

Inter Partes Review U.S. Patent No. 9,679,286

Askeladden, L.L.C. v. OHVA, Inc., IPR2023-00921

Jonathan Bowser
Matthew Beck
Haynes Boone, LLP



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Overview of '286 Patent

The Challenged Claims are not Supported by the '030 Application

Claim Construction of “Transaction Data”

Cho Teaches the Disputed Claim Limitations

Background on '286 Patent

In one embodiment of the invention an apparatus is provided, comprising a transaction card bearing data and having an output interface capable of transmitting the data, a card reader having an input interface enabled to accept the data from the output interface of the transaction card, conversion circuitry converting the card data to an analog modulated signal, and an output pin from the card reader adapted to engage in a microphone port of a computerized appliance, the output pin providing the analog modulated signal to the port, and thence to the computerized appliance.

In one embodiment of the apparatus the computerized appliance is enabled to communicate on a network, and has sound conversion circuitry converting the analog modulated signal to digital data. Also in one embodiment the computerized appliance comprise a processor executing coded instructions from a non-transitory medium, and the coded instruction executed by the processor cause the data to be used in a communication on the network. Also in one

EX1001, 1:65-2:15

Background on '286 Patent

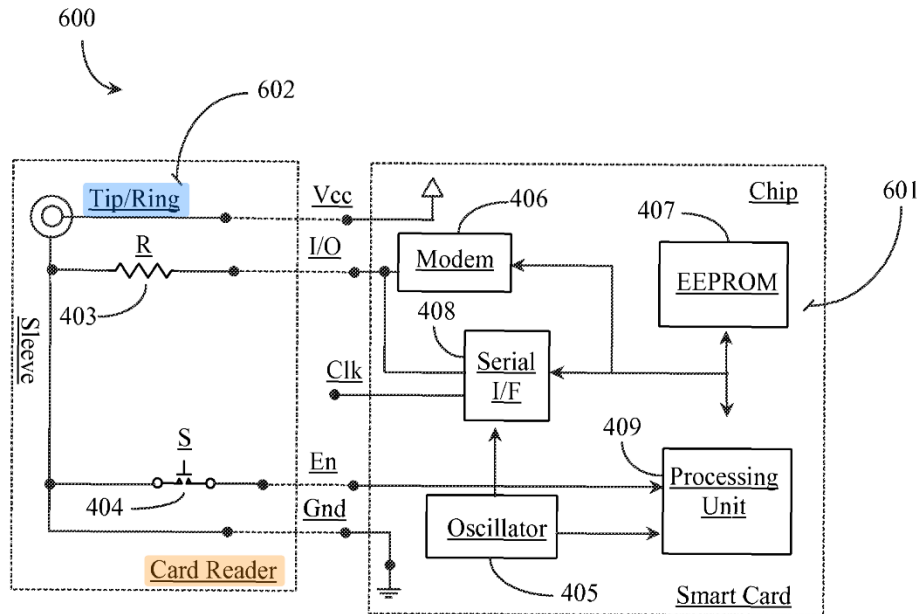


Fig. 6

FIG. 6 is a block-diagram 600 illustrating basic electronics of a smart card signal generator 601 coupled to a card reader 602 according to another embodiment of the present invention. Diagram 600 includes a smart card 601 with the sound pass chip embedded therein. The card plugs into card reader 602, which in turn is plugged into the microphone input of the host commuting appliance or other line input capable of carrying sound and directly or indirectly connected to the sound card on the computing appliance such as a PC.

EX1001, 8:26-35

Claim 1 of '920 Patent

What is claimed is:

- [1.0] 1. An apparatus comprising:
 - [1.1.1] a card reader having an input interface configured to accept transaction data from an output interface of a transaction card, and an output pin, as a part of the card reader, configured to directly connect the card reader to
 - [1.1.2] a microphone port of a smart telephone, the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and
 - [1.2] coded instructions stored in a non-transitory medium of a first Internet-connected server, and accessible by a user of the card reader;
 - [1.3.1] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data,
 - [1.3.2] establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

EX1001, claim 1 (with claim element numbering from Petition).

Instituted claims and grounds

Ground	Claim	Obviousness Basis
#1	1	Cho in view of Aaron and Carpenter
#2	2	Cho in view of Aaron, Carpenter, and de Geer
#3	3	Cho in view of Aaron
#4	4	Cho in view of Aaron and de Geer

- Patent Owner presents the same arguments for claims 1 and 3.
 - Claim 3 does not have a feature corresponding to [1.2].
- Patent Owner does not contest claims 2 and 4.

Overview of '286 Patent

The Challenged Claims are not Supported by the '030 Application

Claim Construction of “Transaction Data”

Cho Teaches the Disputed Claim Limitations

The challenged claims are not supported by the '030 Application

App. No. Patent No.	11/533,030 - ('030 Application)	14/524,842 9,003,508 ('842 Application)	14/636,674 9,679,286 ('674 Application)
Filing Date	9/19/2006	10/27/2014	3/3/2015

Reply, 2

The issued claims of the '286 Patent are significantly different than what was originally filed

an output pin from the card reader adapted to engage in a microphone port of a computerized appliance, the output pin providing the analog modulated signal to the port, and thence to the computerized appliance.

EX1002, 456



an output pin from the card reader, ~~the output pin adapted~~ configured to engage in a microphone port of a ~~computerized appliance~~ personal computing device or a smart telephone, ~~the conversion circuitry providing the analog modulated signal to the output pin~~ the output pin providing the analog modulated signal to the port, and thence to the computerized appliance.

EX1002, 360



an output pin from the card reader, the output pin configured to engage in a microphone port of a ~~personal computing device or a smart telephone~~, the conversion circuitry providing the analog modulated signal to the output pin; and
a smart telephone configured to communicate on a network, the smart telephone comprising the microphone port engaged with the output pin to receive the analog modulated signal and conversion circuitry for converting the analog modulated signal to digital data for transmission on the network.

EX1002, 307

The issued claims of the '286 Patent are significantly different than what was originally filed

The specification has new matter from the original filing and therefore is not a continuation but a CIP.

* * * *

However, upon examination of the amended claims, examiner has discovered that applicant has added new matter to the claims.

Now turning to the instant application, pages 2, lines 21-28, and pages 3, lines 1-28, and page 4, lines 1-12, from the instant specification as filed, constitute new matter.

This part of the disclosure was not included in the prior filed application as filed (application 11/533,030).

Because of these findings, the claims no longer receive the early filing date, since the application is a CIP and not a continuation. Applicant will receive the filing date of the instant application (3/03/15).

EX1002, 115-116

The issued claims of the '286 Patent are significantly different than what was originally filed

1. An apparatus comprising:

a transaction card bearing data and having an output interface capable of transmitting the data;

a card reader having an input interface enabled to accept the data from the output interface of the transaction card;

conversion circuitry converting the card data to an analog modulated signal; and

an output pin from the card reader adapted to engage in a microphone port of a computerized appliance, the output pin providing the analog modulated signal to the port, and thence to the computerized appliance.

EX1002, 456

What is claimed is:

1. An apparatus comprising:

a card reader having an input interface configured to accept transaction data from an output interface of a transaction card, and an output pin, as a part of the card reader, configured to directly connect the card reader to a microphone port of a smart telephone, the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and

coded instructions stored in a non-transitory medium of a first Internet-connected server, and accessible by a user of the card reader;

wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data, establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

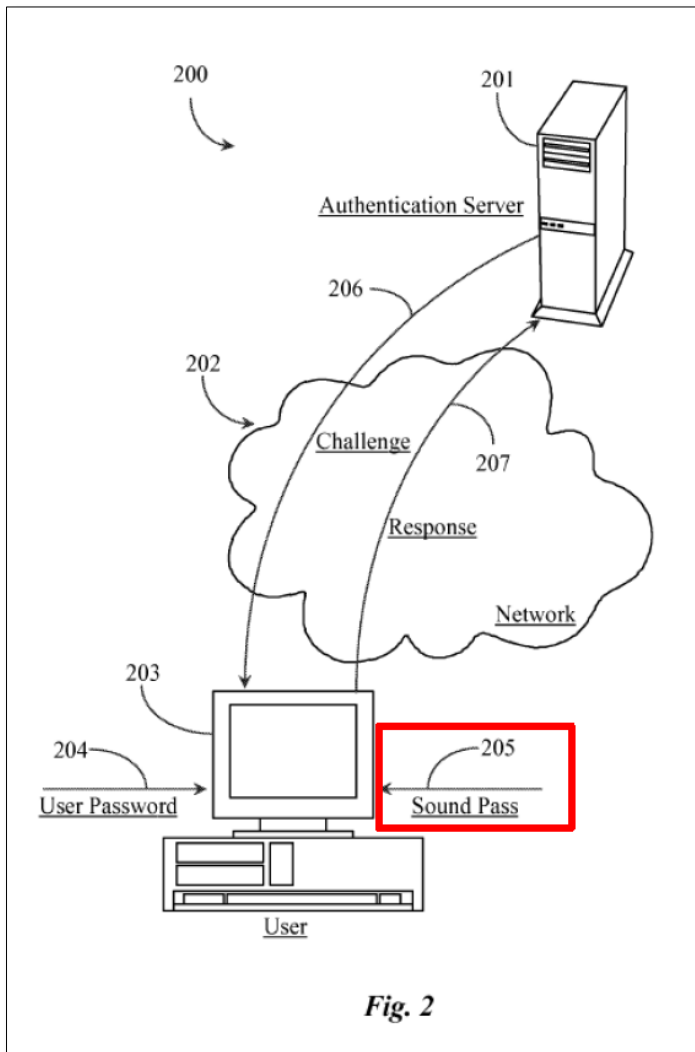
EX1001, Claim 1

Limitations [1.3.1]-[1.3.2] are not supported by any parent application

[1.3.1] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data

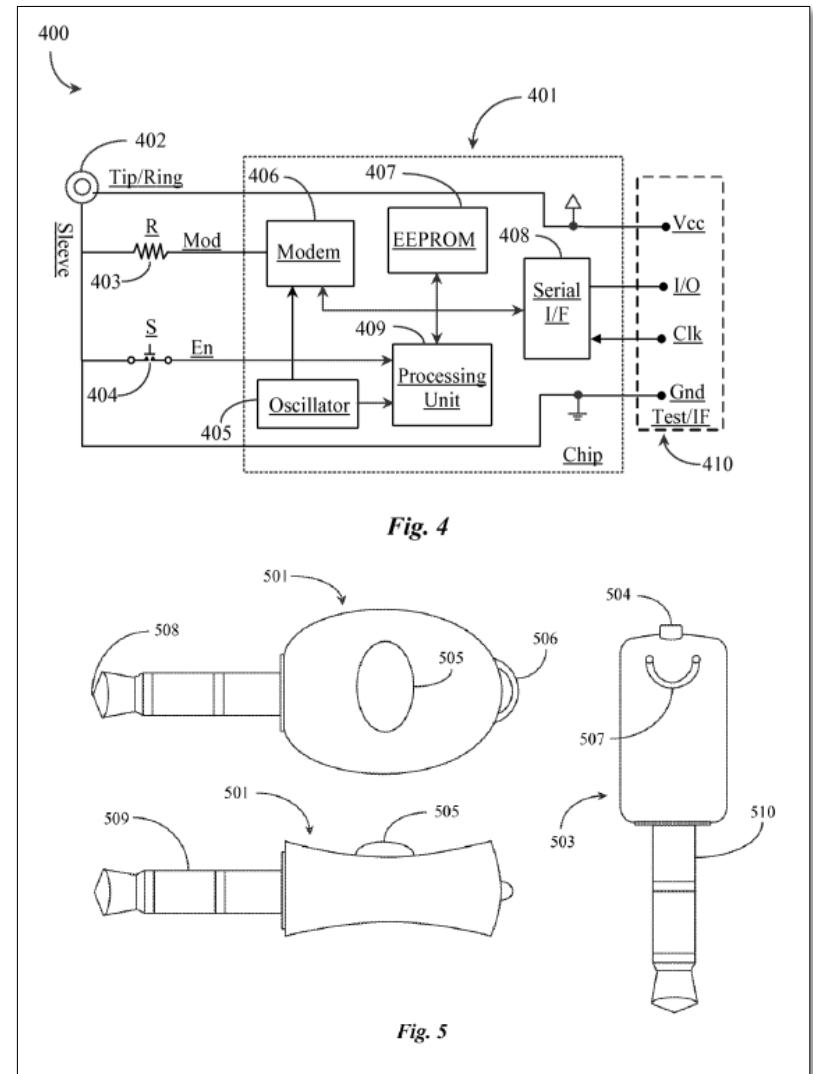
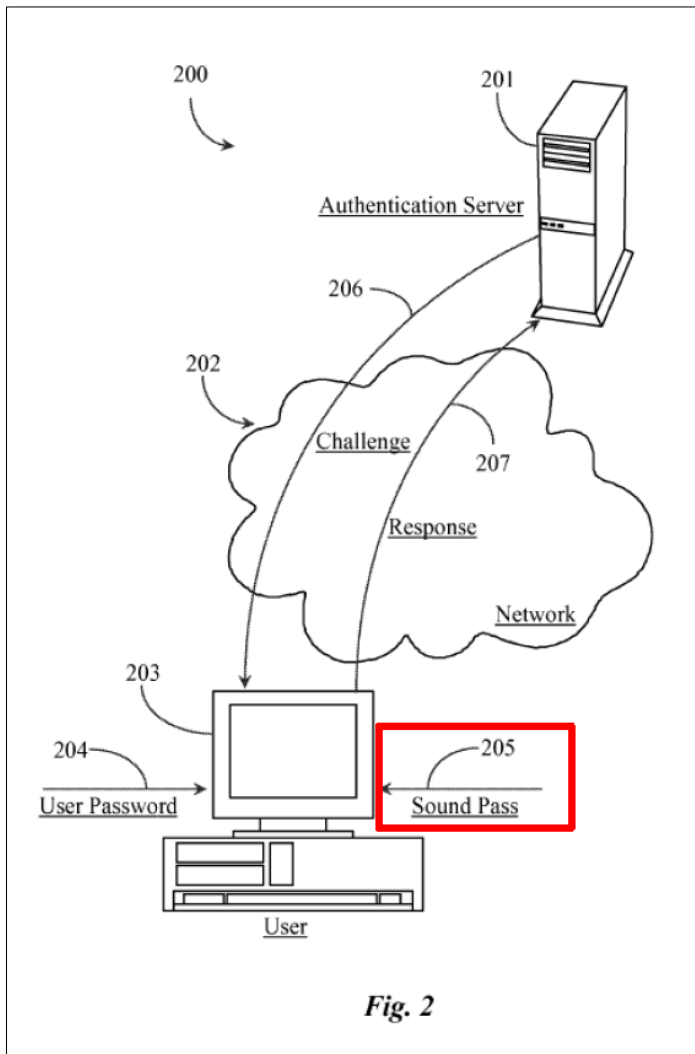
[1.3.2] establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

The '030 Application describes providing a “sound pass” to a PC



- Three sources to PC:
 - key jack (Fig. 4 & 5)
 - smart card & smart card reader (Fig. 6)
 - smart phone (Fig. 7)

The '030 Application describes providing a “sound pass” to a PC



The '030 Application describes providing a “sound pass” to a PC

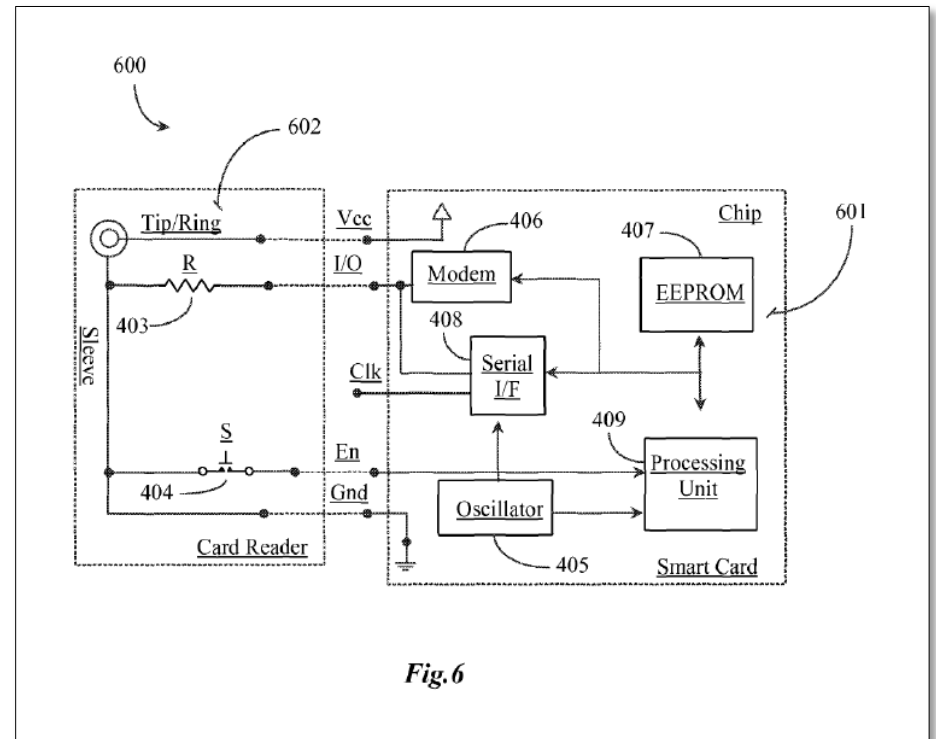
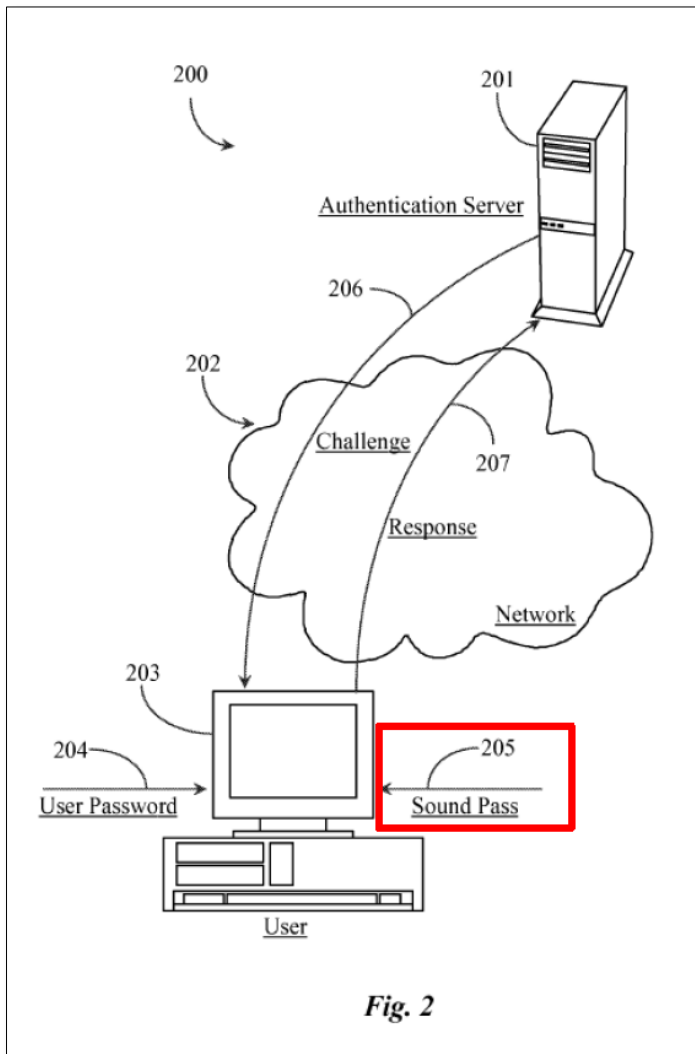
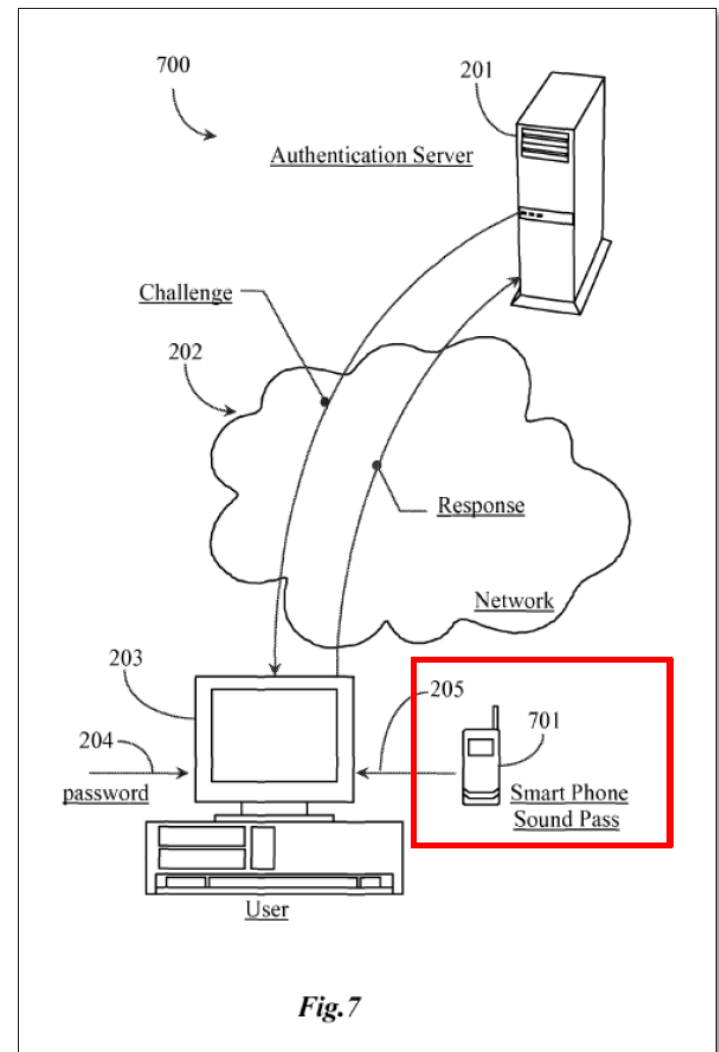


Fig. 6

The '030 Application describes providing a “sound pass” to a PC

In this example, a modulated audio signal is generated by a sound-generating applet installed on and executable from mobile device 701, which is a smart phone in this example. In another embodiment, phone 701 may instead be a PDA or a hand-held music player such as an iPod™

EX1001, 9:45-49

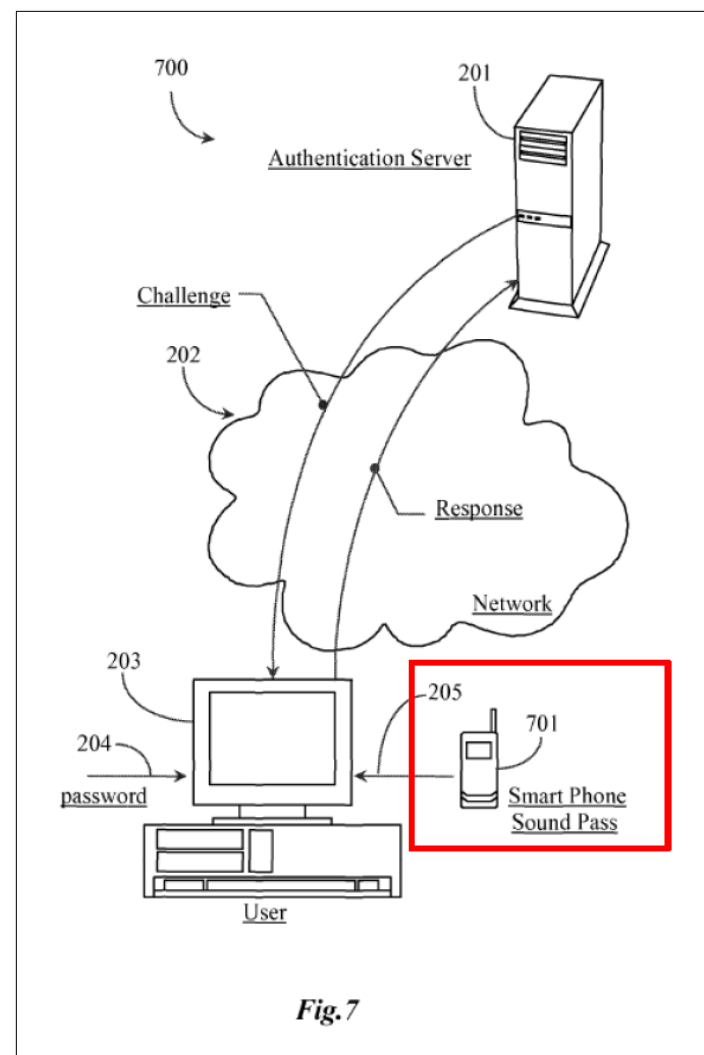


Pet., 21-26; Reply, 9-10; EX1001, 9:45-49, Fig. 7.

The '030 Application describes direct data exchange performed by a PC, not a smart telephone

In another embodiment, mobile device 701 may include a hardwire cable that connects the speaker or headset output to the microphone input accomplishing the same task of inputting the signal. A PC-based applet on the PC demodulates the sound pass signal and communicates with the server to authenticate the user. In this example, the token on the mobile device if a sound file may not be updated by a PC applet or by the server through the host PC. However, in one embodiment the sound file may be updated by the applet on the device if the server sends a new session key to the mobile device directly or by the server contacting the telephone directly and establishing a secure network session with the device to update the file.

EX1001, 9:58-10:3



Reply, 15; EX1001, 9:58-10:3, Fig. 7.

The '030 Application describes direct data exchange performed by a PC, not a smart telephone

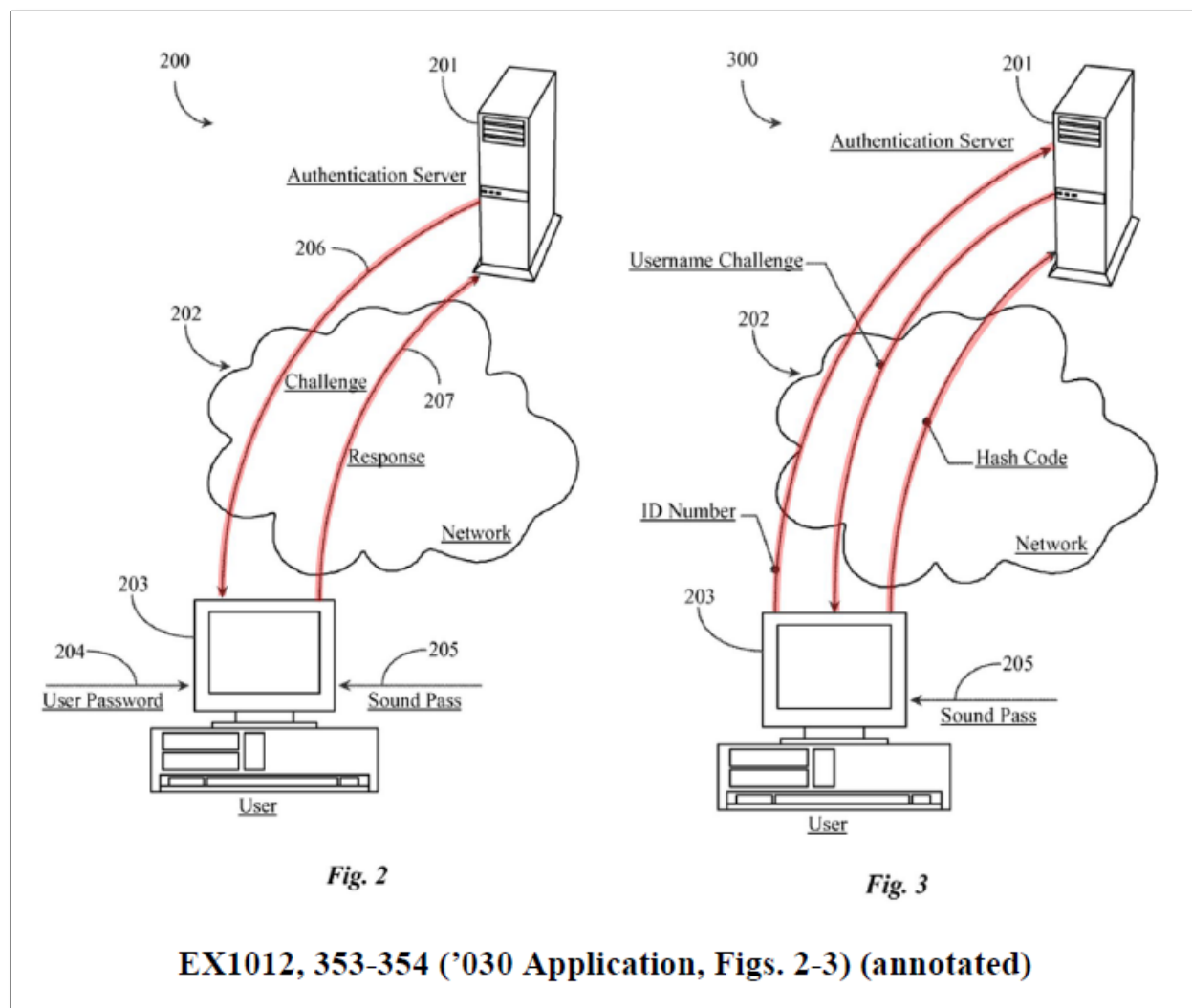


Figure 14 shows the creation of a digital token on a client PC

When the applet is received at the client, it executes on the client for the purpose of **creating the token file at act 1404**. In one embodiment there is a virtual keypad included as part of the applet program that may be used by the client to enter an encryption code for the purpose of encrypting the token file. In act **1405**, it is determined if the virtual keypad is

EX1001, 14:5-10

If in act **1408** the token deployment mode is not dynamic, then at act **1410** the applet writes the token file in encrypted form to the root drive **on the client PC**. At act **1411** it is

EX1001, 14:43-45

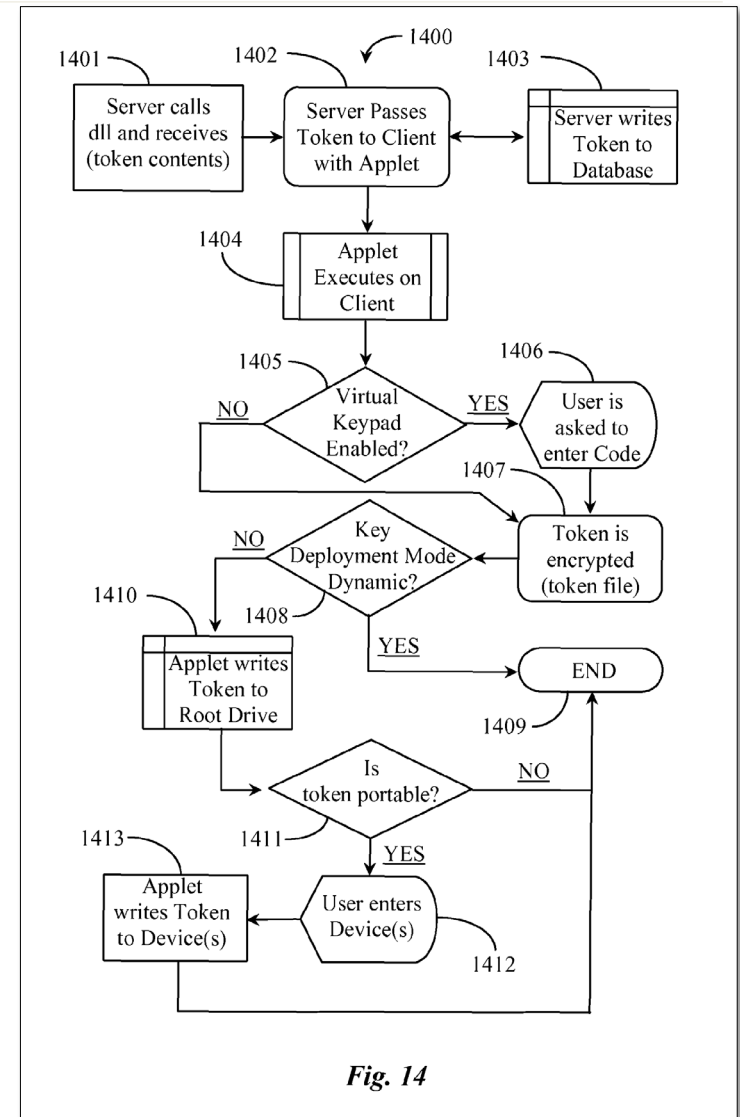


Fig. 14

Mr. McNair explained that the use of “smart phone” in the '030 Application is used in the context of sound generation

88. In the '030 Application, the specification does not suggest that the “smart phone” would operate as anything other than a medium for providing a sound file to a PC. Indeed, the '030 Application repeatedly refers to the actions of the PC, done via an applet, while the only mention of an applet in the context of a “smart phone” is to generate sounds for a PC. EX1032, ¶¶ 52 (“As long as the sound file can be input into the PC and recognized by the applet running on the PC the present invention can be practiced successfully.”), 68 (“a modulated audio signal is generated by a sound-generating applet installed on and executable from mobile device 701, which is a smart phone in this example”). The claims of the '030 Application support this understanding: a “sound file [is] stored on a machine peripheral to the machine used to secure authentication,” EX1012, 349; EX1032, Claim 10, “wherein the peripheral machine is one of a cellular telephone, a personal digital assistant, or a hand held music player,” EX1032, Claim 11. EX1003, ¶88

Mr. Boy's conflicting declarations deserve little weight

First declaration:

1. My firm, Central Coast Patent Agency, LLC, filed on 3.29.2017 a response to a Final office action issued 1/20/2017 in application 14636674. The response document is a Word file with filename 1987.02oar5. A true and correct copy of this response document is submitted as EX2002.

* * * *

3. I declare that the document 1987.02oar5, submitted herewith as EX2002, is the document referred to in the Notice of Allowance and Allowability as the communication from the applicant.

EX2001, 2

Second declaration:

3. It thus appears that the document 1987.02oar5 was actually never filed in the case. Instead a telephonic conference was held on aspects of the case on 3/29/2017, with attendees Donald. R. Boys, reg. no. 35074, Cynthia Lamon, reg. no. 73334, Examiner Mohammad Z. Shaikh, phone 571-270-3444, and Supervisor Kambiz Abdi, phone 571-272-6702. All outstanding issues were discussed in that conference and as a result the Examiner and Supervisor Abdi agreed that the issues and rejections were overcome, and the case was allowable. I asked if I should file the formal response, and the Examiner indicated it was not necessary, as she would do an Examiner's amendment from proposed claim amendments I was to provide, which were provided in the fax document "fax.docs", and issue a Notice of Allowance.

EX2003, 2

Mr. Boy's conflicting declarations do not match the file history of the '286 Patent

Proposed Amendments

9. (Currently amended) A method comprising:

- accepting ~~transaction~~ data from a transaction card at an input interface of a card reader having an output pin as a part of the card reader, the output pin directly connecting the card reader in a microphone port of a smart telephone;
- receiving the transaction data in the smart telephone as an analog variable voltage signal from the microphone port of the smart telephone;
- converting the transaction data as an analog variable voltage signal in the smart telephone to digital data;
- establishing direct data exchange with an Internet-connected server providing services to a financial institution or an on-line merchant by executing coded instructions on a processor in the smart telephone; and
- facilitating transactions with the financial institution or purchases from the on-line merchant, using the transaction data.

EX2004, 5-6

Notice of Allowance Amendments

9. (Currently amended) A method comprising:

- accepting transaction data from a transaction card at an input interface of a card reader having an output pin as a part of the card reader, the output pin directly connecting the card reader in a microphone port of a smart telephone;
- receiving the transaction data in the smart telephone as an analog variable voltage audio signal from the microphone port of the smart telephone;
- ~~converting the transaction data as an analog variable voltage signal in the smart telephone to digital data;~~
- converting the analog variable voltage audio signal received at the microphone port to the transaction data as digital data;
- establishing direct data exchange with an Internet-connected server providing services to a financial institution or an on-line merchant by executing coded instructions on a processor in the smart telephone; and
- facilitating transactions with the financial institution or purchases from the on-line merchant, using the transaction data.

EX1002, 34-35



Overview of '286 Patent

The Challenged Claims are not Supported by the '030 Application

Claim Construction of “Transaction Data”

Cho Teaches the Disputed Claim Limitations

The Board's construction of "transaction data" is correct

embodiment. We therefore do not limit the claimed "transaction data" and instead preliminarily construe that term as encompassing any data involved in a transaction, including account data. As described above, the claimed transaction data must come from the output interface of a transaction card.

Inst. Dec., 8

[1.1.1] a card reader having an input interface configured to accept transaction data from an output interface of a transaction card,

[1.1.3] the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and

[1.3.1] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data,

[1.3.2] establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

EX1001, Claim 1

Inst. Dec., 8; Reply, 18-20; EX1043, ¶¶ 46-49.

The Board's construction of "transaction data" is correct

Thus, the claimed "transaction data" that is "accepted . . . from an output interface of a transaction card" and "accepted . . . from a transaction card at an input interface of the card reader," as recited in independent claims 1 and 3, comprises data stored on and read from a card, such as an ID number, password, authentication information, or session information, that can be used to facilitate a transaction. Such claimed "transaction data" is distinct

Inst. Dec., 8

[1.1.1] a card reader having an input interface configured to accept transaction data from an output interface of a transaction card,

[1.1.3] the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and

[1.3.1] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data,

[1.3.2] establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

EX1001, Claim 1

Inst. Dec., 8; Reply, 18-20; EX1043, ¶¶ 46-49.

The claims are not limited to the Fig. 11 embodiment

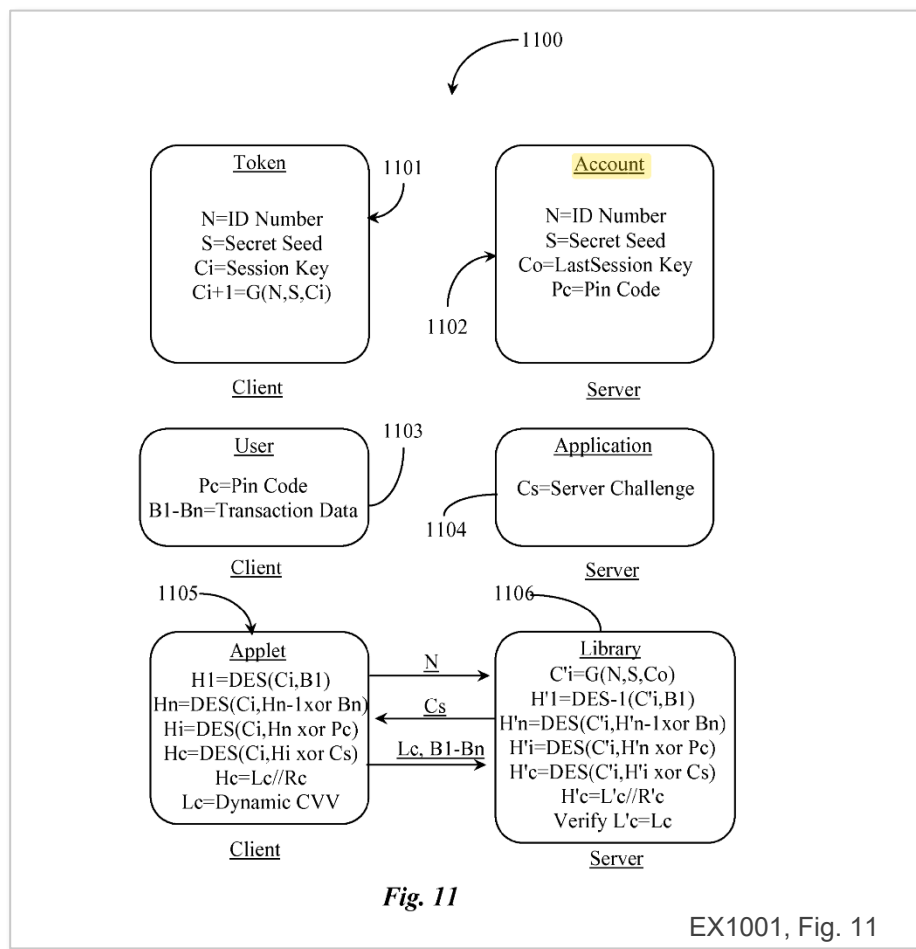


FIG. 11 is a block diagram 1100 illustrating user authentication using a card verification value (CVV) code according to yet another embodiment of the invention. In this example, banks or other financial institutions deploy secure smart cards in the form of bank cards having the sound pass token chip embedded thereon. The cards are adapted as a variation of the smart card used with a card reader plugged into a microphone jack on the user PC as described further above.

In this example the token (bank card) includes the token parameters of N, S, and Ci where Ci is the current session key. N (ID number) is different than the issued card number in this example for better security, but it includes the ID of the card issuing entity and enables the bank to route the transaction along with the CVV number (3-digit number) using existing bank protocols. The client account 1102 includes the ID number (N), the secret seed (S), the last session key used by the client (Co), and the client PIN code (Pc).

EX1001, 12:13-31

- Limitations [1.1.1], [1.1.3], [1.3.1], or [1.3.2] do not require (1) that “transaction data” is distinguished from “account information,” or (2) “user authentication.”

Reply, 19-21; EX1043, ¶¶ 50-58.

Overview of '286 Patent

The Challenged Claims are not Supported by the '030 Application

Claim Construction of “Transaction Data”

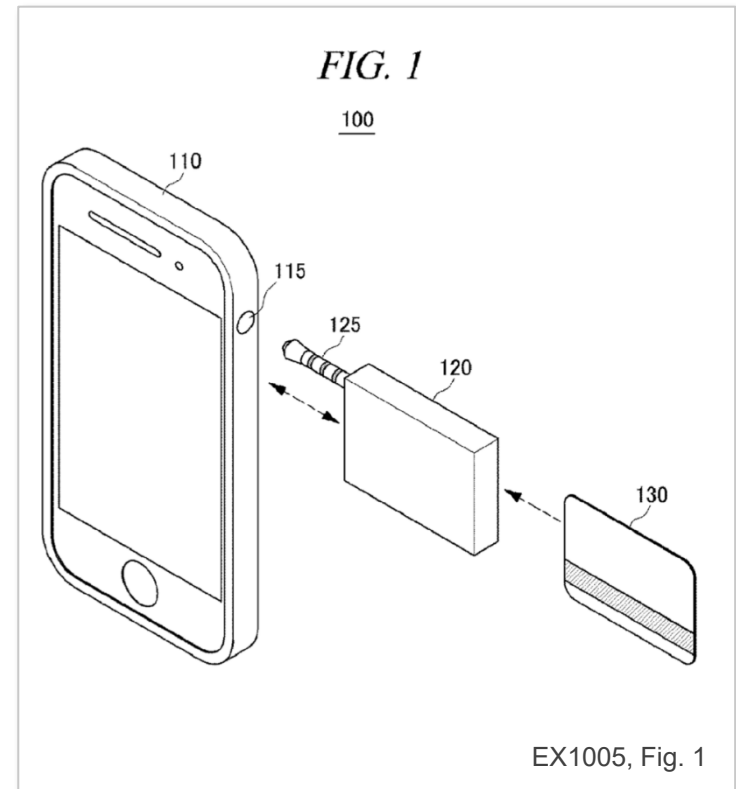
Cho Teaches the Disputed Claim Limitations

Overview of Cho

FIG. 1 shows an example system configuration 100 in which one or more embodiments of a card payment system may be implemented. As depicted in FIG. 1, system configuration 100 includes, at least, a client device 110, and a card payment apparatus 120. Client device 110 may refer to at least one of a device that has an audio jack socket 115, such as a mobile phone, a portable device, a notebook, or even a personal computer or a personal communication terminal, such as PCS (Personal Communication System), GMS (Global System for Mobile communications), PDC (Personal Digital Cellular), PDA (Personal Digital Assistant), IMT (International Mobile Telecommunication)-2000. Client device 110 and card payment apparatus 120 may be connected when audio jack socket 115 corresponding to client device 110 receives an audio jack 125 corresponding to card payment apparatus 120.

Client device 110 may be configured to receive, from card payment apparatus 120 via audio jack 125, a first analog signal to which a first digital signal is converted. The first digital signal may include account information which may be read from a card 130 by card payment apparatus 120. By way of example, but not limitation, the account information may include at least one of an account number, a card expiration date, etc. Card payment apparatus 120 may be configured to convert the read account information into the first analog signal by using any well-known digital-analog converting scheme and to transmit the converted first analog signal to client device 110 via audio jack 125.

EX1005, 3:3-31



analog-digital converting scheme. Then, client device 110 may be configured to execute a card payment based at least in part on the account information through a card payment server (not illustrated in FIG. 1) which is communicatively coupled to client device 110 via a wireless network. The card

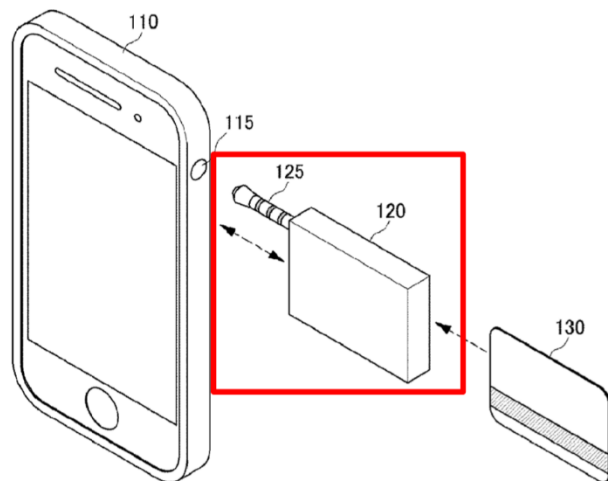
EX1005, 3:52-56

Pet., 28-29, 40-42; EX1005, 3:3-31, 3:52-56, Fig. 1, Abstract.

Cho's "account information" from a transaction card teaches the claimed "transaction data"

FIG. 1

100



EX1005, Fig. 1 (Annotated); EX1003, ¶118.

Client device 110 may be configured to receive, from card payment apparatus 120 via audio jack 125, a first analog signal to which a first digital signal is converted. The first digital signal may include account information which may be read from a card 130 by card payment apparatus 120. By way of example, but not limitation, the account information may include at least one of an account number, a card expiration date, etc. Card payment apparatus 120 may be configured to convert the read account information into the first analog signal by using any well-known digital-analog converting scheme and to transmit the converted first analog signal to client device 110 via audio jack 125.

EX1005, 3:20-31

analog-digital converting scheme. Then, client device 110 may be configured to execute a card payment based at least in part on the account information through a card payment server (not illustrated in FIG. 1) which is communicatively coupled to client device 110 via a wireless network. The card

EX1005, 3:52-56

67. Cho's "account information" is not used for user authentication—it refers to a credit card number and expiration date used for precisely the same purpose as transaction data under Patent Owner's interpretation: "perform[ing] a series of banking transactions." POR, 26; see EX1005, 3:24-27 ("By way of example, but not

EX1043, ¶ 67

Cho's "account information" from a transaction card teaches the claimed "transaction data"

[1.1.1] a card reader having an input interface configured to accept transaction data from an output interface of a transaction card,

[1.1.3] the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and

[1.3.1] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data,

[1.3.2] establish direct data exchange between the smart telephone and a second Internet-connected server and facilitate transactions by a financial institution, or purchases from an online-merchant, using the transaction data.

EX1001, Claim 1

Client device **110** may be configured to receive, from card payment apparatus **120** via audio jack **125**, a first analog signal to which a first digital signal is converted. The first digital signal may include account information which may be read from a card **130** by card payment apparatus **120**. By way of example, but not limitation, the account information may include at least one of an account number, a card expiration date, etc. Card payment apparatus **120** may be configured to convert the read account information into the first analog signal by using any well-known digital-analog converting scheme and to transmit the converted first analog signal to client device **110** via audio jack **125**.

EX1005, 3:20-27

analog-digital converting scheme. Then, client device **110** may be configured to execute a card payment based at least in part on the account information through a card payment server (not illustrated in FIG. 1) which is communicatively coupled to client device **110** via a wireless network. The card

EX1005, 3:52-56

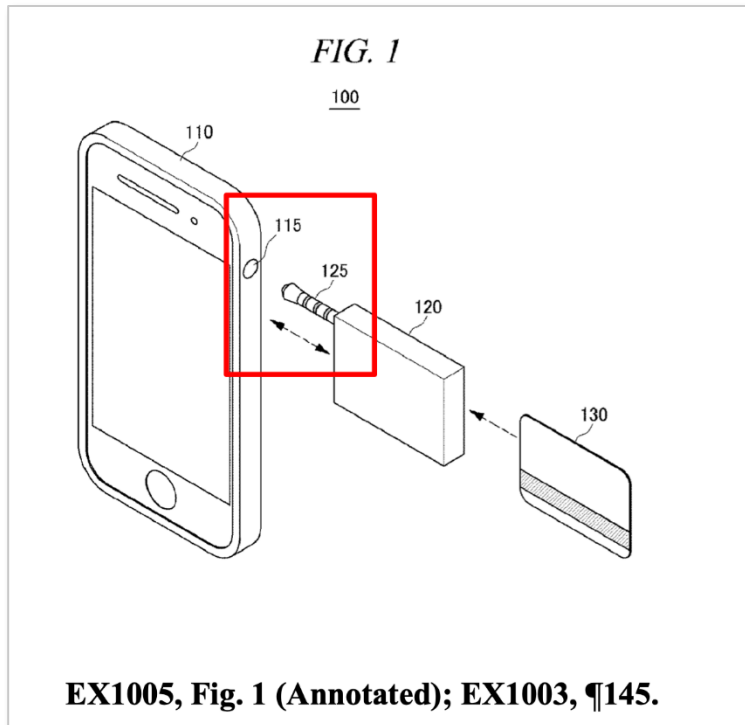
a card expiration date, etc.”). This account information as described by Cho refers

to the same concept as the claimed “transaction data,” which is used in a transaction

(limitations [1.3.2] and [3.4]).

EX1043, ¶ 70

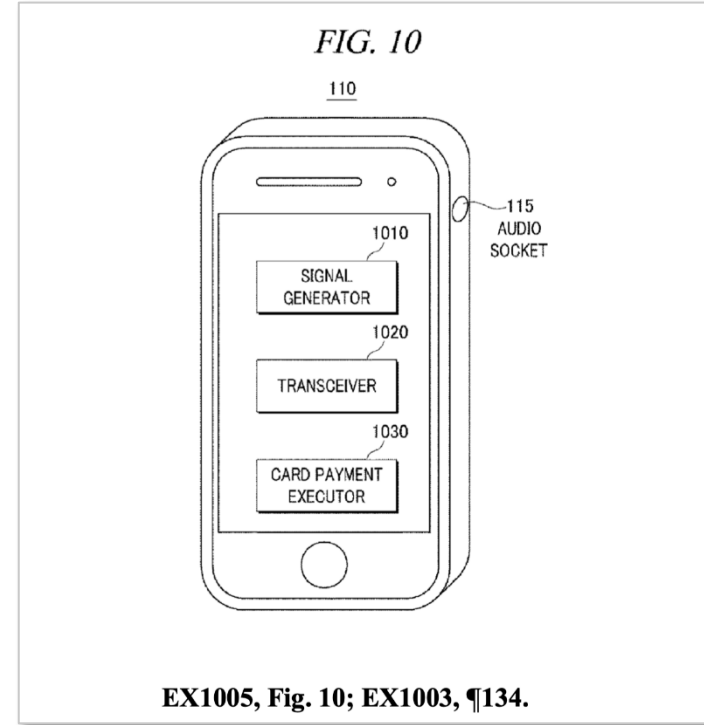
Cho's client device 110 converts the account information as an analog signal into a digital signal



Client device 110 may be configured to receive, from card payment apparatus 120 via audio jack 125, a first analog signal to which a first digital signal is converted. The first digital signal may include account information which may be read from a card 130 by card payment apparatus 120. By way

EX1005, 3:20-24

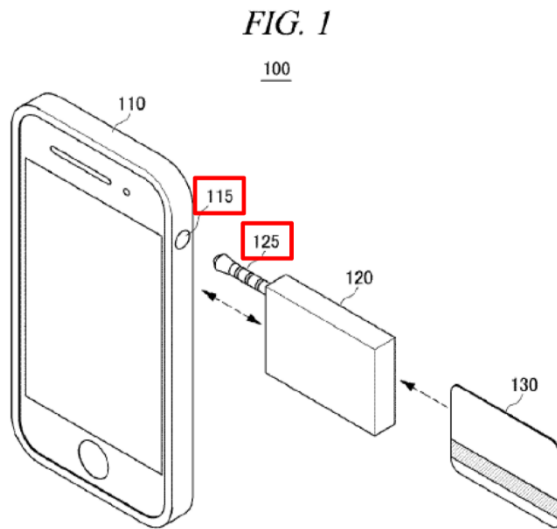
EX1005, 11:27-38



Transceiver 1020 may be configured to receive a first analog signal from card payment apparatus 120 via a microphone contact of audio jack 125. The first analog signal is a signal to which a first digital signal that includes account information is converted by card payment apparatus 120. Transceiver 1020 may be further configured to transmit the acoustic signal and second analog signal to card payment apparatus 120 via at least one earphone contact of audio jack 125.

Card payment executor 1030 may be configured to convert the first analog signal into the first digital signal that includes the account information by using any well-known analog-digital converting scheme. If the first digital signal is

Cho teaches receiving and converting an “analog variable voltage audio signal”



EX1005, Fig. 1 (annotated)

Client device **110** may be configured to receive, from card payment apparatus **120** via audio jack **125**, a first analog signal to which a first digital signal is converted. The first digital signal may include account information which may be read from a card **130** by card payment apparatus **120**. By way

EX1005, 3:20-24

In some embodiments, audio jack **125** may include at least one earphone contact, a ground contact and a microphone contact. Audio jack **125** may be inserted into audio jack socket **115** that is installed on a surface of client device **110**. At least one analog signal associated with information or data may be transmitted from client device **110** to card payment apparatus **120** via the at least one earphone contact and, conversely, at least one analog signal may be transmitted from card payment apparatus **120** to client device **110** via the microphone contact.

EX1005, 4:58-67

[1.1.3] the card reader providing the transaction data accepted from the output interface of the transaction card to the output pin, and hence to the microphone port, as an analog variable voltage audio signal; and

[1.3.1] wherein the coded instructions, when executed on a processor in the smart telephone, convert the analog variable voltage audio signal received at the microphone port to the transaction data as digital data,

EX1001, claim 1

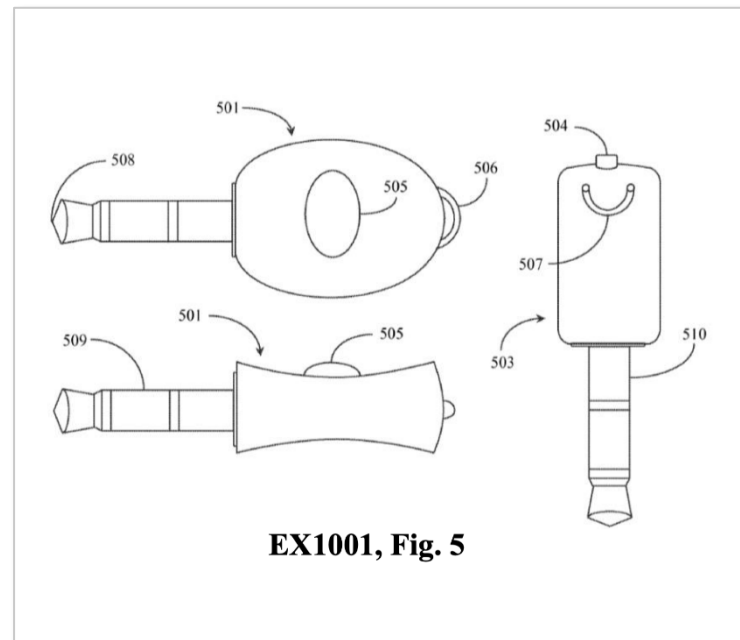
Cho's analog signal is an “analog variable voltage audio signal,” and Cho uses the same technique as the '286 Patent

Mr. McNair:

75. As shown in Fig. 5, below, the '286 Patent's “key jack” transmits the analog signal via an identical audio jack. The audio jack is inserted into a corresponding “‘audio in’ line on a PC such as the microphone port.” EX1001, 6:61-64. When the transaction card reader or smart telephone are used to supply the analog signal, it also transmitted via the same type of audio jack and corresponding microphone port. EX1001, Fig. 6 (“Tip/Ring” and “Sleeve”), 9:58-61 (“hardwire cable that connects...to the microphone input”).

76. Accordingly, both Cho and the '286 Patent describe transferring the analog signal in the same way using the same standardized connections. There is no distinction between an “analog variable voltage signal” and an “alternating current (AC) voltage of an acoustic signal.” An acoustic signal is an analog signal. For example, Thompson (EX1042), which is directed to transmitting voice information (acoustic signal) over an alternating current (AC) signal, explains that the “ac input” is “representative of said transmit audio signal.” EX1042, 6:31-33.

EX1043, ¶¶ 75-76



EX1001, Fig. 5

Inter Partes Review

U.S. Patent No. 9,679,286

Askeladden, L.L.C. v. OHVA, Inc., IPR2023-00921

Jonathan Bowser
Matthew Beck
Haynes Boone, LLP

