Attorney Docket No. 85729-9 **(PATENT)**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination Application of: Robert E. MORLEY JR.

Reexamination Application No. 95/001,618 Group Art Unit: 3992

Filing Date: May 10, 2011 Examiner: RUBIN, Margaret R.

For: Card Reader Device for a Cell Phone and Method of Use

Reexam 95/001,618
Owner Appeal Brief
Exhibit 01

DECLARATION UNDER 37 CFR §1.132 OF ROBERT E. MORLEY, JR. IN SUPPORT OF CONFIRMANCE OF THE PATENTABILITY OF THE CLAIMS OF U. S. PATENTS 7,810,729 and 7,896,248

I, the Declarant, state as follows:

1. My name is Robert E. Morley, Jr., and I reside in University City, Missouri.

2. I am the sole inventor of U. S. Patents 7,810,729 (the " '729 Patent") and 7,986,248 (the " '248 Patent"), which are being reexamined in *inter partes* Reexamination Application Nos. 95/001,618 and 95/001,620, respectively. In this Declaration, I refer to my '729 and '248 Patents jointly as "My Patents".

3. I am a member of REM Holdings 3, LLC, a Missouri limited liability company (hereinafter referred to as "REM"), having a principal place of business in St. Louis County, Missouri. REM was founded in the fall of 2009.

4. My '729 and '248 Patents have been assigned to REM and REM is now the owner of these patents.

5. I have been a Professor of Electrical Engineering at Washington University in St. Louis since 1981, and I currently hold the title of Associate Professor.

6. I received a Bachelors of Science Degree in Electrical Engineering from Washington University in St. Louis in 1973, a Masters of Science Degree in Electrical Engineering from Washington University in St. Louis in 1975, and a Doctor of Science Degree in Electrical Engineering from Washington University in St. Louis in 1977.

7. Besides my '729 and '248 Patents, I am a named inventor on at least seven (7) other U.S. patents that relate to the subject matter of reading a magnetic stripe on a magnetic stripe payment card, often referred to generally as a "credit card". These additional patents are U.S. Patent No. 5,920,628, U.S. Patent No. 6,098,881, U.S. Patent No. 6,431,445, U.S.

Patent No. 6,899,269, U.S. Patent No. 7,210,627, U.S. Patent No. 7,377,433, and U.S. Patent No. 7,478,751.

8. I am also a named inventor on at least four (4) U.S. Patents that relate to the subject matter of digital hearing aids. These patents are U.S. Patent No. 4,548,082, U.S. Patent No. 5,111,419, U.S. Patent No. 5,225,836, and U.S. Patent No. 5,357,251.

9. Mr. James McKelvey came to me in February, 2009 and disclosed an idea for processing credit card transactions using an iPhone as the host device. Mr. McKelvey told me that he was going to take a picture of the credit card using the camera in the iPhone and then to optically character read (OCR) the credit card number and then use this information to process the transaction. I told Mr. McKelvey that I believed it would be possible to design an inexpensive device that would sense the data stored on the magnetic stripe of a credit card and communicate a signal indicative of the data on the card to an iPhone (or other host device) via the headset jack's microphone input.

10. I then set about to devise or invent a credit card reader that would work with the then current population of smart phones, including the iPhone.

11. I designed, built and successfully tested a prototype reader that embodied the requirements of at least claims 1 – 6 of my '729 Patent, and of at least claims 1 – 6 of my '248 Patent.

12. My prototype reader successfully sensed the data stored on the magnetic stripe of a credit card and produced a signal indicative of the data on the credit card. This prototype reader included the signal setting device described by the claims of My Patents here being reexamined.

13. Mr. McKelvey and Jack Dorsey founded Square, Inc. (hereinafter referred to as "Square") in 2009.

14. Mr. Dorsey is a co-founder of Twitter.

15. I had initial discussions with Square about me assigning to Square my patent application(s) and my inventions relating to my readers and methods that are disclosed in my

'729 Patent. However, we could not agree on the financial arrangements for Square to acquire an assignment of my inventions and patent rights. Consequently, in the fall of 2009, I decided to retain all right, title and interest in and to My Patents and to my inventions relating to card readers and methods, as generally disclosed in My Patents. I have not granted any ownership or licensing interest in My Patents to Square.

16. During the time that I was discussing assigning My Patents to Square, I developed and provided prototypes of my reader to Square. Despite not having REM's or my permission, Square copied my invention and put it into production.

17. Square began taking orders for its readers on about May 11, 2010. (See Exhibit A, http://latimesblogs.latimes.com/technology/2010/05/square.html).

18. According to press reports, as of about May 23, 2011, Square had shipped about 500,000 card readers, had reported about 1 million transactions in May, 2011, and was processing about $3 million in mobile payments per day. See http://pulse2.com/2011/05/23/square-ships-about-500000-card-readers-and-launches-square-card-case/, a copy of which is attached as Exhibit B.

19. I have also performed the methods practiced by Square's subscribers, as directed by Square in Square's Pricing information given to its users, available at https://squareup.com/pricing. Square's users are contractually obligated to pay a fee of 2.75% of the transaction amount when they swipe a card with the Square reader. However, Square's Pricing information states "If you enter credit card numbers manually, Square costs 3.5% + 15¢ per transaction." A copy of Square's Pricing information is attached as Exhibit C.

20. I have used the Square reader in accordance with the Square User Agreement available at http://squareup.com/legal/ua. If Square's users want to take advantage of the above-noted 2.75% transaction fee, Square's users are contractually obligated to swipe their credit card in the Square reader.

21. In summary, I have examined and tested the commercial embodiment of Square's reader that Square is shipping free of charge to its subscribers. I have determined that Square's reader and Square's method of having its users use this reader have all of the elements of claims 1 – 9 and 11 - 22 of my '729 Patent, and all of the elements of claims 1 – 6 of my '248 Patent.

22. In late-June, 2011, Dealbook of the New York Times, (see http://dealbook.nytimes.com/2011/06/29/unprofitable-square-valued-at-1-6-billion/), reported that Square had completed a $100 million financing round lead by Kleiner Perkins Caulfield & Byers, a leading venture capital firm. The financing round valued Square at $1.6 billion. (See Exhibit D, attached).

23. Also stated in Exhibit D, "The company [Square], based in San Francisco, processes almost $4 million in transactions a day for individuals and small businesses ..."

24. In Exhibit D, the photograph on the first page shows the Square reader plugged into the headset jack of an iPhone.

25. It is further pointed out in Exhibit D that "Square, the fast-growing mobile payments company, does not suffer from a lack of buzz. Helmed by Jack Dorsey, one of the founders of Twitter, it is garnering significant attention for its bite-size credit card reader, which facilitates payments on mobile devices."

26. Square knew that I had applied for a patent shortly after my U. S. Patent Application No. 12/456,134, which issued as my '729 Patent, was filed on June 10, 2009. Shortly after my U.S. Published Application No. US 2010/0108762 A1 was published on May 6, 2010, REM notified Square of the publication.

27. Upon information and belief, virtually all of the transactions processed by Square since the issuance of my '729 Patent use the reader and methods described by claims 1 – 9 and 10 – 22 of my '729 Patent. It is further my belief that virtually all of the transactions since the issuance of my '248 Patent use the reader and methods described by claims 1 – 6 of my '248 Patent.

28. On or about December 14, 2009, an article appeared at http://pymnts.com/iphone-payments-smackdown-square-vs-verifone/?art entitled "iPhone Payments Smackdown: Square vs. VeriFone". A copy of this article is attached as Exhibit E.

29. On page 2 of Exhibit E, it is stated that "If this is disruptive technology, it is only on the hardware/terminal side of the business." The "hardware/terminal side of the business" refers to Square's reader, where Square copied my invention.

30. Also on page 2 of Exhibit E is a paragraph that states "We recently interviewed industry expert Mimi Hart, CEO of Magtek, about her first impressions with Square. MagTek has been in the payments space for over 38 years and was the first company to build a swipe reader for use at the POS. **Hart said that what she thought was innovative about the device was that Square had "taken a magnetic tag, the smallest component possible, and instead of trying to decode right at the time where they recovering the signal from, the stripe, they're actually capturing the analog waveform and doing the decode process further down the pipe. That allows them to put a very low-cost product in the market place. That's the innovation**." (Emphasis added.)

31. "Magtek" referred to in the article above is MagTek Inc. of Seal Beach, California. I am familiar with and have worked with MagTek as some of my prior U. S. Patents mentioned in Paragraph 7, above, have been licensed to MagTek. MagTek is a major manufacturer of credit card readers. I have worked with Mimi Hart mentioned in Exhibit E in the past on other credit card reader designs.

32. It is the structure of my reader, as defined in the claims of my '729 and '248 Patents, that enables Square's reader to capture the analog waveform and to decode the analog signal further down the pipe (in the host device), as discussed in Exhibit E.

33. On the first page of Exhibit E is a link to a YouTube video entitled "Jack Dorsey On Square Competitor". This YouTube video may be viewed at http://www.youtube.com/watch?v=sVOzysmxhyM&feature=player_embedded.

34. I have watched and listened to this YouTube video. I know Jack Dorsey, the person interviewed. He is a co-founder of Square and is (or was at the time of the interview) the CEO of Square. Reproduced below is my transcription of a portion of the interview between Michael Arrington (MA) of TechCrunch and Jack Dorsey (JD) of Square beginning at 1:36 of the video, which I attest is accurate to the best of my ability to hear the words spoken on the video:

> MA: What do you think about the hardware, with the way they have the slider on the side?
>
> JD: I like the slider on the side. It looks fairly ergonomic. But uh...
>
> MA: Why didn't you go with something like, you must have considered something like that right?
>
> JD: Because our main focus is not just to speak to the iPhone and to the iPod Touch **but to allow one to take payments from any device.**
>
> MA: Right. **Which is why you needed to go through the microphone.**
>
> JD: **Yep, Yeah. And it also allows it to be extremely cheap.** The hardware is just a little part of what we are doing, um, **but with the audio jack and through the microphone we can make the device very cheap so we can give it away for free.** (Emphasis added).

35. The features of Square's readers that allow it to be "very cheap so we can give it away for free" and to be able to "take payments from any device", as stated by Mr. Dorsey, are that the reader communicates with the host device (a cell phone or the like) with the audio jack and through the microphone port. As stated below in Paragraphs 37 and 38, the Square reader embodies my inventions.

36. Because of the low cost of Square's readers, Square has been able to give away free of charge at least 500,000 of its readers. In this manner, Square has been able to sign up over 500,000 subscribers in such a short time, as stated in Exhibit B.

37. Upon information and belief, based on the Exhibits mentioned above, virtually all of the transactions processed by Square since its inception use the reader and methods described by claims 1 – 9 and 11 – 22 of my '729 Patent, and use the reader described by claims 1 – 6 of my '248 Patent.

38. Further, upon information and belief, based on the Exhibits mentioned above, virtually all of the transactions processed by Square since the issuance of the '248 Patent on March 1, 2011 use the reader and methods described by claims 1 – 6 of my '248 Patent.

39. As noted above, Jack Dorsey is one of the co-founders of Twitter. Square has been very successful in raising venture capital. As reported in Exhibit D, Square, in late June, 2010, completed a $100 million financing round where Square was valued at $1.6 billion. This same article reports that the hope is that Square will reach profitability in 2012 with gross revenue of at least $200 million.

40. Because Square's service fee is about 2.75% of each transaction (See Exhibit C), Square will have to process billions of dollars of credit card transactions in 2012 to realize revenue of $200 million.

41. On information and belief and because the majority of Square's revenue is derived from credit card transactions using my patented readers and my patented methods, Square is a company based on copying and infringing My Patents.

42. There are other mobile credit card readers that do not embody the features of the claims of my '729 and/or '248 Patents that Square could have used. For example, in late 2009, VeriFone Systems, Inc. of San Jose, California ("VeriFone") introduced a mobile payments service and readers for smart phones competing with Square, where the VeriFone service is referred to as "PAYware Mobile". This VeriFone system uses a reader into which an iPhone is slid and connects to the iPhone through the 30 pin docking port of the iPhone, not via the headset jack. (See Exhibit F http://www.paywaremobile.com/en/gallery). Of course, by connecting the PAYware reader to the phone via the docking port of the iPhone instead of via the headset jack, the cost of the PAYware reader is considerably more expensive than my patented reader.

43. Intuit, Inc. of Mountain View, CA launched its "GoPayment" credit card payment system using mobile phones in early 2010. The Mophie reader communicated through its docking port to the cell phone. One of the card readers offered by Intuit was its Mophie reader that cost $79.95, as shown in Exhibit G.

44. Upon information and belief, the Mophie reader was not successful in the marketplace. As shown in Exhibit H, in about early 2011 Intuit recently switched to a reader that is much less costly such that Intuit has been able to give the new reader to its users free of charge. (See Exhibit I).

45. The new reader that Intuit is now giving away free of charge plugs into the headset jack of an iPhone or any other such host device. This allows the new reader to be of a much lower cost than the Mophie reader and be compatible with a multitude of mobile devices.

46. The new Intuit reader that is being given away free of charge is manufactured by Roam Data of Boston, MA, as shown in Exhibits H - J. I have inspected this Roam Data reader, as depicted on the second page of Exhibit J, and it has all of the elements of at least claims 14 – 17 of my '248 Patent.

47. I am also aware of so-called "Uni Mag Mobile Mag Stripe Readers" offered by ID Tech of Cypress, California. (See Exhibit K, http://www.idtechproducts.com/products/104.html). These Uni Mag readers communicate to the host device via the headset jack of the host device.

48. I have examined at least one of these ID Tech Uni Mag readers and I have determined that it has all of the requirements of at least claims 14 - 17 of my '248 Patent.

49. Roam Data and ID Tech have copied my inventions.

50. As of about August 11, 2011, press reports indicated that Roam Data has shipped approximately 300,000 readers having all of the elements of at least claims 14 – 17 of my '248 Patent. See http://bostinnovation.com/2011/08/10/roam-data-is-the-leading-provider-of-encrypted-mobile-readers-has-shipped-over-300k-devices/, a copy of which is attached as Exhibit L.

51. As shown in the photographs on page 2 of Exhibit L, the Roam Data reader (shown on the right in the photograph) employs an output jack that plugs into the headset jack of the host device (as shown in the photo on the front page of Exhibit L). In comparison, the Square reader is shown on the left in the photo on page 2 and it employs a similar output jack. I have examined both the Square and the Roam Data readers and I can confirm that the photos on page 2 of Exhibit L accurately show both readers.

52. Because the headset/headphone ports of most cell phones, including the iPhone and Android phones, are the same, my patented reader that communicates with the host device through the headset/headphone port will work interchangeably with different cell phones such that one reader is universal for virtually all phones. Intuit emphasizes this feature of my reader in the photograph on page 2 of Exhibit J showing the reader plugged into the audio output port of several different host devices. In contrast, the multi-pin "hot synch" docking connectors of these phones are of different sizes and configurations such that companies like Square and Intuit offering credit card payment systems must provide a reader specially designed for each phone if the reader is to connect through the hot synch or docking port instead of the headset jack, as required by all of the claims in both my '729 and '248 Patents.

53. The technology of mobile credit/debit card payments is of very recent origin and is a fast advancing technology. So-called "smart phones" have been commercially available for the past 14 years. In 1998, Research In Motion introduced its first Blackberry® wireless handheld computer. (See Exhibit M, http://forums.crackberry.com/general-discussion-f2/timeline-history-research-motion-7162/).

54. It was not until the introduction of the iPhone by Apple, Inc. in 2007 that the capability of such smart phones was fully appreciated. (See Exhibit N, http://en.wikipedia.org/wiki/History_of_the_iPhone).

55. As shown in Exhibit O, Square, using my patented reader, was named by Time magazine as one of the "50 Best Inventions of 2010". It will be noted that in the photo of the Square reader in Exhibit O that the reader plugs into the headset jack of an iPhone. As

previously noted, I have inspected the Square reader, as shown in Exhibit O, and it does embody all of the limitations of claims 1 – 9 and 11 – 18 of my '729 Patent, and claims 1 – 6 of my '248 Patent. Still further, as I have previously stated above, the payment platform discussed in Exhibit O employs the methods defined by claims 19 – 22 of my '729 Patent.

56. Square has filed a U.S. Patent Application entitled "Systems and Methods for Decoding Swipe Signals", which application was published on April 14, 2011 as U.S. Patent Application Publication No. 2011/0084140 A1, a copy of which is attached as Exhibit P. This application is based upon U.S. Provisional Application No. 61/278,930, filed on October 13, 2009, about 5 months after my U.S. Patent Application No. 12/456,134 was filed. As noted above, I had provided Square with prototypes of my reader in the spring/summer of 2009. I have compared the readers shown in Figs. 2 – 6B of Exhibit P to the claims in my '729 and '248 Patents and I confirm that the Square reader shown in Figs. 2 – 6B has all of the elements of claims 1 – 9 and 11 – 18 of my '729 Patent and has all of the elements of claims 1– 6 of my '248 Patent.

57. I have reviewed the various Exhibits and websites listed in my Declaration and I can attest that the copies of these Exhibits and websites attached to my Declaration are true and accurate copies of these websites and that quotes from these websites set out in my Declaration are accurate.

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Further, Declarant sayeth not.

I, the above-named Declarant, hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States.

9/1/11
Date

Robert E. Morley, Jr.
Signature of Declarant
Robert E. Morley, Jr.

List of Attached Exhibits

Exhibit A – *Los Angeles Times*, http://latimesblogs.latimes.com/technology/2010/05/square.html

Exhibit B – http://pulse2.com/2011/05/23/square-ships-about-500000-card-readers-and-launches-square-card-case/

Exhibit C - Square's Pricing, available at https://squareup.com/pricing

Exhibit D - Dealbook of the New York Times, see http://dealbook.nytimes.com/2011/06/29/unprofitable-square-valued-at-1-6-billion/

Exhibit E - "iPhone Payments Smackdown: Square vs. VeriFone"

http://pymnts.com/iphone-payments-smackdown-square-vs-verifone/?art

Exhibit F – VeriFone's PAYware Mobile – http://paywaremobile.com/en/gallery

Exhibit G - Intuit's Mophie Reader pricing – http://mophie.intuit.com

Exhibit H – Roam Data's Universal Secure Mobile Card Reader Solution Chosen by Intuit, Sage, Total Merchant Services, North American Bankcard and Others,

Exhibit I – Intuit GoPayment – Free App & Free card reader.

Exhibit J – Roam Data Secure Swipers Distributed With Intuit GoPayment in Verizon Retail Stores.

Exhibit K - ID Tech Mobile Readers

Exhibit L – Roam Data has shipped 300,000 readers.

http://bostinnovation.com/2011/08/10/roam-data-is-the-leading-provider-of-encrypted-mobile-readers-has-shipped-over-300k-devices/

Exhibit M - History of Blackberry - http://forums.crackberry.com/general-discussion-f2/timeline-history-research-motion-7162/

Exhibit N - http://en.wikipedia.org/wiki/History_of_the_iPhone

Exhibit O – Time magazines "The 50 Best Inventions of 2010"

Exhibit P – U.S. Patent Application Publication US 2011/0084140 A1, published April 14, 2011.