filed with the '107 Patent application warranted a thorough examination.

The Examiner, however, issued a notice of allowance after only five months,

without issuing a single office action. This brief examination failed to reveal that

the "allowable" subject matter—coupling a phone or tablet to a door chime—was

already fully disclosed in the art.

For example, U.S. Patent Application Publication No. 2007/0008081 to

Tylicki teaches a customizable door chime system that plays MP3 sound files

downloaded and stored in an internal memory. The particular MP3 file played by

the chime is selected by a cellular phone communicatively coupled to the chime.

As another example, U.S. Patent Application Publication No. 2010/0225455 to

Claiborne teaches a door chime system that a user may customize by downloading

particular sound files from a connected cellular phone. Because these references

teach the claimed subject matter, the Examiner erred and the '107 Patent should

never have issued.

The evidence in this petition demonstrates that claims 12 and 18 of the '107

Patent are unpatentable under 35 U.S.C. §§ 102 and 103. Accordingly, Ring LLC

("Petitioner") respectfully requests that these claims be held unpatentable and cancelled.

II. MANDATORY NOTICES

A. Real Party-in-Interest

The real parties-in-interest are Ring LLC[1], Ring of Security Limited, Ring of Security B.V., Ring of Security Pty. Ltd., Ring of Security Asia Co., Ltd., Ring Protect Inc., Wireless Environment, LLC, Wireless Environment Asia, LLC, Wireless Environment Lighting Co., Ltd., Wireless Environment UK Ltd., Wireless Lighting Technologies, LLC, Amazon.com Services, Inc., and Amazon.com, Inc.

B. Related Matters

As of the filing date of this petition, the '107 Patent has been asserted in *SkyBell Technologies, Inc. v. Ring Inc.*, 8:18-cv-00014 (C. Cal. 2018).

C. Lead and Back-up Counsel and Service Information

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[1] In April 2018, Ring Inc. converted to a limited liability company and changed its name to Ring LLC.

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consents to electronic service via email.

III.   GROUNDS FOR STANDING

Petitioner certifies that the '107 Patent is eligible for *inter partes* review and

that Petitioner is not barred or estopped from requesting *inter partes* review

challenging the patent claims on the grounds identified in this petition. Petitioner

was served with a complaint asserting infringement of the '107 Patent not more

than one year before the filing of this Petition. Petitioner has not filed a civil

action challenging the validity of any claim of the '107 Patent.

IV.   THE '107 PATENT

A. Overview of the '107 Patent

The '107 Patent generally relates to doorbells. RING-1001, 2:59. In its

Background section, the '107 Patent recognizes that "[d]oorbells can enable a

person located outside of an entry point, such as a door, to alert a person inside of

an entry point that someone outside would like to talk to someone inside," where

pushing the doorbell button "causes a chime or other alerting sound to be emitted."

Id. at 3:1-9. Accordingly, the '107 Patent acknowledges the well-known purpose

of doorbells—to detect an indication of the presence of a visitor with a doorbell
button located outside a building and to emit a sound with a chime inside the
building, thereby alerting occupants of the visitor's presence.

The '107 Patent discloses various embodiments of a doorbell system that
includes "a doorbell, a chime, and a remote computing device" (RING-1001,
Abstract, 35:56-58), as illustrated in Figure 34:
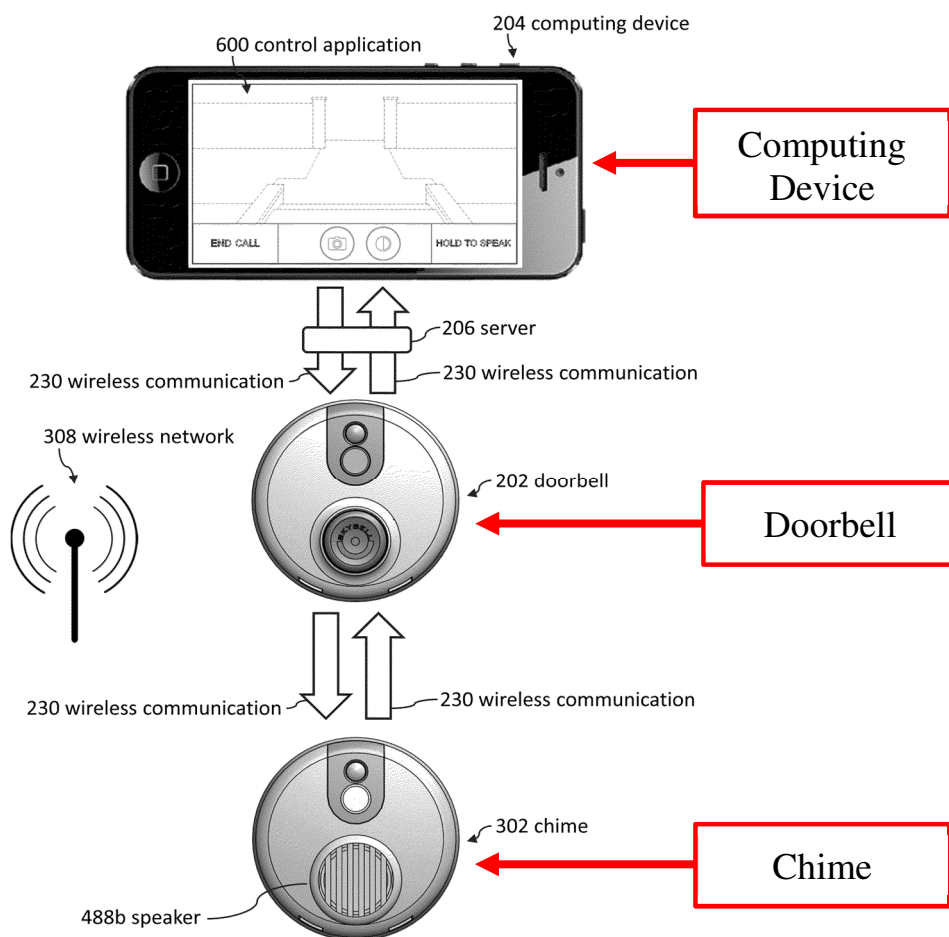
RING-1001, Fig. 34 (annotated); RING-1003, ¶ 36.

The '107 Patent explains that the remote computing device 204 can be "a
communication device with a user interface (e.g. smart phone, tablet, etc.), and the

like." RING-1001, 36:48-50. The '107 Patent further explains that chime 302 may include "a communication system" that is "configurable to communicatively couple the chime to the doorbell 202, the remote computing device 204, and/or any other communication device." *Id*. at 35:31-34. As shown in this Petition, the concept of coupling a chime to a phone or tablet was well known before the earliest alleged priority date of the '107 Patent.

The '107 Patent describes that its doorbell system is customizable in that "[s]everal embodiments include many different sounds that the chime 302 can emit when someone 'rings' the doorbell 202." RING-1001, 35:6-8. Specifically, "a user can use the remote computing device 204 to select a sound emitted by the chime." *Id*. at 35:3-4; *see also id*. at 35:60-63 ("A user can select an option (e.g., a song or a chime setting) on the remote computing device 204, then the system can send information regarding the option to and/or from the computing device 204."). For example, the remote computing device 204 may allow the user to select "a song or any type of audio file from a database, such as a music database," which is accessible through the remote computing device 204. *Id*. at 36:41-48.

The '107 Patent further describes that the remote computing device can "send the sound to the chime 302 via the doorbell 202 (and/or via a server 206 and a wireless network 308)." *Id*. at 35:41-43; *see also id*. at 38:52-55 ("The method may include selecting a sound by a remote computing device 204 (at step 1400)

and sending a data file 211, 213 comprising information to the chime 302 (at step 1402)."). In various embodiments, one or more data files including "information that can represent the sound ... can be sent by the remote computing device 204 to the server 206 [and] to the doorbell 202." *Id*. at 36:55-58.

Based on the information in the data file(s), the user-selected sound can be emitted "from a speaker 488b of the chime 302 ... in response to the doorbell 202 detecting an indication of a presence of a visitor." *Id*. at 37:12-16. The '107 Patent describes "an embodiment in which [the] doorbell 202 is connected to a building 300" and configured by the user to detect a visitor who presses a "doorbell button" near an entryway or door of the building "such that when the visitor ... presses the doorbell button ..., the user receives a notification regarding the visitor." *Id*. at 15:43-50, 3:4-9. "In this manner, when a visitor visits the building 300 [and presses the doorbell button], the doorbell system 200 can alert the user by playing any type of customized or prerecorded sound through the speaker 488 b of the chime 302." *Id*. at 37:16-19.

As illustrated in this Petition, a customizable doorbell chime system in which a sound file is played by a chime communicatively coupled to a phone in response to a visitor pushing a doorbell was well known to persons of ordinary skill in the art before the earliest alleged priority date of the '107 Patent.

B. Prosecution History

The '107 Patent issued on November 3, 2015 from U.S. Patent Application No. 14/724,702 filed May 28, 2015. The '107 Patent is purportedly a continuation-in-part of several related applications, the earliest of which was filed February 3, 2015. The '107 Patent also claims priority to several U.S. provisional applications, the earliest of which was filed June 23, 2014. Whether the '107 Patent is entitled to its earliest alleged priority date is irrelevant for the purpose of this petition, as the prior art relied upon herein pre-dates the earliest alleged priority date.

During an extremely brief prosecution (roughly five months from filing to issuance), the Examiner issued a notice of allowance without ever issuing an office action or rejecting the claims. RING-1002, pp. 24-32. The notice of allowance followed a series of examiner interviews and various amendments by Patent Owner. *Id*. at pp. 369-78, 355-64, 314-23. The only indication of the specific references discussed during the interviews is found in an Examiner-Initiated Interview Summary issued with the Notice of Allowance, in which the Examiner indicated that "Carter, Bartorelli, Moore and Steinetz" were discussed. *Id*. at p. 34.

In the statement of reasons for allowance, the Examiner indicated that the prior art taught every element of the claims except for the recitation of a "communication device comprising one of a phone and tablet device." RING-1002, pp. 30-31. The Examiner did not give a separate reason for allowance for independent claims 12 and 18—the claims challenged by this Petition.

As explained below, the Examiner erred by allowing the claims 12 and 18 of the '107 Patent merely because they recite a chime that is communicatively coupled to a phone or tablet—a concept well known before the earliest-alleged priority date.

C. Claim Construction

In *inter partes* review, claims "shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b); *see also Phillips v. AWH Corp*., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Further, the Board only construes the claims to the extent necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Systems, Inc.*, IPR2015-00633, Paper No. 11, 16 (PTAB August 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc*., 200 F.3d 795, 803 (Fed. Cir.1999)).[2]

1.   Order of the "*selecting*" and "*sending*" elements (Claim 12)

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[2] Petitioner does not concede that any term in the challenged claims meets the statutory requirements of 35 U.S.C. § 112, or that the challenged claims recite patentable subject matter under 35 U.S.C. § 101.

The preamble and the first two elements of claim 12 recite:

> 1. A method of using a doorbell system to emit a sound from a chime, the method comprising:
>
> *selecting* the sound by a communication device comprising one of a phone and tablet device;
>
> *sending* a data file comprising information to a doorbell that is communicatively coupled to the communication device, wherein the information represents the sound; …

As illustrated above, claim 12 recites a step of "selecting" and also recites a step of "sending." Although the "selecting" step visually appears before the "sending" step in claim 12, nothing in the claim language or specification requires that these steps be performed in the order written. It is well settled that "[u]nless the steps of a method actually recite an order, the steps are not ordinarily construed to require one." *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1343 (Fed. Cir. 2001). Claims without express temporal restrictions may nonetheless be construed to require an order, but only if they satisfy a two-part test, as set forth by the Federal Circuit. *See Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-70 (Fed. Cir., 2003). Specifically, the Court determines (i) whether "the claim language, as matter of logic or grammar, requires that the steps be performed in the order written," or (ii) whether "the specification directly or implicitly requires an order of steps." *Mformation Techs., Inc. v. Research In Motion Ltd.*, 764 F.3d 1392, 1398–99 (Fed. Cir. 2014).

Here, the plain language of the "selecting" and "sending" steps lacks any express indications of an order—for example, words requiring an order such as "in response to" or "next" are not used. Further, nothing about the grammar or logic of the claim language inherently *requires* that the "selecting" step be performed before the "sending" step. That is, the second-recited "sending" step does not rely upon any element first introduced in the "selecting" step, logically requiring it to be performed second. For example, the "sound" sent as a data file in the second "sending" step is not recited as the "selected sound." Rather, each of the two steps independently reference the "sound from a chime" introduced in the preamble. As such, there is nothing to logically prevent the "sound" from being selected after it is sent to the chime—as would be the case, for example, when there are multiple sounds stored on the chime as contemplated in the specification of the '107 patent. *See* RING-1001, 38:23-35, 35:6-9 (describing "sending a second data file comprising second information to the doorbell" and also that there "many different sounds that the chime 302 can emit when someone 'rings' the doorbell"). RING-1003, ¶ 46.

With respect to part two of the Federal Circuit's two-part test, there is nothing in the specification that directly or implicitly *requires* an order of the steps recited in claim 12. For example, in describing the embodiment most closely aligned with the language of claim 12—the method shown in Fig. 39—the

specification merely lists "selecting a sound" and "sending a data file" as two steps included in the method, but does not mandate that they be performed in a specific order. RING-1001, 38:52-55 ("The method may include selecting a sound by a remote computing device 204 (at step 1400) and sending a data file 211, 213 comprising information to the chime 302 (at step 1402)."). To the extent the graphical ordering of the elements in Fig. 39 implies an order of the "selecting" and "sending," the specification explicitly states that such ordering is not limiting:

> The methods, steps, and processes described herein are also not limited to any particular sequence, and the blocks, steps, or states relating thereto can be performed in other sequences that are appropriate. For example, described tasks or events may be performed in an order other than the order specifically disclosed.

RING-1001, 42:9-14.

Moreover, although some of the other "Chime Embodiments" in the specification describe selecting a chime sound and "then" sending the sound to the chime (*e.g.*, *id.* at 35:39-51), there is no corresponding statement that this order is important or required. *See Altiris*, 318 F.3d at 1370–71 (holding that it is improper to import a specific ordering into claims when the claim language is not so narrow, even if the only embodiment in the specification requires such ordering); *see also Samsung Elec. Co. Ltd., et. al. v. Home Semiconductor Corp.*, IPR2015-00459, Paper 32 at 20-21 (PTAB Apr. 14, 2016) (holding that even though the preferred

embodiment included language setting forth a specific order of steps (*e.g.*, "next" and "is then"), such ordering should not be imported into the claims because the claims did not recite such language).

Accordingly, because neither the claim language nor the specification requires that the "selecting" step must be performed before the "sending" step, a plain and ordinary reading of claim 12 encompasses performance of the elements in any order.

V.   RELIEF REQUESTED AND THE REASONS FOR THE REQUESTED RELIEF

Petitioner asks that the Board review the accompanying prior art and analysis, institute a trial for *inter partes* review of claims 12 and 18 of the '107 Patent, and cancel those claims as unpatentable.

As explained below and in the declaration of Petitioner's expert, Dr. Vijay Madisetti, the concepts described and claimed in the '107 Patent were not novel before its earliest alleged priority date. This petition explains where each element of claims 12 and 18 is found in the prior art and why the claims would have been obvious to or anticipated by a person of ordinary skill in the art ("POSITA") before the earliest claimed priority date of the '107 Patent. *See* RING-1003, ¶ 28 (noting the level of ordinary skill in the art as a bachelor's degree in Electrical Engineering, Computer Engineering, or Computer Science, or equivalent training,

as well as at least one year of technical experience in the field of embedded computing systems (including sensors and automation) and wireless networking).

VI.   IDENTIFICATION OF CHALLENGES

This petition challenges the patentability of claims 12 and 18 of the '107 Patent as follows:

Challenge	Claim	Ground
Challenge #1	12	35 U.S.C. § 103 over U.S. Patent Application Publication 2007/0008081 to **Tylicki** *et al.* ("Tylicki," RING-1005) in view of U.S. Patent Application Publication US 2010/0225455 to **Claiborne** *et al.* ("Claiborne," RING-1006)
Challenge #2	18	35 U.S.C. § 102 over **Tylicki**
Challenge #3	18	35 U.S.C. § 102 over **Claiborne**

Prior Art Status

The '107 Patent is governed by post-AIA sections 102 and 103 based on its earliest alleged priority date of June 23, 2014.

Tylicki is a U.S. Patent Application Publication that published on January 11, 2007, and is thus prior art at least under 35 U.S.C. § 102(a)(1).

Claiborne is a U.S. Patent Application Publication that published on September 9, 2010, and is thus prior art at least under 35 U.S.C. § 102(a)(1).

A. The Challenges Presented in This Petition are Neither Cumulative Nor Redundant

The challenges based on Tylicki and Claiborne are neither cumulative nor redundant as to the prosecution of the '107 Patent.

1. **Tylicki**

During the brief prosecution of the '107 Patent, Tylicki was listed by the Examiner in a "Notice of References Cited." RING-1002, p. 35. Tylicki, however, was never the basis for a rejection of the claims; nor is there evidence that it was ever discussed in an Examiner interview. Specifically, as detailed above, the claims were never formally rejected in an Office Action. Instead, prosecution was limited to a few examiner interviews and follow-up amendments by Patent Owner. It appears Tylicki was never considered during this informal process. Patent Owner's interview summaries are silent as to which references, if any, were discussed (*see id*. at pp. 322, 363, 377), and the sole Examiner-Initiated Interview Summary indicates only that "Carter, Bartorelli, Moore and Steinetz" were discussed. *Id*. at p. 34. Accordingly, the file history contains no evidence that the Examiner ever substantively evaluated Tylicki or attempted to apply it to the claims of the '107 Patent. *See Becton, Dickinson, & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017).

Moreover, notwithstanding Tylicki's inclusion in the "Notice of References Cited," it appears the Examiner failed to fully appreciate Tylicki's disclosure when issuing the Notice of Allowance. Specifically, as illustrated below, Tylicki teaches

the very subject matter deemed allowable—connecting "one of a phone and tablet device" to a doorbell system and using it to select a chime sound. RING-1002, pp. 30-31; *see also* RING-1005, ¶¶ [0018], [0019], [0025] (teaching a "cellular phone" connected to a chime used to select a chime tune). Had the Examiner fully appreciated the teaching in Tylicki of coupling a phone to a doorbell system and using it to select a chime sound, the claims of the '107 Patent would not have been allowed. Because they were, the Examiner erred. *See Becton,* IPR2017-01586, Paper 8 at 17-18.

The arguments, analysis, and evidence regarding Tylicki contained in this petition and accompanying expert declaration have never been before the Office and warrant consideration. Petitioner respectfully requests that the Board institute the Tylicki challenges so that the Office can fully consider its teaching in view of the claims of the '107 Patent. *See, e.g.*, *Power-Packer North America, Inc. v. G.W. Lisk Co., Inc*., IPR2017-02034, Paper 8 at 16-17 (PTAB Mar. 19, 2018) (declining to exercise discretion under § 325(d) because the prior art, while cited by the examiner in a first action allowance, was not used in a rejection and because it was "not clear that the examiner fully appreciated the teachings of those references as compared to the claims of the [] patent").

2. **Claiborne**

Claiborne was not cited or discussed during the prosecution of the '107

Patent. Further, it teaches the subject matter deemed allowable by the Examiner.

See RING-1002, pp. 30-31; RING-1006, ¶ [0027] (teaching connecting a "cellular telephone" to a chime to download audio files). Accordingly, neither Claiborne itself nor the arguments based upon Claiborne in this petition have been previously considered by the Office.

Petitioner therefore respectfully requests that the Board institute on both the Tylicki and Claiborne challenges, as the challenges are not redundant to the limited prosecution history.

VII. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenge #1: Claim 12 is invalid under 35 U.S.C § 103 over Tylicki in view of Claiborne

1. Summary of Tylicki

Like the '107 Patent, U.S. Patent Application Publication 2007/0008081 to Tylicki relates to customizable doorbell chimes. In particular, Tylicki describes an improved "door chime system capable of broadcasting sound derived from a digital sound file stored in a data memory responsive to a plurality of user inputs." RING-1005, ¶ [0002]. As illustrated in Fig. 1 reproduced below, Tylicki's doorbell system includes doorbell pushbuttons "capable of initiating door chime actuation," a data memory for storing digital sound files, an amplifier and speakers for "converting [] one of said digital sound files into sound," and a user interface, such

as a "cellular phone," for configuring the chime. *Id.* at Abstract, ¶¶ [0015], [0018], [0025], [0026]. The cellular phone may connect to the chime "via known wireless communications protocols, for example Bluetooth." *Id.* ¶ [0019].
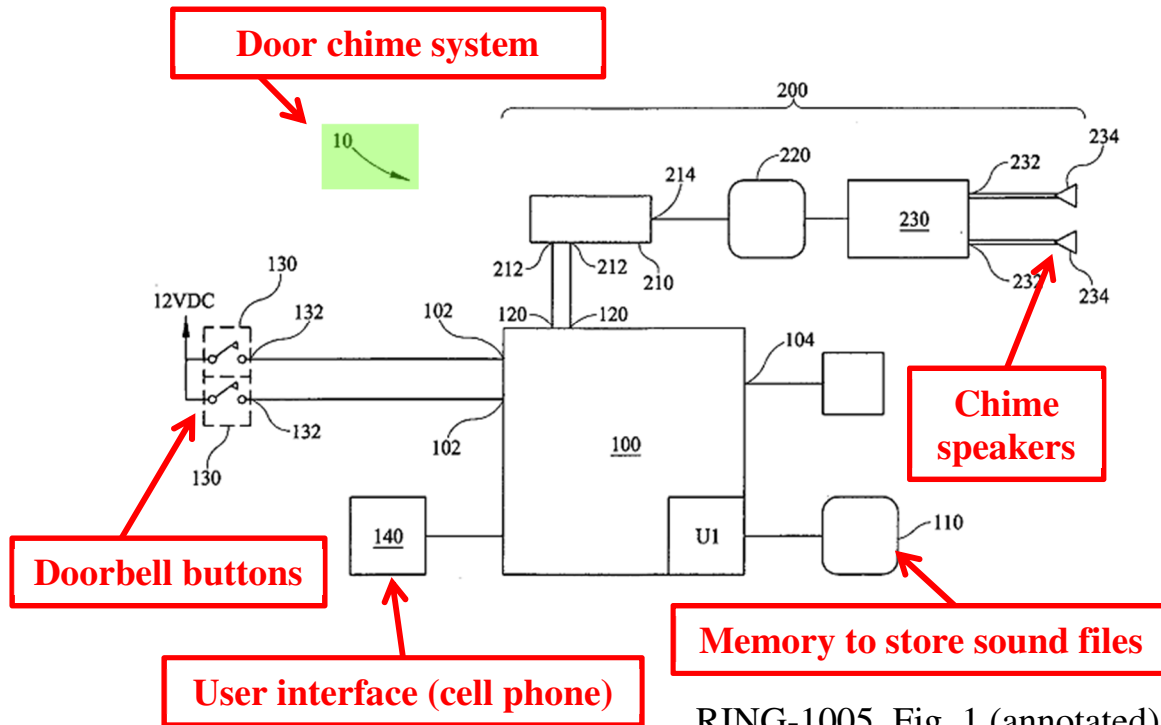
RING-1005, Fig. 1 (annotated); RING-1003, ¶ 52.

Tylicki explains that its system is customizable because it "permits a user to download a plurality of digital sound files, for example files saved utilizing the commonplace MP3 format, into an integral data memory and select a specified file to be broadcast when the door chime is actuated." RING-1005, ¶ [0009]. These digital sound files may be downloaded from a "plurality of peripheral devices." *Id.* ¶ [0017]. Further, Tylicki teaches that the user interface—for example, a cellular phone—"enables a user to select from a plurality of chime tunes stored in data

memory 110 to be played responsive to a doorbell pushbutton 130." *Id*. ¶ [0019].

Tylicki's system further "permit[s] an additional level of customization by allowing a user to select a plurality of different tunes to be broadcast upon actuation of a plurality of different door chime pushbuttons." RING-1005, ¶ [0009]. This feature "is particularly useful where the system is installed at a site having multiple locations for ingress and egress." *Id*.

2. Summary of Claiborne

U.S. Patent Application Publication 2010/0225455 to Claiborne is also directed to customizable door chime systems. In particular, Claiborne describes a "door chime system capable of reproducing polyphonic audio derived from a plurality of digital sound files stored in a data memory." RING-1006, ¶ [0003]. As illustrated in Fig. 1, Claiborne's door chime system includes a "doorbell pushbutton" or "actuator" to initiate door chime playback, a data memory for storing "sound files," and a speaker to reproduce the sound files. RING-1006, ¶¶ [0023], [0038]-[0040]. Claiborne teaches that its system also includes a communications port "to which a user can connect an audio data source to download sound representations form [sic] a device such as a personal computer, PDA, or cellular telephone." *Id*. ¶ [0027]. The communication port can wirelessly connect to the cellular phone via any open or proprietary system such as Bluetooth. *Id*.
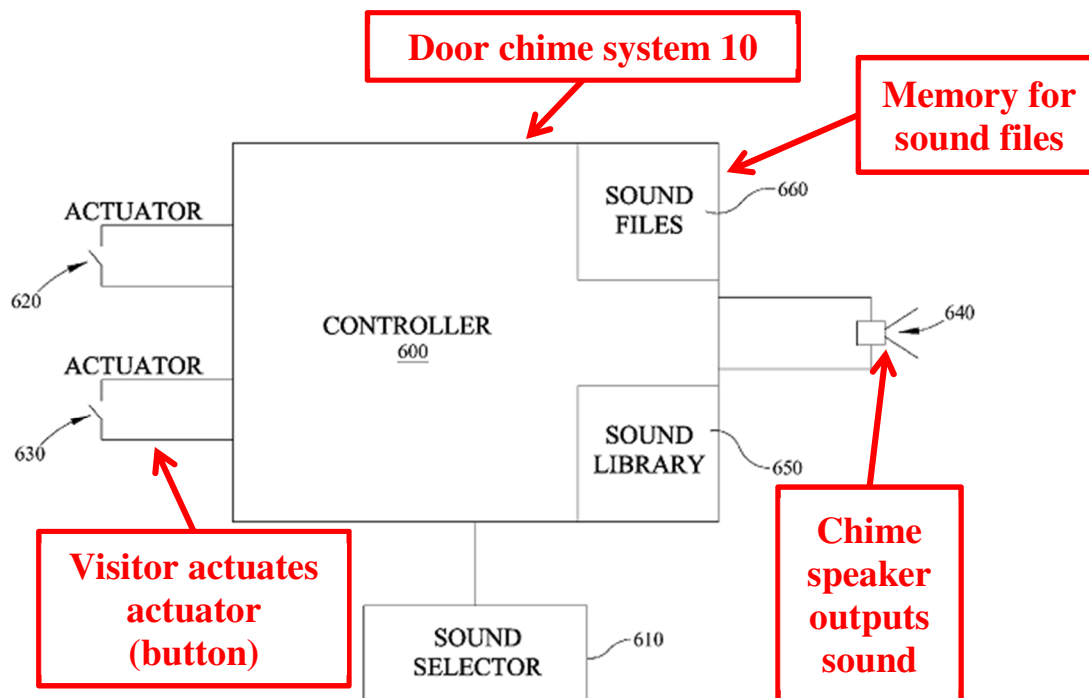
RING-1006, Fig. 1 (annotated); RING-1003, ¶ 55.

Claiborne explains that its download feature "provides a user the ability to quickly and efficiently customize the audio" played when the doorbell pushbutton is actuated. RING-1006, ¶ [0041]. For example, "different sound file sets may be downloaded to microcontroller U4 through port 104 to enable a user to customize and update the sounds played." *Id*.

3.   **Reasons to Combine Tylicki and Claiborne**

For the reasons set forth below, one of ordinary skill in the art would have been motivated to combine the teachings of Tylicki and Claiborne. RING-1003, ¶¶ 57-66. In particular, at the time of the '107 Patent, it would have been obvious,

beneficial, and predictable to incorporate Claiborne's teaching of downloading sound files from a cellular phone into Tylicki's door chime system. *Id*.

First, one of ordinary skill in the art when considering the teachings of Tylicki would have naturally considered the teachings of Claiborne. RING-1003, ¶ 58. Not only are both directed to customizable door chime systems, but the named inventor of the Tylicki application, Scott Blaise Tylicki, was also an inventor on the Claiborne application. Persons of ordinary skill in the art implementing Tylicki's door chime system before the '107 Patent would have had—and actually did have—the teachings of Claiborne available to them. One of these teachings— downloading sound files from a cellular phone—would have been of particular interest for the following reasons. RING-1003, ¶ 58.

As discussed above, Tylicki teaches that its chime system enables "communications with a plurality of peripheral devices for downloading MP3 files or other digital sound files." RNG-1005, ¶ [0017]. Tylicki does not specify which particular peripheral devices may be used to accomplish the task of downloading, but an artisan looking to implement Tylicki's door chime would simply have had to look to Claiborne for an identified and predictable solution. RING-1003, ¶ 59. Claiborne teaches that a cellular phone was one such peripheral device known in the art to enable the downloading of sound files to a chime. RING-1006, ¶ [0027] ("a user can connect an audio data source to download sound representations form

[sic] a device such as a … cellular telephone"); *see also* RING-1003, ¶¶ 59-60

(citing to other examples (*e.g.*, RING-1009) documenting the known practice of

downloading audio files from a smart phone to a door chime). Given the similarity

between Tylicki's and Claiborne's disclosures and the fact that the same inventor

contributed to both applications, it would have been obvious to incorporate

elements of Claiborne's door chime, such as cellular phone downloads, into

Tylicki's system. *Id.*; *see, e.g., Global Tel*Link Corp., v. Securus Tech., Inc.*,

IPR2014-01283, Paper 30 at 17 (PTAB Feb. 18, 2016) ("Given the similarities in

purposes of the systems, one of ordinary skill in the art would not need a high

degree of motivation to incorporate one aspect of one into the other….") (citing *In

re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992)).

Second, one of ordinary skill in the art would have been specifically

motivated to select a cellular phone as the peripheral device from which to

download MP3 files into Tylicki's chime. RING-1003, ¶ 62. In this regard, Tylicki

already teaches that a cellular phone is communicatively coupled to its chime.

RING-1005, ¶ [0018] ("A wide variety of user interface 140 devices may be

employed with the system of the present invention, including … cellular

telephones."). Design efficiency (and common sense) would lead an artisan to

utilize the same cellular phone as both the download interface and the user

interface—rather than employing separate devices. RING-1003, ¶ 62. Such a

solution would be easily implemented and generate predictable results because both Tylicki and Claiborne teach connecting the cellular phone to the chime via the same standardized wireless protocol, Bluetooth. *See* RING-1005, ¶ [0019], RING-1006, ¶ [0027]; *see also* RING-1003, ¶ 64. By 2014, the Bluetooth standard was a ubiquitous and well-known communication protocol utilized by millions of devices and, as such, a person of ordinary skill would have a reasonable expectation of success modifying Tylicki as needed to implement the combination. RING-1003, ¶¶ 64-65 (explaining the maturity and ubiquity of the Bluetooth protocol).

Accordingly, a person of ordinary skill in the art would have found it obvious to utilize a Bluetooth-connected cellular phone as the peripheral device from which to download sound files to Tylicki's doorbell chime because the combination amounts to choosing an identified and predictable solution with a reasonable expectation of success. RING-1003, ¶ 66.

4.   Detailed Analysis

The following describes how Tylicki in view of Claiborne renders obvious each and every element of claim 12 of the '107 Patent. A corresponding claim chart is contained in Dr. Madisetti's declaration. *See* RING-1003, pp. 37-64.

Claim 12

[12.0] ***"A method of using a doorbell system to emit a sound from a chime, the method comprising:"***

Tylicki describes a method of using a "door chime system capable of

broadcasting sound derived from a digital sound file." RING-1005, ¶ [0002]. In particular, Tylicki teaches that in its system a chime tune is "broadcast responsive to the actuation of a door bell or other chime actuation means." *Id*. ¶¶ [0008], [0025]. Tylicki's door chime system includes doorbell pushbuttons 130 and chime speakers 234 (*id*. at ¶¶ [0015], [0026]), as illustrated in Fig. 1:

RING-1005, Fig. 1 (annotated);
RING-1003, p. 39.
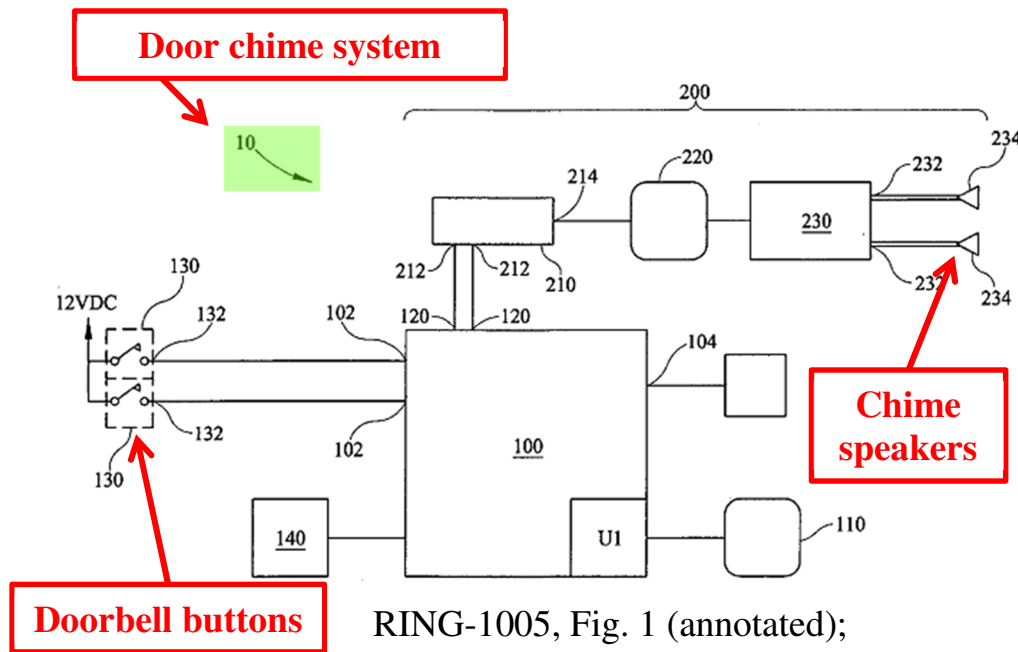
[12.1] *"selecting the sound by a communication device comprising one of a phone and tablet device"*

As discussed above, claim 12 does not place any temporal restrictions on the performance of the "selecting" step relative to the "sending" step. As such, prior art that teaches "selecting the sound by a communication device"—whether before or after "sending the data file"—discloses the claim element. Tylicki teaches a user selecting a chime sound by a cellular phone, and thus discloses this limitation.

In the unlikely event that the Board finds that claim 12 is limited to performing the

"selecting" and "sending" steps in the order written, Petitioner submits that the

"selecting" limitation is nevertheless rendered obvious by the combination of

Tylicki and Claiborne.

(i) Tylicki discloses the "selecting" limitation

First, Tylicki teaches that a "user interface" is operably connected to the

door chime system "to permit various features of the system 10 to be configured,"

where the user interface may be a "cellular telephone." RING-1005, ¶ [0018] ("A

wide variety of user interface 140 devices may be employed with the system of the

present invention, including … cellular telephones").

Second, Tylicki teaches that "user interface 140 enables a user to *select from*

a plurality of chime tunes stored in data memory 110 to be played responsive to a

doorbell pushbutton." RING-1005, ¶ [0019] (emphasis added); *see also id.* ¶

[0025] ("A user may select, via the operator interface 140, a tune stored in data

memory 110 to be played back responsive to the depression of a specific

pushbutton."). Accordingly, in Tylicki's system, when a cellular phone is utilized

as the user interface, a user selects which chime tune to be played using a cellular

phone. RING-1003, p. 41.

Thus, a user selecting with a cellular phone which chime tune is played

when a doorbell button is pressed, as taught by Tylicki, discloses "selecting the

sound by a communication device comprising one of a phone and tablet device."

See RING-1003, pp. 39-42.

(ii) Tylicki in view of Claiborne discloses the "selecting" limitation

Tylicki also teaches that its chime system "permits a user to download a plurality of digital sound files" into an integral memory from a "plurality of peripheral devices." RING-1005, ¶¶ [0009], [0017]. As discussed above in section VII(A)(3), it would have been obvious to choose a cellular phone as the peripheral device from which to download sound files, in view of the teachings of Claiborne. RING-1003, pp. 42-47. To the extent the Board determines that claim 12 requires that the "selecting" step must be performed before the "sending" step, it would have been obvious to a person of ordinary skill in the art that when a user connects a cellular phone and downloads the sounds played by Tylicki's chime, the user first *selects* which sounds will be downloaded. *Id*.

For example, when Claiborne describes the process of a user downloading from a cellular phone the chime sounds that will be played by its chime, it explains that the downloading "enable[s] a user to *customize* and update the sounds played through system 10." RING-1006, ¶ [0041] (emphasis added); *see also id*. (explaining that the downloading "feature of the present invention provides a user the ability to quickly and efficiently customize the audio of system 10 with minimal expertise and effort required"). As explained by Dr. Madisetti, when a

user customizes which sounds are downloaded from the cellular phone and played

by a chime system, the user carries out the downloading process according to his or

her individual preferences. RING-1003, pp. 44-45 (citing dictionary definitions of

"customize"). An individual's preferences are expressed through selection. *Id*.

That is, in order to "customize and update the sounds played through system," as

taught by Claiborne, the user first selects which sound files to download using the

cellular phone, and then downloads those sound files. *Id*.

Beyond common sense, the idea that a user selects which sound files to

download before downloading would have been obvious because that's precisely

how commercially-available digital chimes worked at the time. RING-1003, pp.

45-47. For example, in 2013, NuTone sold an MP3-based door chime, the

LA600WH, that was customizable based on the ability of the user to transmit MP3

files to the chime: "Featuring the most advanced customizable features on the

market, the LA600WH offers MP3 upload capabilities. Now, you can program any

song or sound to announce that someone is at the door." RING-1014, p. 1, RING-

1018, p. 1. According to the LA600WH installation guide, in order to customize

the door chime via upload, a user first connected a Windows computer to the

chime and then selected specific MP3 files on the computer by copy and pasting

the files into a folder associated with the door chime, as illustrated below:

UPLOAD MP3 TUNES

1. Insert a USB Mini cable end into the doorbell mechanism USB jack (C). (Figure 1)
2. Insert the remaining larger USB cable end into a USB port on your computer.
3. On your **WINDOWS** computer,
   - Select "Start" in the bottom corner of your Desktop.
   - Select "My Computer"
   - Select the new device detected. (The drive "D:", "E:", etc. will vary from computer to computer).
   - Select the device.
   - You will now see a window that contains several mp3 files. These are the tunes that are pre-installed on your doorbell mechanism.
   - Search your computer for other mp3 songs that you wish to play on your doorbell mechanism when activated. Note: Files must be in mp3 format.
   - Once you have located those files, simply "COPY" the file and "PASTE" it into the folder that contains the pre-installed doorbell files.
   - Confirm that the transfered files are complete.

RING-1013, p. 1 (highlighting added); RING-1003, p. 46.

And, as discussed by Dr. Madisetti in his declaration, other door chimes commercially available in 2013 also allowed a user to customize the tones played by selecting and downloading specific audio files stored on a computer—including a door chime made by the assignee of the Claiborne application. RING-1003, pp. 46-47 (citing RING-1017, p. 2 (instructing the user to "Drag the desired tune to the door chime drive" when transferring tunes to the chime)). As such, a person of ordinary skill in the art would have found it obvious and predictable that when a user of a customizable door chime system (such as Tylicki's) downloads sound

files from a cellular phone to customize the sounds played by the chime, the user

first selects the sound files using the cellular phone, and then downloads them onto

the chime. RING-1003, pp. 46-47.

As such, the combination of Tylicki and Claiborne renders obvious the

recited "selecting the sound by a communication device" no matter when the

selecting is performed vis-à-vis the downloading. RING-1003, p. 47. Tylicki itself

teaches selecting by a cellular phone user interface a sound to be played after the

sounds have been downloaded into the chime memory (*i.e.*, "sending" and then

"selecting"). *Id*. The combination of Tylicki and Claiborne renders obvious a user

selecting and downloading by a cellular phone the sounds to be played by Tylicki's

chime (*i.e.*, "selecting" and then "sending"). *Id*. Accordingly, a user of Tylicki's

door chime system in which a cellular phone is both the user interface and

download interface would have the predictable and obvious option of selecting the

chime sounds to be played before, during, or after the chime sounds are

downloaded. *Id*.

Thus, a user downloading MP3 sound files from a peripheral device to be

played on the door chime and selecting with a cellular phone which MP3 will be

played, as taught by Tylicki, in view of Claiborne's teaching of a user customizing

which sounds are played by a door chime by downloading specific sound files with

a cellular telephone to the doorbell system renders obvious "selecting the sound by

a communication device comprising one of a phone and tablet device." RING-1003, pp. 39-47.

[12.2] *"sending a data file comprising information to the chime that is communicatively coupled to the communication device"*

Tylicki in view of Claiborne renders obvious this limitation. First, Tylicki teaches that "[t]he present invention permits a user to download a plurality of digital sound files, for example files saved utilizing the commonplace MP3 format, into an integral data memory" of the door chime system. RING-1005, ¶¶ [0009], [0016]. Tylicki explains that a communications port permits "communications with a plurality of peripheral devices for downloading MP3 files or other digital sound files incorporating alternative digital formats for eventual playback." *Id*. ¶ [0017].

Second, Tylicki teaches that the door chime system is communicatively coupled to a cellular phone via "a wireless communication card or device to enable communication with a remote user interface 140 via known wireless communications protocols." RING-1005, ¶ [0019].
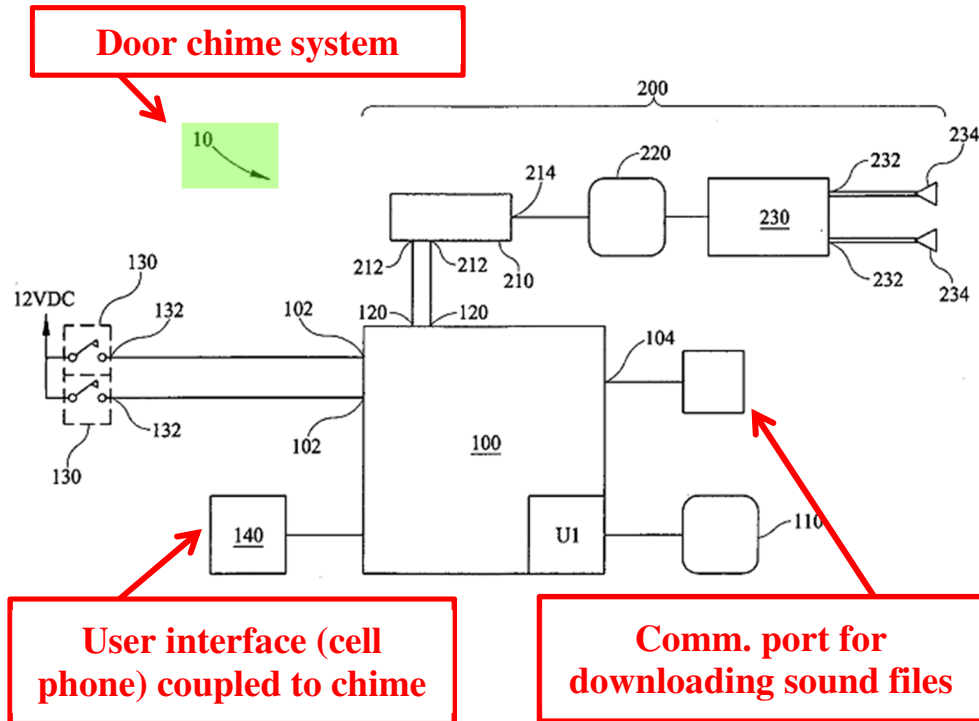
RING-1005, Fig. 1 (annotated); RING-1003, p. 49.

To the extent Tylicki does not explicitly teach downloading the sound files from the cellular phone coupled to the door chime, a person of ordinary skill in the art would have found it obvious because (i) the cellular phone is already communicatively coupled to the door chime and (ii) it was well known prior to the '107 Patent to download sound files to a door chime from a cellular phone. RING-1003, p. 49. For example, Claiborne teaches that its chime includes a communications port so "a user can connect an audio data source to download sound representations form [sic] a device such as a personal computer, PDA, or *cellular telephone.*" RING-1006, ¶ [0027] (emphasis added); *see also id.* ¶ [0041] ("different sound file sets may be downloaded to microcontroller U4 through port

104 to enable a user to customize and update the sounds played through system 10"). Like Tylicki, Claiborne teaches that the cellular phone may be wirelessly coupled to the communications port via "Wifi (802.11), IrDA, Zigbee, Bluetooth, WiMax or any other open or proprietary system to allow the transfer from the audio data source to the communication port." RING-1006, ¶ [0027].

RING-1006, Fig. 3 (annotated); RING-1003, p. 51.
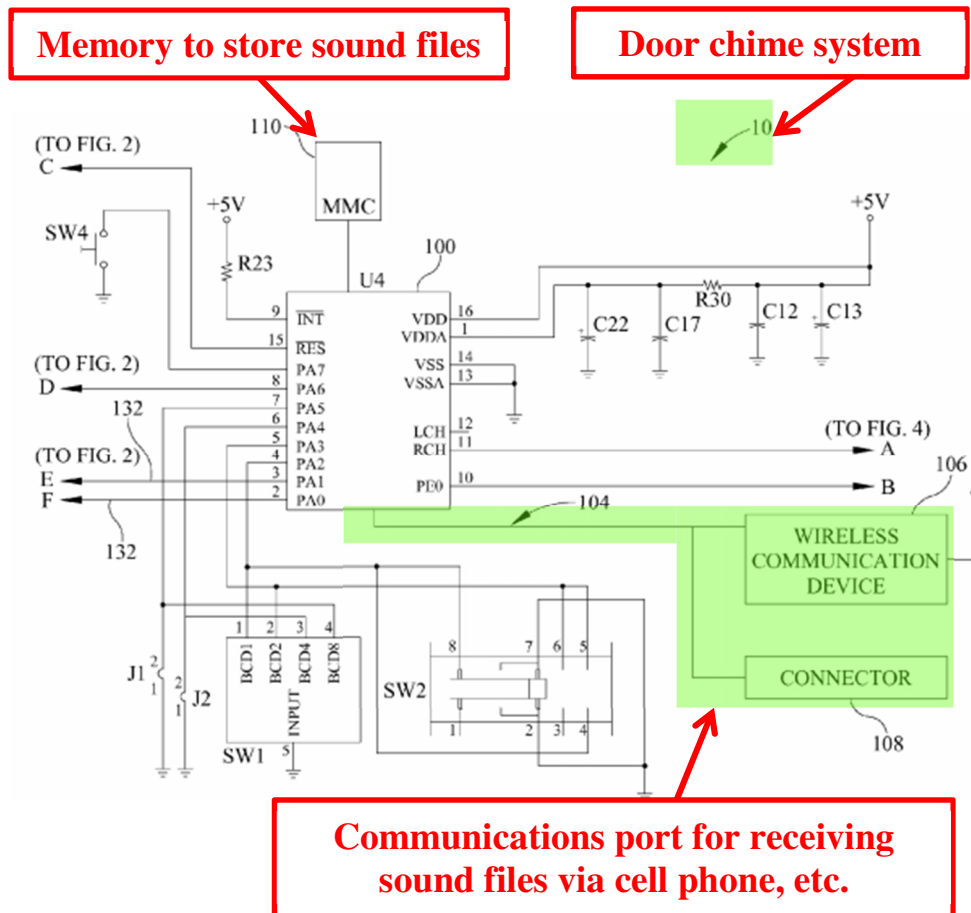
For the reasons discussed above, one of ordinary skill in the art would have found it obvious to download sound files to Tylicki's chime with a cellular phone, such as the cellular phone already connected to the chime. RING-1003, p. 49.

Thus, downloading a digital sound file comprising sound information to the chime system that is communicatively coupled to a cellular telephone, as taught by Tylicki, in view of Claiborne's teaching of downloading a sound file to a chime from a communicatively coupled cellular phone, renders obvious "sending a data file comprising information to the chime that is communicatively coupled to the communication device." *See* RING-1003, pp. 47-51.

[12.3] ***"wherein the chime is located within an inside portion of a building, and"***

Tylicki renders obvious this limitation. Tylicki teaches that its door chime system may be "installed at a site having multiple locations for ingress and egress, for example a business or a large residential dwelling." RING-1005, ¶ [0009]. In such an installation, different chime tunes may be associated with different doorbell pushbuttons and played over the chime speakers, "thereby permitting a user to know which pushbutton has been depressed." *Id*. ¶¶ [0009], [0026]. A person of ordinary skill in the art would have found it obvious that the chime speakers of Tylicki's door chime system may be located inside the business or large residential dwelling. RING-1003, p. 53. For example, the well-known purpose of a chime is to alert occupants of a building to the presence of a visitor at the door, as explained by Tylicki:

> ***Door chime systems utilizing a pushbutton to initiate the ringing of a chime or reproduction of a sound are well known***. Many prior art systems employ a pushbutton or similar actuation device

> mounted proximate a door to activate an electrical circuit that converts electrical energy into mechanical energy ***to ring a chime or buzzer, or series thereof thereby producing an audible signal that someone is at the door.***

RING-1005, ¶ [0004] (emphasis added). Moreover, the background section of the '107 Patent itself acknowledges that it was previously well known to persons of ordinary skill in the art that "[d]oorbells can enable a person located outside of an entry point, such as a door, to alert a person inside of an entry point that someone outside would like to talk to someone inside," where pushing a button included with the doorbell "causes a chime or other alerting sound to be emitted." RING-1001, 3:1-9. Accordingly, in light of the above, it would have been obvious to a person of ordinary skill in the art that Tylicki's chime speaker may be mounted inside the business or large residential dwelling so as to alert various dwelling occupants to the presence of a visitor outside. RING-1003, pp. 52-53 (citing to doorbell patents from the 1920s explaining the purpose of doorbells); *see also* RING-1006, Claim 1.

Thus, the door chime system with a chime speaker installed in a building with multiple ingress locations that is configured to provide different sounds to a user based on which pushbutton was pushed, as taught by Tylicki, renders obvious "wherein the chime is located within an inside portion of a building." *See* RING-1003, pp. 51-54.

[12.4] *"wherein the information represents the sound"*

Tylicki discloses this limitation because it teaches that the sound files downloaded into the memory of the chime system represent the sound that is broadcast by the chime speaker:

> The present invention **permits a user to download a plurality of digital sound files**, for example files saved utilizing the commonplace MP3 format, into an integral data memory and select **a specified file to be broadcast when the door chime is actuated**.

RING-1005, ¶ [0009] (emphasis added); *see also id*. ¶ [0017] (teaching "downloading MP3 files or other digital sound files incorporating alternative digital formats for eventual playback.").

Thus, the downloaded sound files that represent the sound to be broadcast by the chime speaker, as taught by Tylicki, disclose "wherein the information represents the sound." *See* RING-1003, p. 54.

[12.5] *"detecting an indication of a presence of a visitor with a doorbell that is communicatively coupled to the chime"*

Tylicki discloses this limitation because it teaches that the pushbutton in its system is "responsive to a positive act from a visitor" such that "when pushbutton 130 is depressed, output 132 provides an electrical signal to input 102 of microcontroller 100 to imitate [sic: initiate] door chime playback." RING-1005, ¶¶ [0015], [0025]. Tylicki explains that its pushbuttons are communicatively coupled

to the chime system via electrical signals that are generated when the pushbuttons are depressed. *Id*. ¶ [0025] ("Where multiple pushbuttons 130 are installed, a plurality of outputs 132 are electrically connected to a plurality of microcontroller inputs 102 so that the system 10 can distinguish which doorbell pushbutton 130 has been depressed, based upon the signals provided at inputs 102.").
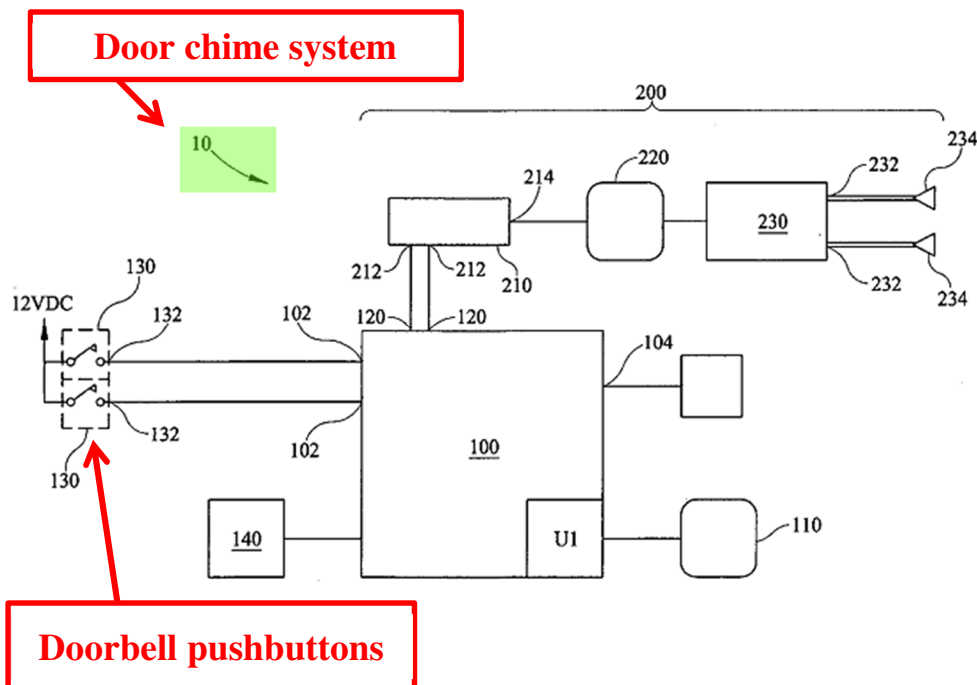
RING-1005, Fig. 1 (annotated); RING-1003, p. 56.

Thus, detecting when a visitor actuates a doorbell pushbutton that is electrically coupled to the doorbell chime system, as taught by Tylicki, discloses "detecting an indication of a presence of a visitor with a doorbell that is communicatively coupled to the chime." *See* RING-1003, pp. 54-56.

[12.6] ***"wherein the doorbell is located along an outside portion of the building, and"***

Tylicki renders obvious this limitation. As discussed above in association

− 35 −

with [12.3], Tylicki teaches that its doorbell chime system with multiple doorbell pushbuttons can be installed at a "business or a large residential dwelling" with multiple entrances, and that each pushbutton can be associated with a different tune such that a user can differentiate which pushbutton was actuated by a "positive act from a visitor." RING-1005, ¶¶ [0009], [0015], [0025]. A person of ordinary skill in the art would have found it obvious that Tylicki's doorbell pushbuttons are located on outside portions of the business or large residential dwelling—as the well-known purpose of a doorbell is to provide visitors a way to alert occupants to their presence outside. RING-1003, p. 58. For example, in its background section, Tylicki explains that well-known doorbell systems include a "pushbutton or similar actuation device mounted proximate a door to activate an electrical circuit," which results in "an audible signal that someone is at the door." RING-1005, ¶ [0004]. Further, the background section of the '107 Patent itself acknowledges that it was well known to persons of ordinary skill in the art to have a doorbell outside of an entry point, such as a front door, to enable visitors to alert someone inside to their presence:

> Doorbells can enable a person *located outside* of an entry point, such as a door, to alert a person inside of an entry point that someone outside would like to talk to someone inside. Doorbells sometimes include *a button located near a door, such as a front door,* side door, or back door of a home, office, dwelling,

warehouse, building, or structure.

RING-1001, 3:1-6 (emphasis added). Accordingly, in light of the above, it would

have been obvious to a person of ordinary skill in the art that Tylicki's doorbell

pushbuttons may be mounted outside of the entrances of the business or large

residential dwelling so a visitor can alert the dwelling occupant to their presence.

RING-1003, pp. 58-59 (citing to doorbell patents from the 1920s explaining that

doorbell buttons are mounted outside where it may be readily actuated by a

visitor); *see also* RING-1006, Claim 1.

Thus, the multiple doorbell pushbuttons with different tones installed at a

business or residential dwelling with different entrances, such that user can

determine which doorbell was actuated by a visitor, as taught by Tylicki, renders

obvious "wherein the doorbell is located along an outside portion of the building."

See RING-1003, pp. 57-60.

[12.7] ***"wherein the doorbell comprises a button configurable to detect a button press to indicate the presence of the visitor; and"***

Tylicki discloses this limitation because it teaches that its door chime system

includes a "doorbell pushbutton" that is "responsive to a positive act from a

visitor" such that "when pushbutton 130 is depressed, output 132 provides an

electrical signal to input 102 of microcontroller 100 to imitate [sic] door chime

playback." RING-1005, ¶¶ [0015], [0025]; *see also id*. ¶ [0025] ("Where multiple

pushbuttons 130 are installed, a plurality of outputs 132 are electrically connected

to a plurality of microcontroller inputs 102 so that the system 10 can distinguish which doorbell pushbutton 130 has been depressed, based upon the signals provided at inputs 102."). Tylicki further explains that its system can include multiple pushbuttons, each with its own associated chime tune, "thereby permitting a user to know which pushbutton has been depressed by the customized ring sound being broadcast." *Id*. ¶ [0009].

Thus, the doorbell pushbutton that, when pressed, sends an electrical signal to initiate chime playback to indicate the presence of a visitor, as taught by Tylicki, discloses "wherein the doorbell comprises a button configurable to detect a button press to indicate the presence of the visitor." *See* RING-1003, pp. 60-62.

[12.8] ***"emitting the sound from a speaker of the chime in response to detecting the indication of the presence of the visitor."***

Tylicki discloses this limitation because it teaches that "when pushbutton 130 is depressed, output 132 provides an electrical signal to input 102 of microcontroller 100 to imitate [sic: initiate] door chime playback." RING-1005, ¶ [0025]. With respect to chime playback, Tylicki explains that its system utilizes "a plurality of conventional speakers 234 for playback." *Id*. ¶ [0024]. For example, when a particular pushbutton is depressed, the chime system "accesses in data memory 110 the chime tune corresponding to the input provided, then outputs a digital data stream to D/A converter 210, which thence provides analog output 214 to power amp 230, ***thereby broadcasting the selected chime tune over speakers***

***234*.**" *Id.* ¶ [0026] (emphasis added); *see also id.* ¶ [0008] (teaching that "a

specified digital sound file, or a portion thereof, [will] be broadcast responsive to

the actuation of a door bell or other chime actuation means").
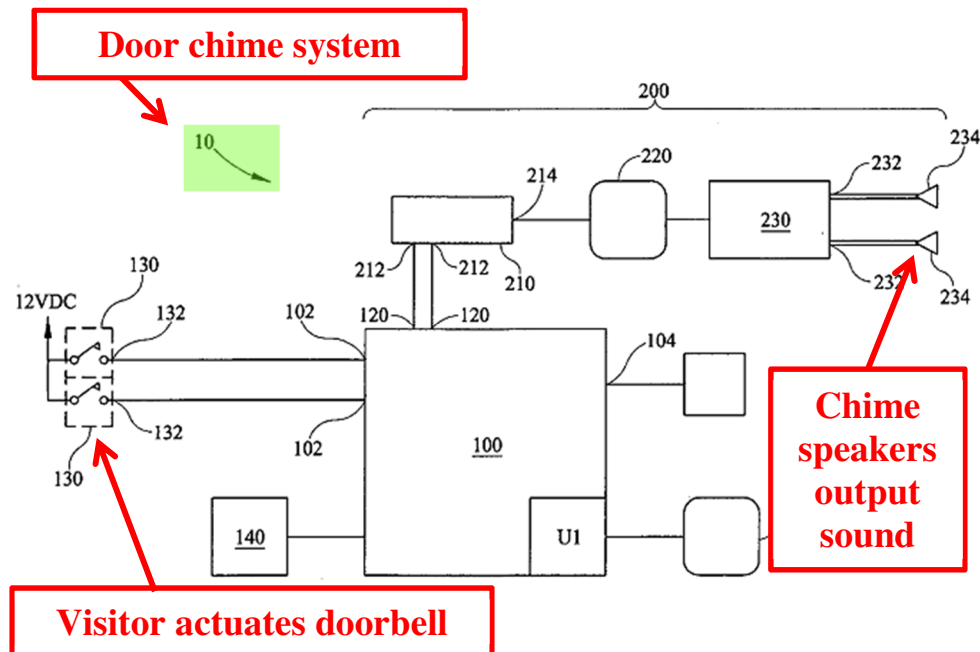
RING-1005, Fig. 1 (annotated);
RING-1003, p. 64.

Thus, broadcasting sounds from a speaker in response to a visitor pressing

the doorbell pushbutton, as taught by Tylicki, discloses "emitting the sound from a

speaker of the chime in response to detecting the indication of the presence of the

visitor." *See* RING-1003, pp. 62-64.

B. Challenge #2: Claim 18 is invalid under 35 U.S.C § 102 over Tylicki
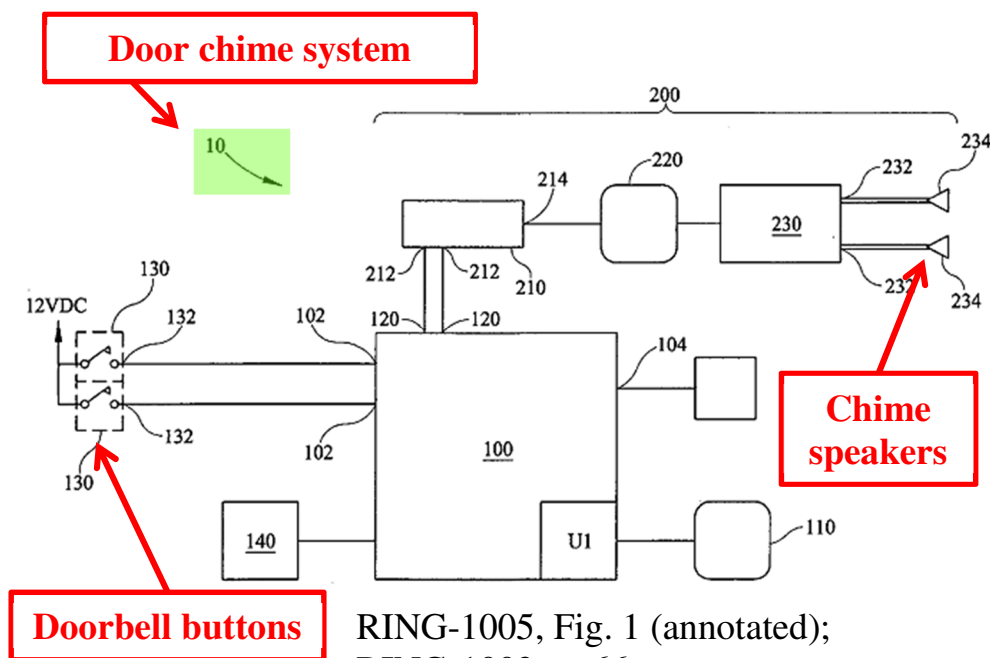
1. Detailed Analysis

The following describes how Tylicki teaches each and every element of

claim 18 of the '107 Patent. A corresponding claim chart is contained in Dr.

Madisetti's declaration. *See* RING-1003, pp. 65-76.

Claim 18

[18.0] *"A doorbell system, comprising"*

Tylicki discloses this limitation because it teaches a "door chime system capable of broadcasting sound derived from a digital sound file." RING-1005, ¶ [0002]; *see also* RING-1003, pp. 65-66. In particular, Tylicki teaches that in its system a chime tune is "broadcast responsive to the actuation of a door bell or other chime actuation means." RING-1005, ¶¶ [0008], [0025]. Tylicki's door chime system includes doorbell pushbuttons 130 and chime speakers 234 (*id*. at ¶¶ [0015], [0026]), as illustrated in Fig. 1:

RING-1005, Fig. 1 (annotated);
RING-1003, p. 66.

[18.1] *"a doorbell comprising a button configurable to detect a button press to indicate a presence of a visitor"*

Tylicki discloses this limitation because it teaches that its door chime system includes a "doorbell pushbutton" that is "responsive to a positive act from a visitor" such that "when pushbutton 130 is depressed, output 132 provides an electrical signal to input 102 of microcontroller 100 to imitate [sic] door chime playback." RING-1005, ¶¶ [0015], [0025]; *see also id*. ¶ [0025] ("Where multiple pushbuttons 130 are installed, a plurality of outputs 132 are electrically connected to a plurality of microcontroller inputs 102 so that the system 10 can distinguish which doorbell pushbutton 130 has been depressed, based upon the signals provided at inputs 102."). Tylicki further explains that its system can include multiple pushbuttons, each with its own associated chime tune, "thereby permitting a user to know which pushbutton has been depressed by the customized ring sound being broadcast." *Id*. ¶ [0009].

Thus, the doorbell pushbutton that, when pressed by a visitor, sends an electrical signal to initiate chime playback to indicate the presence of the visitor, as taught by Tylicki, discloses "a doorbell comprising a button configurable to detect a button press to indicate a presence of a visitor." *See* RING-1003, pp. 66-68.

[18.2] *"a chime communicatively coupled to the doorbell"*

Tylicki discloses this limitation because it teaches that its door chime system includes an "electronic door chime" with an "amplifier stage for converting … digital sound files into sound" and "conventional speakers 234 for playback."

RING-1005, ¶¶ [0008], Abstract, ¶ [0024]. Tylicki further teaches that the components of the electronic chime are communicatively coupled to the doorbell pushbuttons via a microcontroller, as illustrated in Fig. 1 annotated below. *Id.* at Abstract, ¶ [0025] ("when pushbutton 130 is depressed, output 132 provides an electrical signal to input 102 of microcontroller 100 to imitate door chime playback"), ¶ [0024] ("The microcontroller 100 outputs 120 are electrically connected to an amplifier stage 200.").
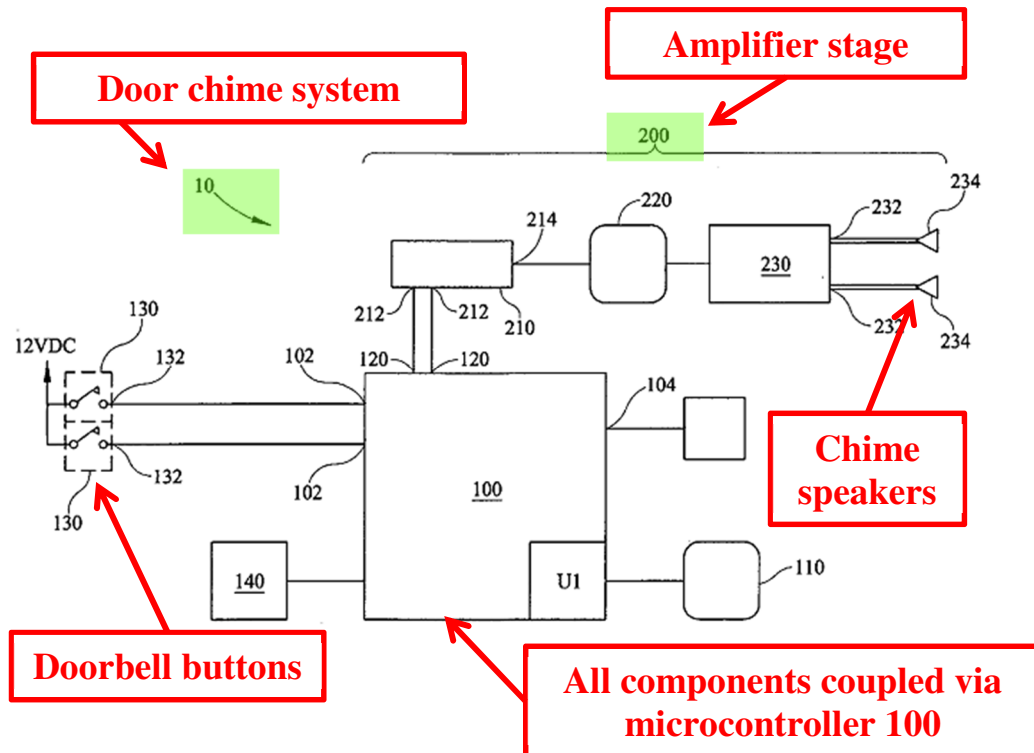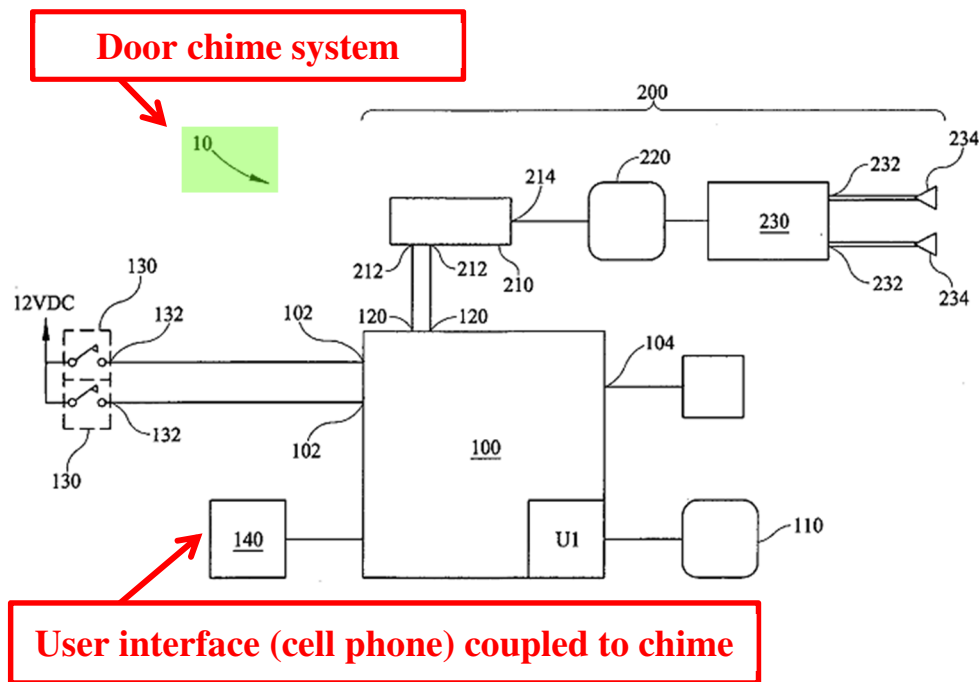

RING-1005, Fig. 1 (annotated); RING-1003, p. 70.

Thus, the electronic door chime with an amplifier and speakers electrically coupled to the doorbell pushbutton, as taught by Tylicki, discloses "a chime communicatively coupled to the doorbell." *See* RING-1003, pp. 68-70.

[18.3] *"a communication device communicatively coupled to at least one of the doorbell and the chime, wherein the communication device comprises one of a phone and tablet device"*

Tylicki discloses this limitation because it teaches that a user interface, such as a "cellular phone," may be communicatively coupled to the door chime system "to permit various features of the system 10 to be configured." RING-1005, ¶ [0018] ("A wide variety of user interface 140 devices may be employed with the system of the present invention, including … cellular telephones"). Tylicki explains that the user interface (*e.g.*, cellular phone) is communicatively coupled to the door chime system with "a wireless communication card or device to enable communication … via known wireless communications protocols, for example Bluetooth®." RING-1005, ¶ [0019].

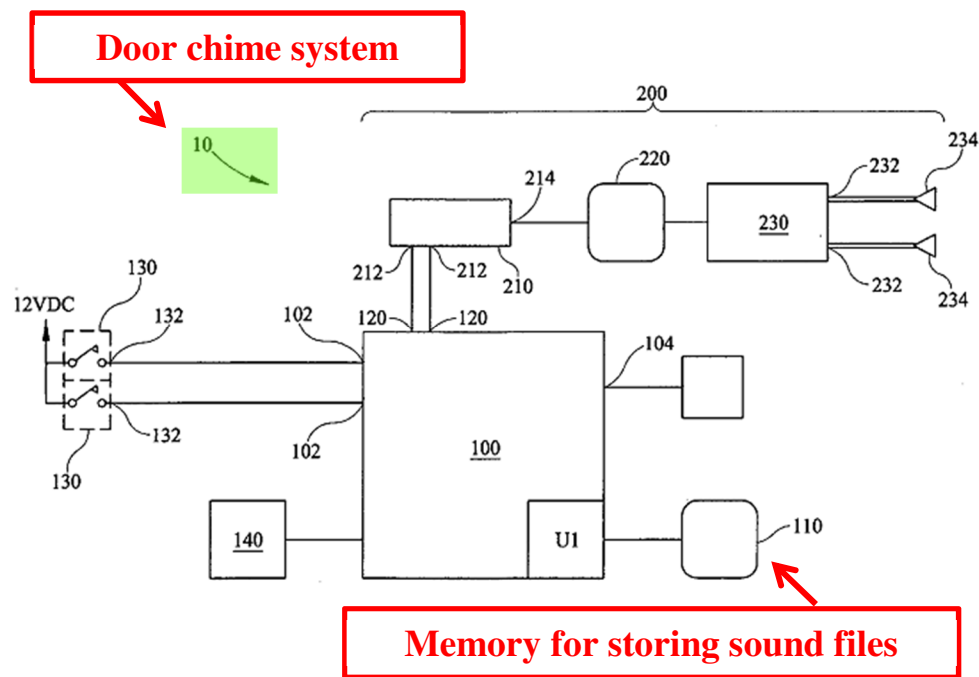RING-1005, Fig. 1 (annotated); RING-1003, p. 72.

Thus, the cellular phone communicatively coupled to the door chime system via a known communication protocol, as taught by Tylicki, discloses "a communication device communicatively coupled to at least one of the doorbell and the chime, wherein the communication device comprises one of a phone and tablet device." *See* RING-1003, pp. 70-72.

[18.4] ***"a sound emitted by a speaker of the chime in response to the doorbell detecting an indication of a presence of a visitor"***

Tylicki discloses this limitation because it teaches that "when pushbutton 130 is depressed, output 132 provides an electrical signal to input 102 of microcontroller 100 to imitate [sic] door chime playback." RING-1005, ¶ [0025]. With respect to chime playback, Tylicki explains that its system utilizes "a plurality of conventional speakers 234 for playback." *Id*. ¶ [0024]. For example, when a particular pushbutton is depressed, the chime system "accesses in data memory 110 the chime tune corresponding to the input provided, then outputs a digital data stream to D/A converter 210, which thence provides analog output 214 to power amp 230, thereby broadcasting the selected chime tune over speakers 234." *Id*. ¶ [0026]; *see also id*. ¶ [0008] (teaching that "a specified digital sound file, or a portion thereof, [will] be broadcast responsive to the actuation of a door bell or other chime actuation means").

RING-1005, Fig. 1 (annotated); RING-1003, p. 74.

Thus, broadcasting sounds from a speaker in response to a visitor pressing the doorbell pushbutton, as taught by Tylicki, discloses "a sound emitted by a speaker of the chime in response to the doorbell detecting an indication of a presence of a visitor." *See* RING-1003, pp. 72-74.

[18.5] ***"wherein the chime comprises a data file having information that represents the sound."***

Tylicki discloses this limitation because it teaches that the door chime system includes memory to store digital sound files which represent the sounds broadcast when a visitor presses the doorbell pushbutton:

> The present invention permits a user to download a plurality of digital sound files, for example files saved utilizing the commonplace MP3 format, into an integral data memory and

select a specified file to be broadcast when the door chime is actuated.

RING-1005, ¶ [0009]; *see also id*. ¶ [0002] (teaching that the door chime system is "capable of broadcasting sound derived from a digital sound file stored in a data memory responsive to a plurality of user inputs."). Tylicki explains that the microcontroller in its system "includes an associated data memory 110 and digital output 120 (or a plurality thereof) for supplying digital sound files to a sound reproduction system." *Id*. ¶ [0016].

RING-1005, Fig. 1 (annotated); RING-1003, p. 76.

Thus, the door chime system storing in its memory sound files representing the sounds that are broadcast when a visitor presses the doorbell pushbuttons, as

taught by Tylicki, discloses "wherein the chime comprises a data file having information that represents the sound." *See* RING-1003, pp. 74-76.

C. <u>Challenge #3</u>: Claim 18 is invalid under 35 U.S.C § 102 over Claiborne

#### 1. <u>Detailed Analysis</u>

The following describes how Claiborne teaches each and every element of claim 18 of the '107 Patent. A corresponding claim chart is contained in Dr. Madisetti's declaration. *See* RING-1003, pp. 77-89.

<u>Claim 18</u>

[18.0] ***"A doorbell system, comprising"***

Claiborne discloses this limitation because it teaches a "doorbell system … for providing polyphonic audio responsive to the actuation of a doorbell pushbutton." RING-1006, ¶¶ [0011], [0038]; *see also* RING-1003, pp. 77-78. Claiborne's doorbell system (also referred to as a "door chime system") includes pushbuttons (actuators) and chime speakers (RING-1006, ¶ [0023]), as illustrated in Fig. 1:
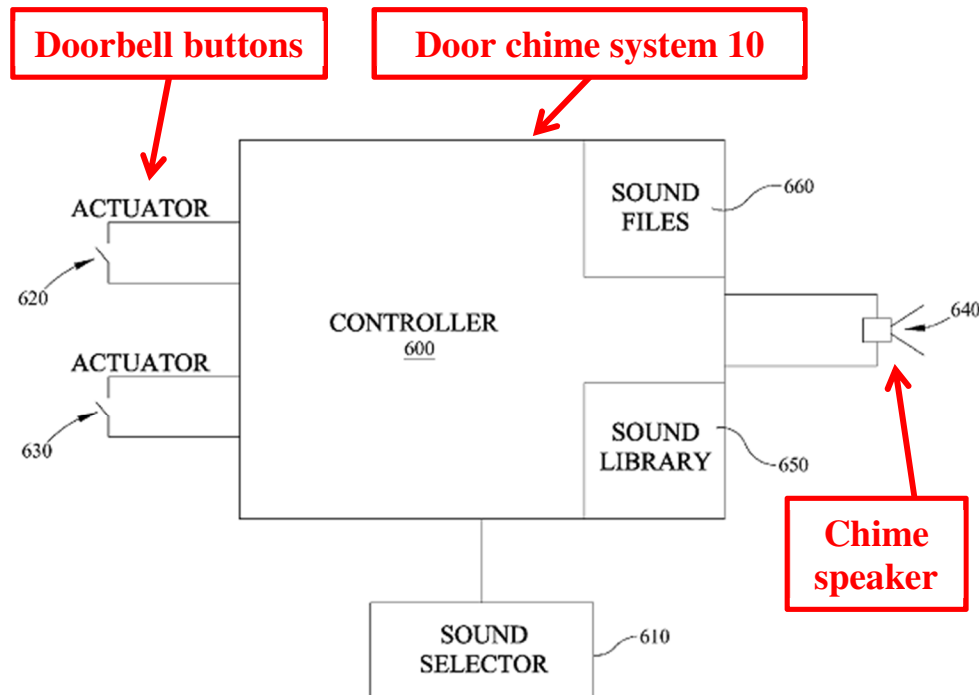
RING-1006, Fig. 1 (annotated); RING-1003, p. 78.

[18.1] *"a doorbell comprising a button configurable to detect a button press to indicate a presence of a visitor"*

Claiborne discloses this limitation because it teaches that its door chime system includes a "doorbell pushbutton" (or "actuator") that is "responsive to a positive act from a visitor" such that "when front doorbell pushbutton 130 is depressed, pushbutton output 132 provides an electrical signal to input PA0 of microcontroller 100 to initiate door chime playback." RING-1006, ¶¶ [0025], [0038], [0023]; *see also id.* ¶ [0038] ("Where multiple pushbuttons 130 are installed, another output 132 is electrically connected to input PA1 of microcontroller 100 so that the system 10 can distinguish which doorbell pushbutton 130 has been depressed, based upon the signals provided at inputs PA0 and PA1."). Claiborne further explains that its system can include multiple

pushbuttons, each with its own associated chime tune, "thereby permitting a user to know which pushbutton has been depressed by the polyphonic sound being reproduced." *Id*. ¶ [0015].

Thus, the doorbell pushbutton/actuator that, when pressed, sends a signal to initiate chime playback to indicate the presence of a visitor, as taught by Claiborne, discloses "a doorbell comprising a button configurable to detect a button press to indicate a presence of a visitor." *See* RING-1003, pp. 78-80.
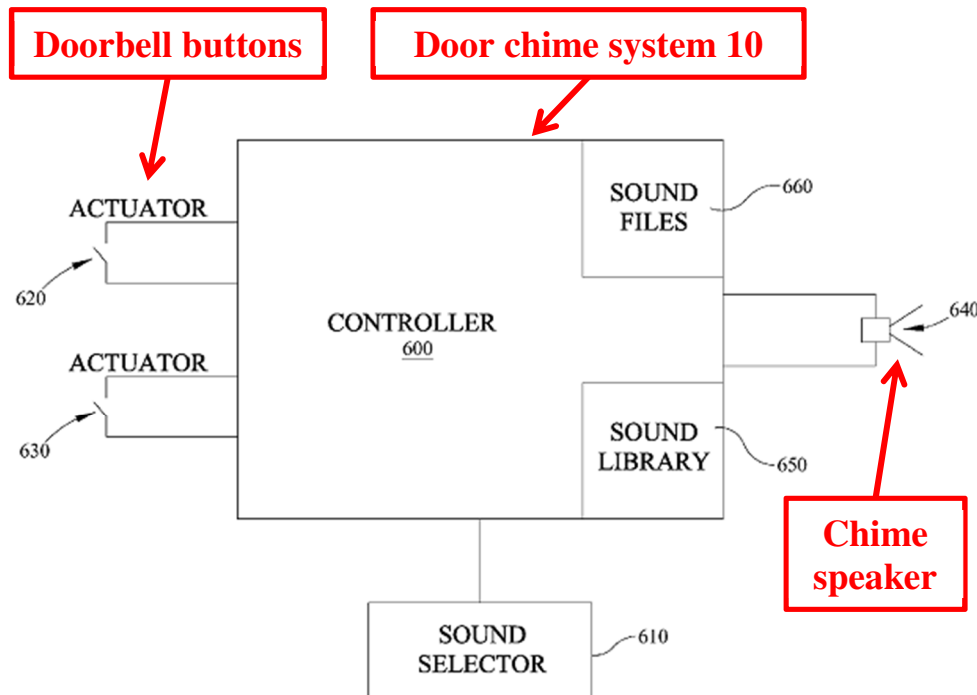
[18.2] *"a chime communicatively coupled to the doorbell"*

Claiborne discloses this limitation because it teaches that in its door chime system the "pushbuttons [are] wired to the door chime" or, alternatively, the "pushbuttons can also be operably coupled to the door chime through wireless methods." RING-1006, ¶ [0038]. The wired or wireless connection communicatively couples the chime and the doorbell buttons such that "when front doorbell pushbutton 130 is depressed, pushbutton output 132 provides an electrical signal to input PA0 of microcontroller 100 to initiate door chime playback." *Id*. Claiborne teaches that chime playback is implemented with an "amplifier" and "speakers" of the door chime system. *Id*. ¶¶ [0039]-[0040] ("When the front doorbell pushbutton input PA0 is detected, microcontroller U4 selects the audio file … and produces a polyphonic analog audio output on pin RCH which is amplified through amplifier IC U3, then reproduced via speaker SP1 and/or SP2.")
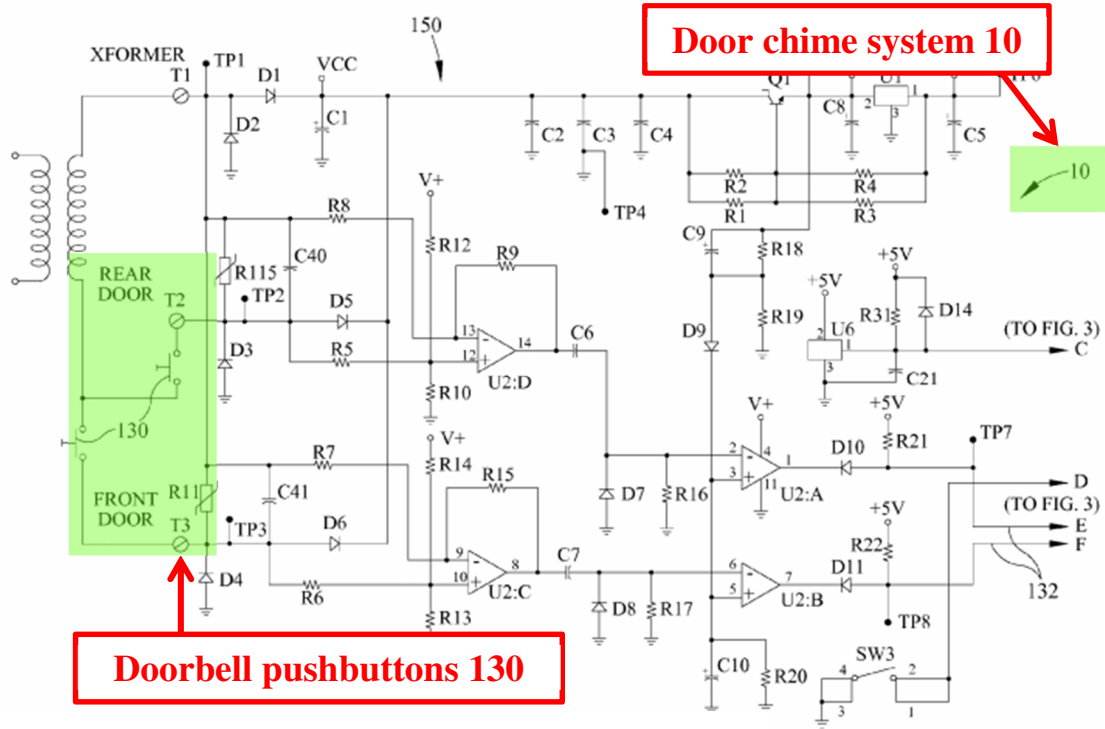
RING-1006, Fig. 2 (annotated); RING-1003, p. 82.

Fig. 1 also illustrates the door chime system 10 coupled to the doorbell pushbuttons/actuators:
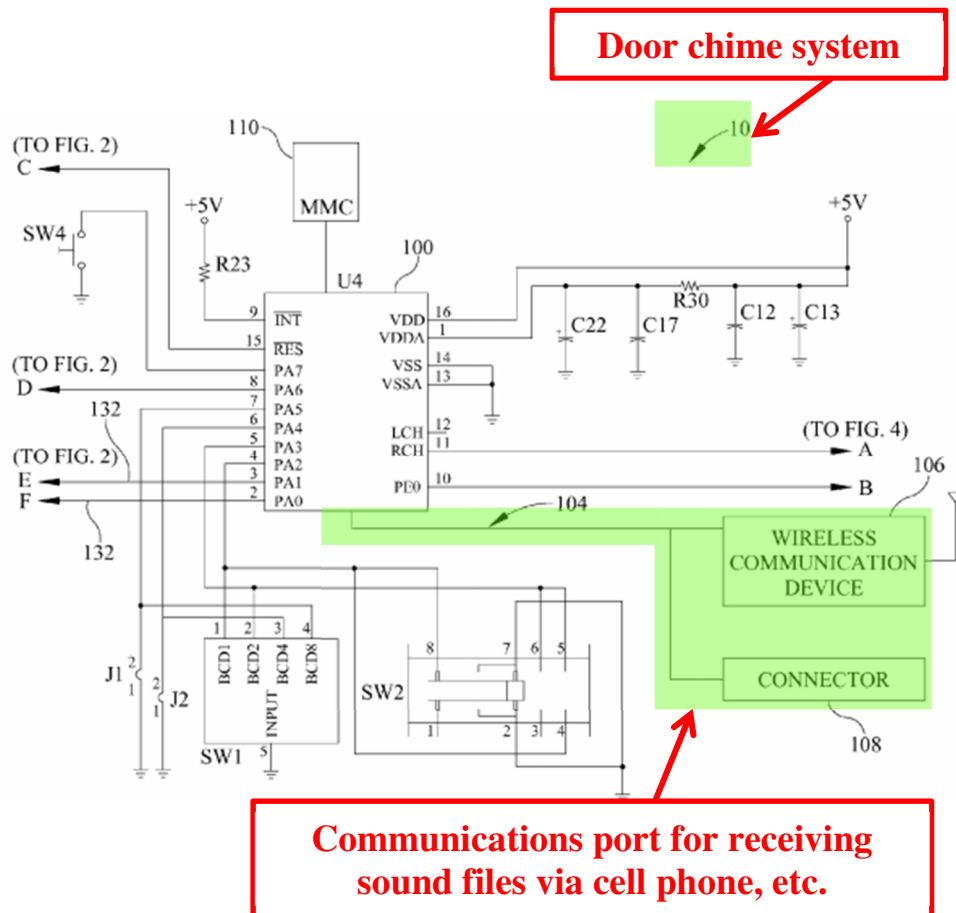
RING-1006, Fig. 1 (annotated); RING-1003, p. 83.

Thus, the chime with an amplifier and speakers communicatively coupled to the doorbell pushbutton/actuator, as taught by Claiborne, discloses "a chime communicatively coupled to the doorbell." *See* RING-1003, pp. 81-83.

[18.3] *"a communication device communicatively coupled to at least one of the doorbell and the chime, wherein the communication device comprises one of a phone and tablet device"*

Claiborne discloses this limitation because it teaches that the chime system includes a communications port "thereby permitting communications with a plurality of peripheral devices," such as a "cellular phone." RING-1006, ¶ [0027] ("a user can connect an audio data source to download sound representations form [sic] a device such as a personal computer, PDA, or cellular telephone"). Claiborne teaches that the communications port may utilize wireless communications such as

"Wifi (802.11), IrDA, Zigbee, Bluetooth, WiMax or any other open or proprietary system to allow the transfer from the audio data source to the communication port." *Id*.

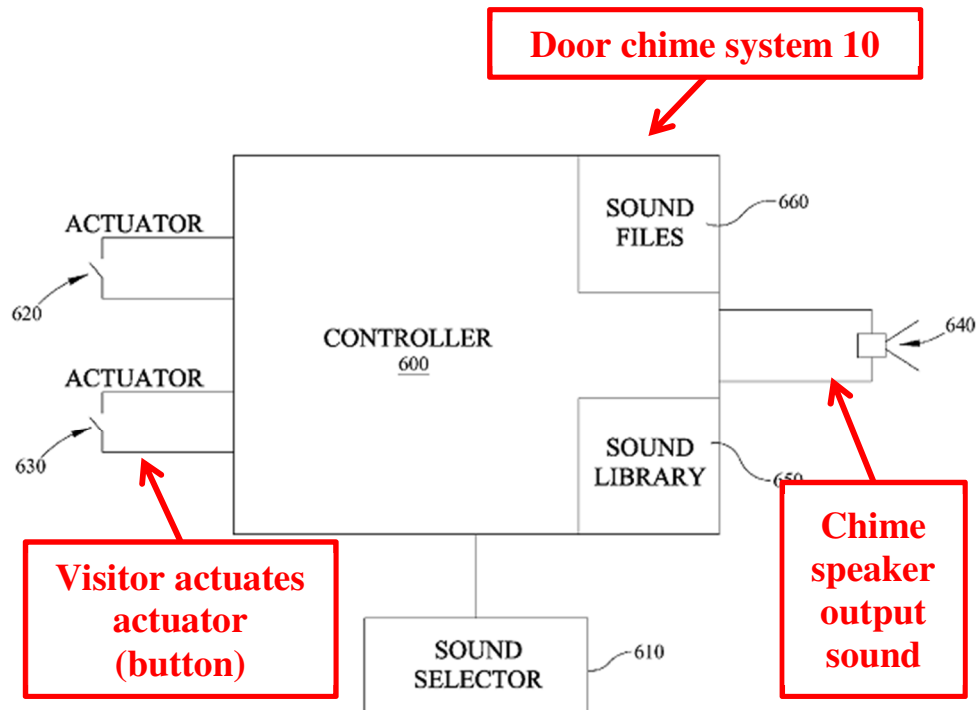RING-1006, Fig. 3 (annotated); RING-1003, p. 84.

Thus, the cellular phone communicatively coupled to the door chime system via the communications port, as taught by Claiborne, discloses "a communication device communicatively coupled to at least one of the doorbell and the chime, wherein the communication device comprises one of a phone and tablet device." *See* RING-1003, pp. 83-85.

[18.4] *"a sound emitted by a speaker of the chime in response to the doorbell detecting an indication of a presence of a visitor"*

Claiborne discloses this limitation because it teaches that "when front doorbell pushbutton 130 is depressed, pushbutton output 132 provides an electrical signal to input PA0 of microcontroller 100 to initiate door chime playback." RING-1006, ¶ [0038]. For example, "*[w]hen the front doorbell pushbutton input PA0 is detected*, microcontroller U4 selects the audio file indicated by switch SW1 … and produces a polyphonic analog audio output on pin RCH which is amplified through amplifier IC U3, *then reproduced via speaker SP1 and/or SP2*." *Id.* ¶ [0039] (emphasis added); *see also id.* ¶ [0038] (teaching that "a sound stored in data memory 110 [will] be played back responsive to the depression of a specific pushbutton 130.").

RING-1006, Fig. 1 (annotated); RING-1003, p. 86.

Thus, the sound emitted by the speaker of the door chime system in response to a visitor pressing the doorbell pushbutton/actuator, as taught by Claiborne, discloses "a sound emitted by a speaker of the chime in response to the doorbell detecting an indication of a presence of a visitor." *See* RING-1003, pp. 85-87.

[18.5] ***"wherein the chime comprises a data file having information that represents the sound."***

Claiborne discloses this limitation because it teaches that its chime system includes "a data memory for storing MIDI format sound files" that are received via the communications port. RING-1006, Abstract, ¶ [0027] ("Microcontroller 100 then receives the sound file at port 104, and properly loads the file into memory

110."). The sound files downloaded and stored in the data memory represent the

sound played when a user actuates a pushbutton:

> The present invention relates generally to door chime systems and
> more specifically to ***a door chime system capable of reproducing***
> ***polyphonic audio derived from a plurality of digital sound files***
> ***stored in a data memory responsive to a plurality of user inputs***
> and further capable of permitting operator selection from among a
> plurality of digital sound files stored in a polyphonic MIDI file
> format.

Id. at ¶ [0003] (emphasis added); *see also id*. ¶ [0027] (teaching "downloading

polyphonic MIDI sound files or other digital sound files incorporating alternative

digital formats for eventual playback"); Abstract ("The microcontroller includes an

input for accepting signals from door chime actuators or pushbuttons and an output

representative of distinct MIDI sound files."). Claiborne specifically describes the

"audio data" downloaded from the cellular phone as "sound representations." *Id*. ¶

[0027] ("a user can connect an audio data source to download ***sound***

representations form [sic] a device such as a personal computer, PDA, or cellular

telephone") (emphasis added).

Memory to store sound files

Door chime system

RING-1006, Fig. 3 (annotated); RING-1003, p. 89.

Thus, the door chime system storing in its memory sound files representing the sounds that are played when a visitor presses the doorbell pushbuttons, as taught by Claiborne, discloses "wherein the chime comprises a data file having information that represents the sound." *See* RING-1003, pp. 87-89.

VIII. CONCLUSION

For the reasons set forth above, Petitioner has established a reasonable likelihood that claims 12 and 18 of the '107 Patent are unpatentable. Petitioner requests institution of an *inter partes* review and cancellation of these claims.

Respectfully submitted,

Dated: December 17, 2018
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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this petition, that the number of words in this paper is 10,397. Pursuant to 37 C.F.R. §42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under §42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: <u>December 17, 2018</u>   /Scott T. Jarratt/
                                        Scott T. Jarratt
                                        Lead Counsel for Petitioner
                                        Registration No. 70,297

PETITIONER'S EXHIBIT LIST

December 17, 2018

RING-1001	U.S. Patent No. 9,179,107
RING-1002	Prosecution History of U.S. Patent No. 9,179,107
RING-1003	Declaration of Vijay Madisetti, Ph.D., Under 37 C.F.R. § 1.68
RING-1004	Curriculum Vitae of Vijay Madisetti, Ph.D.
RING-1005	U.S. Patent Application Publication No. 2007/0008081 ("Tylicki")
RING-1006	U.S. Patent Application Publication No. 2010/0225455 ("Claiborne")
RING-1007	U.S. Patent No. 1,647,558 ("Best")
RING-1008	U.S. Patent No. 1,647,708 ("Monica")
RING-1009	U.S. Patent Application Publication 2015/0109111 ("Lee")
RING-1010	Wayback Machine Archive Page, "iPhone," archived Jan. 11, 2007, https://web.archive.org/web/20070111091833/http://www.apple.com:80/iphone
RING-1011	Wayback Machine Archive Page, "802.15.1-2002 – IEEE Standard for [Bluetooth]," archived Feb. 6, 2013, https://web.archive.org/web/20130206162225/http://standards.ieee.org/findstds/standard/802.15.1-2002.html
RING-1012	Collection of Wayback Machine Archive Pages from bluetooth.com: - Wayback Machine Archive Page, "Our History," archived Oct. 17, 2013, https://web.archive.org/web/20131017160950/http://bluetooth.com/Pages/History-of-Bluetooth.aspx - Wayback Machine Archive Page, "Bluetooth Basics," archived Mar. 24, 2014, https://web.archive.org/web/20140324213424/http://bluetooth.com:80/pages/basics.aspx

	• Wayback Machine Archive Page, "Consumer Electronics Market," archived Feb. 9, 2014, https://web.archive.org/web/20140209002205/http://bluetooth.com/Pages/Consumer-Electronics-Market.aspx
RING-1013	NuTone LA600WH Wired / Wireless Door Chime Installation & Operating Instructions, archived Sept. 18, 2013, https://web.archive.org/web/20130918164027/http://www.nutonecollegepride.com:80/v/vspfiles/downloadables/CollegePrideInstallGuide.pdf
RING-1014	Wayback Machine Archive Page, "LA600WH College Pride Collection – Door Chimes – NuTone," archived May 30, 2013, https://web.archive.org/web/20130530150255/http://www.nutone.com:80/products/product/e2562b0e-4fe5-432a-ac70-228953b19875
RING-1015	Wayback Machine Archive Page, "Merriam-Webster Dictionary_customize," Archived January 1, 2014, https://web.archive.org/web/20140101084205/https:/www.merriam-webster.com/dictionary/customize
RING-1016	*Customize*, Webster II New College Dictionary (3d ed. 2005).
RING-1017	Heath Zenith InTune MP3 DoorChime - Manual (2013).pdf
RING-1018	Wayback Machine Archive Page, "NuTone LA600WH College Pride Doorbell Mechanism," archived Jun. 8, 2013, https://web.archive.org/web/20130608061028/http://www.nutonecollegepride.com/ProductDetails.asp?ProductCode=LA600WH
RING-1019	Affidavit of Christopher Butler and Archived Webpages corresponding to RING-1010, RING-1011, RING-1012, RING-1014, RING-1015, RING-1018, and RING-1013

<u>CERTIFICATE OF SERVICE</u>

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and

37 C.F.R. § 42.105, service was made on Patent Owner as detailed below.

Date of service   December 17, 2018

Manner of service   FEDERAL EXPRESS

Documents served   Petition for *Inter Partes* Review

         of U.S. Patent No. 9,179,107

    Certificate of Word Count

    Petitioner's Exhibit List

    Exhibits RING-1001 through RING-1019

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