Abstract—The United States Patent and Trademark Office (USPTO) erred in granting U.S. Patent 9,904,924 to Square Inc. U.S. Patent 9,904,924 claims a system for the transfer of funds from a sender to a recipient via email. However, this system was disclosed prior to the U.S. Patent 9,904,924’s effective filing date of March 15, 2013. Claims 1 and 9 were disclosed by U.S. Patent 8,762,272 and U.S. Patent 8,725,635 while claim 20 was taught by a combination of U.S. Pat. App. Publication 2009/0006233, U.S. Patent 10,395,223, and U.S. Patent 10,515,345, thereby rendering at least one of the claims of U.S. Patent 9,904,924 invalid.

I. INTRODUCTION

U.S. Patent 9,904,924 (henceforth referred to as “the ’924 patent”), submitted by Dorsey et al. and filed by Square Inc. (henceforth referred to as “Square”), was granted on February 27, 2018 by the U.S. Patent and Trademark Office (USPTO). This paper describes the evidence that the USPTO erred in granting the ’924 patent.

A patent is a document granted by the government to an inventor and upheld by Article 1, Section 8, Clause 8 of the United States Constitution. A patent gives an applicant the right to prevent others from making, using, or selling their invention, where an invention is defined as a “process, machine, manufacture, or composition of matter, or any new and useful improvement thereof,” as defined by 35 U.S.C. § 101. Patents protect an invention for a limited period of time, usually twenty years according to 35 U.S.C. § 154. Until the patent expires, others can only gain revenue from the invention with the inventor’s permission. In exchange for this protection, applicants are required to disclose the details about how their invention works. When the patent expires, the public is permitted to make, use, or sell the invention without the inventor’s permission.

For an inventor to patent their invention, there are some requirements that must be fulfilled as per the U.S. Code. One requirement for patentability, as stated under 35 U.S.C. § 101 is that the invention must be useful, defined as having “a specific, substantial, and credible utility.” A patent will not be granted if the invention is a judicial exception, and therefore outside the four statutory categories of an invention. These include “abstract ideas, law of nature, and natural phenomena,” as stated under 35 U.S.C. § 101.

Another requirement for an applicant to be granted a patent is that the invention must be novel. The USPTO states, in its patent examiner training document, that a patent will not be issued if “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention” under 35 U.S.C. § 102 (post AIA). If the claimed invention was already patented or in the public domain before the effective filing date of the application, the

1A patent owner must pay maintenance fees of varying amounts at different times in order for their rights as owner of the patent to remain valid, as stated under 35 U.S.C § 41.

2A patent can also enter the public domain if it is found invalid by a court or the USPTO, if the owner fails to pay maintenance fees, or if the owner decides to disclaim one or several entire claims of the patent.

3The effective filing date of a patent is the earlier date between the actual date the application was filed or the filing date of the patent’s earliest application.

4The America Invents Act (AIA), passed in September of 2011, changed the patent application system from a first-to-invent system to a first-inventor-to-file system. Prior to this law, patents were granted to the individual who developed the invention first, rather than the individual who filed their application first.
initial patent is called prior art\(^5\). In this case, the invention is not considered novel and the applicant will not be granted a patent.

Further, for a patent to be granted, the claimed invention at the time it is invented must not be obvious to “a person having ordinary skill in the art” under 35 U.S.C. § 103 (post AIA). The claims\(^6\) between the applicant patent and prior art must be different enough that a professional in the field would not find the changes made between the two obvious. In order to argue that an invention is obvious, the examiner must identify evidence of a “teaching, suggestion, or motivation to combine references” (35 U.S.C. § 103). However, examiners are permitted to use their own judgement in determining obviousness, so long as they provide a reasoned explanation for their decision while avoiding vague generalizations.

Additionally, for a patent to be granted, the applicant must include a written description of the invention. Under 35 U.S.C. 112, the written description must state the “manner and process of making and using it” in concise language such that a person of ordinary skill in the art would be able to make it. The claim language must be definite and clearly define the subject matter that the applicant deems their invention. This ensures that the scope of the invention is clearly stated and that what is considered infringement of the invention is described plainly.

When an applicant files for a patent, a patent examiner reviews the application and is given twenty hours to determine whether the patent is considered an invention rather than a judicial exception, novel, non-obvious, and written in clear, concise language. The examiner searches for prior art within current patents and inventions subject to the public domain. After twenty hours, the examiner decides whether or not the applicant should receive a patent for the invention. If the examiner decides against granting the patent, the applicant can contest this through a process referred to as patent prosecution.

II. TECHNOLOGY OF U.S. ’924 PATENT

Many financial transfer methods, such as physically depositing checks or using third parties for wire transfer, are time-consuming and potentially insecure. The ’924 patent, submitted by Square and issued to Dorsey et al., purports to present a solution to this problem using an email-based system (henceforth referred to as “the Dorsey System”) and a computer-implemented method (henceforth referred to as “the Dorsey Software”) to securely and quickly transfer funds between users.

Square, the assignee of the ’924 patent, is a financial service and mobile payment company founded in 2009 by Jack Dorsey\(^7\) and Jim McKelvey (D’Onfro). Square’s products...
The Dorsey System supports two types of transactions. It can be used for payments, where a sender sends funds to a recipient, and invoices, where the sender requests funds from a recipient. In both cases, the software initially follows the same process. After identifying the payment amount, the Dorsey Software uses a server to transfer the amount from sender to recipient via email or sends a request for funds in the form of an email invoice to the recipient. The process executed by the Dorsey System is graphically illustrated in Figure 2 of the '924 patent (reproduced below in Figure 4).

Banks have attempted to assuage the problem of wire transfer payments by creating websites and applications that allow customers to deposit money online. Other third-party companies also offer mobile payment exchange systems, such as PayPal, Venmo, and Google Wallet. These exchanges happen through an application or website but have similar functions to the methods claimed by Square in the '924 patent.

III. FAMILY HISTORY OF THE '924 PATENT

The '924 patent is the sixth patent in a chain of continuations and continuations-in-part. The '924 patent also has a continuation filed on February 26, 2018, with application number 15/905,596. As of this writing, the application is still pending before the USPTO. A family tree diagram of the '924 patent is shown in Figure 5 and also represented in Table I. The continuation-in-part patent is represented as a circle in Figure 5.

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8A continuation is a child patent which uses the same specification as the original parent patent, but recites different claims (e.g. a continuation may describe a different implementation of the same invention).

9Parent patents include similar general information to their child patent. However, the claims of the parent patent describe a different variation of the invention (e.g. one could claim a system that works through an app, while another could claim the same or a similar system that works through a website).
TABLE I
THE PATENT FAMILY HISTORY OF THE ’924, INCLUDING THE APPLICATION NUMBERS OF FAMILY MEMBERS, THEIR FILING DATES, THEIR RELATIONSHIP TO THE ’924 PATENT AND WHETHER THEY ARE A CONTINUATION OR A CONTINUATION-IN-PART.

<table>
<thead>
<tr>
<th>Relationship to the ’924 Patent</th>
<th>Application Number</th>
<th>Filing Date</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Great Great Great Grandparent</td>
<td>8,606,703</td>
<td>March 15, 2013</td>
<td>Continuation</td>
</tr>
<tr>
<td>The Great Great Grandparent</td>
<td>9,536,232</td>
<td>October 30, 2013</td>
<td>Continuation</td>
</tr>
<tr>
<td>The Great Grandparent</td>
<td>9,449,321</td>
<td>April 23, 2014</td>
<td>Continuation-in-part</td>
</tr>
<tr>
<td>The Grandparent</td>
<td>9,202,207</td>
<td>May 7, 2014</td>
<td>Continuation</td>
</tr>
<tr>
<td>The Parent</td>
<td>9,767,458</td>
<td>November 20, 2015</td>
<td>Continuation</td>
</tr>
<tr>
<td>The Child (pending approval)</td>
<td>15/905,596</td>
<td>February 26, 2018</td>
<td>Continuation</td>
</tr>
</tbody>
</table>

A. U.S. Patent 8,606,703: The Great Great Great Grandparent

The earliest patent in the priority chain of the ’924 patent, U.S. Patent 8,606,703 (henceforth referred to as “the ’703 patent”), was filed on March 15, 2013 and granted on December 10, 2013. The four independent claims (claims 1, 9, 11, and 17) of the ’703 patent describe methods of transferring money between two users of the Dorsey System, as well as the computers and storage devices that comprise the Dorsey System. All four independent claims can be broken down into a similar sequence of steps: 1) receiving an email containing user input, 2) identifying a financial account associated with the sender of the email, 3) identifying a financial account associated with the recipient of the email, 4) analyzing the email to determine the specified payment or invoice amount, and 5) initiating the transfer of money between accounts (with the exception of claim 9, which replaces the initiating step with steps generating and sending an invoice email containing a confirmation link to initiate the transfer). The ’703 patent differs from the ’924 patent in that the claims of the ’703 patent do not include the error-checking methods recited in the dependent claims of the ’924 patent.

B. U.S. Patent 9,536,232: The Great Great Grandparent

The child of the ’703 patent, U.S. Patent 9,536,232 (henceforth referred to as “the ’232 patent”), was filed on March 15, 2013 and granted on January 3, 2017. The three independent claims (claims 1, 6, and 11) of the ’232 patent describe methods of transferring money between two users of the Dorsey System and the computers and storage devices that comprise the Dorsey System. All three independent claims can be broken down into a similar sequence of steps: 1) receiving an email containing user input (to which claim 11 also generates and sends an email specifying the payment amount), 2) determining that the email is a request for money to be transferred, 3) identifying email addresses associated with the two users, 4) identifying a financial account associated with the sender of the email, 5) identifying a financial account associated with the recipient of the email, 6) determining the payment amount, 7) sending an email confirmation that includes a link to initiate the transfer, and 8) initiating the transfer if the confirmation link is selected. What differentiates the claims of the ’232 patent from the ’924 patent is its discussion of identifying the financial accounts of the sender and the recipient using stored data. The claims of the ’232 patent recite how the Dorsey System uses the users’ email addresses to identify the financial information associated with them, a process that is not claimed in the ’924 patent.

C. U.S. Patent 9,449,321: The Great Grandparent

The child of the ’232 patent, U.S. Patent 9,449,321 (henceforth referred to as “the ’321 patent”), was filed on April 23, 2014, as a continuation-in-part of the ’232 patent. The ’321 patent adds new Figures 8-16 (Figure 8 from the ’924 patent was reproduced in Figure C). New figure 8 includes a sequence diagram that shows an example process of exchanging money using Square’s technology, and new Figure 15 is a sequence diagram showing how the Dorsey Software deals with errors. New Figures 9 and 10 illustrate the user interface when generating and editing an email, and new Figure 12 shows

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10 An independent claim includes all descriptions and limitations necessary to define the invention and does not refer to any other claim. It is the broadest definition of the invention, which may then also be defined in narrower terms by dependent claims.

11 A continuation-in-part includes all of the information included in the previous patent as well as new information. Any information that was included in the original patent, the ’703, is dated with the original patent’s filing date of March 15, 2013. The new information added by the ’321, however, is dated with the filing date of the continuation-in-part, which is April 23, 2014.
an example of a generated email message. New Figures 11, 14, and 16 are flow charts describing the transfer of money both with and without the use of a link and processing errors.

However, the most significant addition made by the '321 patent is that the claims are directed to the way Dorsey’s System manages errors rather than focusing on the details of the process of transferring money.

The claims of the continuation-in-part differ from the claims of its previous counterpart and the '924 patent’s claims as they do not describe the process of transferring money in detail. Instead, they focus specifically on the way the Dorsey System manages errors. Independent claim 1 details the Dorsey System’s process of dealing with errors, while the following seven dependent claims specify what these errors might entail.

An error will be detected if the Dorsey System is unable to find the recipient’s financial information in the Square database or identify a payment amount in the email. An error will also be displayed if the payment amount is “not within a valid range,” ('321, col. 24, l. 40) not written with the correct syntax, or if there is more than one monetary amount included in the email.

In response to detecting any of these errors in the email, the Dorsey System generates an email to the sender explaining the error and requesting that the sender correct it. Once the Dorsey System receives the corrected email, it generates a confirmation link and emails it to the sender. When the link is selected, it alerts the Dorsey Software to initiate the transfer of funds between the sender and the recipient’s accounts.

Since it was first disclosed in the '321 patent, this process is considered to have been invented by Dorsey et al. on April 23, 2014, unlike the information that was disclosed on March 15, 2013. Therefore, if evidence is presented that information describing the same process of dealing with errors was publicly available prior to the date the '321 patent application was filed in 2014, those claims of the patent would become invalid.


The child patent of the '321 patent, U.S. Patent 9,202,207 (henceforth referred to as “the '207 patent”), was filed on May 7, 2014 and granted on December 1, 2015. The four independent claims (claims 1, 2, 11, and 12) of the '207 patent are directed to methods of transferring money between two users of the Dorsey System. The first two independent claims can be broken down into a similar sequence of steps: 1) receiving an email containing user input, 2) generating another email containing the specified payment amount and a confirmation link to a network resource associated with the payment link, and 3) sending the generated email to the recipient. The last two independent claims can also be broken down into a similar sequence of steps: 1) receiving an email containing user input, 2) generating a confirmation link, 3) generating another email containing the confirmation link and the specified payment amount, 4) sending the generated email to the recipient, 5) receiving an indication that the recipient selected the confirmation link, to which the Dorsey System 6) recognizes the recipient’s authorization of the transfer, 7) accesses association data from a database (with the exception of claim 11, which excludes this step), and 8) initiates the transfer. The claims of the '207 patent differ from those of the '924 patent as the '207 patent’s claims do not refer to configuring the network resource, do not detail the process of creating the link to the network resource, nor do they have any steps in place for error-checking.


The child patent of the '207 patent and the direct parent of the '924 patent, U.S. Patent 9,767,458 (henceforth referred to as “the '458 patent”), was filed on November 20, 2015 and granted on September 19, 2017. The six independent claims (claims 1, 7, 17, 18, 20, and 22) describe methods of transferring money between two users of the Dorsey System. Claims 1 and 20 describe a “computer-implemented method” that can be broken down into a similar sequence of steps: 1) receiving an email from the sender specifying the payment amount and the recipient’s email address, 2) generating a confirmation link that provides access to a network resource associated with the system, 3) generating a second email containing the specified payment amount and the confirmation link, 4) sending the email to the recipient, and 5) receiving indication that the recipient has clicked on the email. Claims 18 and 22 detail a computer system with a memory that can store instructions for: 1) receiving an indication of the first email being sent from the sender, 2) generating the confirmation link, 3) generating the second email, 4) receiving an indication that the recipient clicked on the link, 5) considering the selection of the link authorization to initiate the transfer, and 6) initiating the transfer. Claims 7 and 17 describe a user device with a memory capable of completing the same steps detailed for the computer system of claims 18 and 22.

The claims of the '458 patent differ from those of the '924 patent in that the '458 patent’s claims focus on the Dorsey System’s use of user device memory, particularly its ability to store information detailing instructions on how to complete the transfer of funds. The '458 patent also discusses how the user device sends the email it generates not only to the recipient but also to a server connected to the payment service system.

IV. SUMMARY OF THE CLAIMS OF THE '924 PATENT

Dorsey et al. assert ownership over the described system through a series of twenty claims. Independent claims 1, 9, and 20 all relate to features related to the transfer of funds. The claims differ, however, in that claim 1 and 9 relate to the operation of the Dorsey System and the implementation of the Dorsey Software to transfer funds, while claim 20 relates to the Dorsey Software’s process of generating an activation link to initiate the transfer of money.

A. Summary of Claims 1 Through 8

Independent claim 1 and its dependent claims 2 through 8 are directed to a computer-implemented method that sends a payment from a sender to a recipient via electronic message. The computer-implemented method of claim 1 includes three
elements: 1) receiving a user input; 2) configuring a network resource that is accessible via a link; and 3) transmitting a message to the user that contains the link to the configured network resource.

In the receiving step of claim 1, the Dorsey System receives a recipient’s electronic address and a payment amount transferred from a sender to the recipient. Both the sender and recipient have financial accounts that are connected to the Dorsey System.

Next, the configuring step of claim 1 uses the phrase “network resource,” associated with the Dorsey System. Under U.S. patent law, an applicant is permitted to be their own lexicographer\textsuperscript{12}, provided the specification\textsuperscript{13} teaches a person with ordinary skill in the art\textsuperscript{14} how to create a webpage that users can visit to confirm their transactions. It further details this approach by reciting that the sender’s financial account is linked to their email, which utilizes links to the “network resource [which is] associated with a payment service system” to send the payment information to the recipient’s email (‘924, col. 2, ll. 14–15). When activated, the link uses the network resource to transfer the requested funds to the recipient’s financial account.

Finally, in the transmitting step, the Dorsey System sends an email with a link to the network resource through the sender’s email to the recipient, who can use it to activate the transfer of funds. Once the link is activated, the Dorsey System initiates a transfer between the sender and the recipient’s financial accounts.

Dependent claim 2 depends from claim 1, requires that the computer-implemented method identifies any errors in the recipient’s address and transmits a request to the network resource to fix it.

Dependent claim 3 depends from claim 2 and therefore incorporates all of the limitations of both claim 2 and claim 1. Dependent claim 3 further requires the computer-implemented method “correct the recipient electronic address prior to configuring the network resource” (‘924, Col. 23 L66–67). A new network resource must be configured for each transaction, and will not be configured until the error in the recipient address is rectified.

Dependent claim 4 depends from claim 1 and states that the electronic message sent between the sender and the recipient is in the form of an email that includes the payment amount.

Dependent claim 5 depends from claim 1 and describes an activatable link included in the email that allows for access to the network resource.

Dependent claim 6, which depends from claim 1, states that servers identify sender and recipient accounts based on association data within the payment transfer system.

Dependent claim 7, which depends from claim 6 and, therefore, also dependent on claim 1, states that the Dorsey System associates email addresses and user accounts using the association data stored in the database.

Finally, claim 8 describes how the system distinguishes a particular email address and a specific account from those of other users. This occurs in a transaction conducted by a user with another user or an unregistered user.

Thus, claim 1 of the patent recites how the Dorsey System uses network resources to send funds between bank accounts using emails through a server. Its dependent claims 2 through 8 further specify how the system performs error-checking and storage of user data on a central server. Dorsey’s System sets up a resource for both the person sending funds and the person receiving them. If there is an error in one of the emails, Dorsey’s System fixes the mistake before setting up the network resource. Dorsey’s System also stores data about both users and associates it with accounts that both people have set up with the company. From there, one person can send an email requesting to transfer funds or receive them, and they will be emailed back with a link that can take them to the resource and allow them to complete the transfer.

B. Summary of Claims 9 Through 19

Independent claim 9 and its dependent claims 10 through 19 are directed to an email-based method for the transfer of money. The computer-implemented method of claim 9 includes three steps: 1) receiving a user input; 2) generating an electronic message with the payment amount and a link to a network resource; and 3) sending an email message to the user that contains the link to the configured network resource.

In the receiving step of claim 9, the method includes using electronically receiving specifications regarding the recipient’s email address and the sender’s desired payment amount.

In the generating step of claim 9, the method includes using the input to generate an email to be sent to the recipient containing the payment amount and a link to a uniquely configured network resource that allows the recipient to activate the transfer of money. This link is further narrowed in claim 20.

Finally, in the sending step of claim 9, the method includes sending the email to the recipient, who can activate the transfer of funds. Once the link is activated, the financial accounts associated with the sender and recipient’s email addresses are identified and a request to transfer funds is submitted.

Dependent claim 10, which depends from claim 9, requires that the computer-implemented method identify any errors in the recipient’s address and transmit a request to the network resource to fix it.

Dependent claim 11 depends from claim 10 and therefore incorporates all of the limitations of both claim 10 and claim 9. Dependent claim 11 further requires the computer-implemented method “correct[] the recipient electronic address prior to configuring the network resource.” A new network resource must be configured for each transaction, and will

\textsuperscript{12}See Manual of Patent Examining Procedure Section 2111-Claim Interpretation; Broadest Reasonable Interpretation.

\textsuperscript{13}The patent specification is a written or pictorial depiction of the invention being patented.

\textsuperscript{14}A person of ordinary skill in the art is legal terminology for someone who has a basic understanding of the field in question.
not be configured until the error in the recipient address is rectified.

Dependent claim 12, which also depends from claim 10, is identical to claim 11 and adds no further limitations on claim 9.

Dependent claim 13 depends from claim 9 and requires that the electronic message sent between the sender and the recipient is in the form of an email that includes the payment amount.

Dependent claim 14 depends from claim 9 and requires an activatable link be encoded with a sender email address and the recipient email address.

Dependent claim 15, which depends from claim 9, requires that the server identify the sender and recipient accounts based on association data stored in a database associated within the payment transfer system.

Dependent claim 16, which depends from claim 15 and, therefore, also dependent on claim 9, states that the Dorsey System associates email addresses and user accounts using the association data stored in the database.

Finally, claim 17 describes how the system identifies a particular email address and a specific account from those of other users. This occurs in a transaction conducted by a user with another user or an unregistered user.

Dependent claim 18, which depends from claim 9, is identical to claim 10. Likewise, claim 19, which also depends from claim 9, is identical to claim 13. Neither claim adds further limitations on claim 9. Thus, it is evident that multiple mistakes were overlooked during the examination of the ‘924 patent application. This suggests that the patent’s resemblance to prior inventions may have been neglected or gone unnoticed.

Thus, claim 9 of the patent describes how the Dorsey System transfers money between two users via email. Its dependent claims 10 through 19 specify methods for error-checking and user data stored on a central server. The Dorsey System sets up a network resource for both the person sending funds and the person receiving them. If there is a mistake in one of the emails, the Dorsey System fixes the error before setting up the network resource. The Dorsey System also stores data about both users and associates it with accounts that both people have set up with the company. From there, one person can send an email requesting to transfer funds or receive them, and they will be emailed back with a link that can take them to the resource and allow them to complete the transfer.

C. Summary of Claim 20

Independent claim 20 describes the purpose of the Dorsey Software as taking input from an electronic message and using it to generate a link. Not utilized when the system has the financial information of both users, the operation of the Dorsey Software can be described in three steps: 1) receiving a request for a link to authorize payment, 2) generating the link, and 3) transmitting it to the recipient who, upon activation, can receive funds.

In the receiving step, an electronic message from a user is interpreted as a request for a link to complete a transaction. The electronic message is inspected and the sender’s email address, the recipient’s email address, and the payment amount are identified.

In the generating step, the Dorsey Software generates a link that, when activated, gives instructions to the software to transfer the payment amount from the account associated with the sender’s email address to the account associated with the recipient’s email address.

Lastly, in the transmitting step, the Dorsey Software utilizes the sender’s device to forward a message with the link to the recipient. Figures 14 and 16 in the patent outline indicate that when the link is clicked on by the recipient, in the case that financial information is needed, the link brings users to a webpage that prompts them to enter their financial information and authorize the transaction. If an invoice is requested, the link asks the recipient to authorize the transaction. Claim 20 describes that by inputting their information, the recipient signals the software to complete the transaction between the sender’s account and the recipient’s account.

Thus, claim 20 describes the process of generating a link that is sent to the recipient via email. The link is generated by the Dorsey Software when it receives an email containing a sender’s email address, a recipient’s email address, and a payment amount. It is emailed to the recipient through the sender’s device. When selected, the link brings the user to a webpage where they can approve the payment. This link’s function is to allow the recipient to authorize the transaction requested by the sender and enable the recipient to enter their financial information to complete the transaction.

V. Prosecution History of the ‘924 Patent

The ‘924 patent application was filed on August 8, 2017 and issued on February 27, 2018. The duration of the filing period was six months and two weeks. In contrast, the average filing period of utility patents is 25.6 months. This patent was granted under the TrackOne prioritized examination program\(^\text{15}\) (requested on August 8, 2017, and issued on September 26, 2017). The first-named inventor of the patent is Jack Dorsey, and the applicant is Square. After reviewing the patent’s filing history using the USPTO File Wrapper, two main dates were found with notes to be considered.

Filed on October 17, 2017, was a document titled, “Request for Corrected Filing Receipt.” This request made it so that the title of the patent could be changed from “Transferring Money Using Email” to Transferring Money Using Electronic Messages.”

Finally, on October 30, 2017, there were multiple files of interest to this project. First, in the document “Examiner’s search strategy and results” was a list of the search queries made by the examiner. The entirety of searches recorded was made in PubEAST (Public Examiner’s Automated Search Tool), and a total of ten search queries were made. Based on the timestamps on these queries, a total of 1 hour and

\(^{15}\)The USPTO’s TrackOne Prioritized Examination program allows inventors to decrease the filing time for their parents by paying a fee.
21 minutes was spent identifying possible prior art, even though examiners are allotted 20 hours to process the patent (including conducting a detailed search for prior art). Next, in the document “List of references cited by examiner,” there is only one new reference listed. Finally, the document titled “Search information including classification, databases and other search related notes” provides all of the searches made by the examiner. This list consisted of two items: 1) Reviewed parent applications and 2) PubEAST Patent Database search.

A. Effective Filing Date\textsuperscript{16} of the ’924’s Claims

Since the ’321 patent is a continuation-in-part of the ’232 patent and therefore adds information not included in the original ’703 patent, certain claims of the ’924 patent are entitled to the filing date of the ’703, March 15, 2013, while other claims are only entitled to the later filing date of the ’321, April 23, 2014. Since the ’321 patent adds the process of handling errors that was not previously described in any of the parent applications, the claims of the ’924 patent that pertain to error detection and handling of errors are only entitled to the earlier effective filing date of the ’321. As claim 3 depends from claim 2 and claims 11 and 12 depend from claim 10, those claims are not entitled to the earlier filing date either. These claims include claims 2, 3, 10-12, and 18 and, therefore, those claims have an effective filing date of April 23, 2014, the filing date of the ’321 patent. The rest of the claims do not pertain to error detection or correction and therefore have the earlier effective filing date of the original patent, March 15, 2013.

VI. Search Method For Prior Art

In order to invalidate the claims of the ’924 patent under 35 U.S.C. § 102 or 35 U.S.C. § 103, prior art references are needed. Prior art is defined by the USPTO in its patent training document as “references or documents which may be used to determine novelty and/or non-obviousness of claimed subject matter in a patent application” (Mathew 5). It is the job of the patent examiner to search for prior art. The art must be prior to an applicant filing an application and can be patented either in the US or abroad, publicly available on the internet or paper distributions, or of public knowledge. In the case of the ’924 patent, no prior art was identified and filed.

Our first step in identifying prior art was to utilize the Google Patents “Find Prior Art” and “Similar” search tools. Both tools were a useful starting place as they were directly linked to the ’924 patent on its Google Patent page and allowed for identifying patents similar in concept. The “Find Prior Art” tool used keywords (in this case, the words recipient, sender, account, payment, and email) and set the search for a priority date before March 15, 2013. Using these tools, we were able to identify possible candidates that could invalidate the claims of the ’924 patent.

Another method to identify prior art was an independent search using keywords extracted by artificial intelligence by the third party service cortical.io. The words used for this search were email, sender, user, payment, message, device, account, server, card, and computer. These words were then input into Google Patents to identify more possible prior art candidates.

After identifying possible candidates of prior art, the candidates were compared on the grounds of semantic similarity using artificial intelligence through cortical.io. Semantic similarity is the measurement of how close ideas or terms are based on the distance between the likeness of compared definitions. Candidates were compared to the ’924 patent, and the percentage of similarity between them was output by cortical.io. Figure 6 is an example of one of the semantic similarity comparisons made between the ’924 patent and U.S. Patent 8,762,272. It is noted by the authors of this paper that semantics cannot capture the entirety of a concept of a product, but is an indicator that the patent could be used to invalidate the ’924 patent.

\textsuperscript{16}The effective filing date of a patent is either its actual filing date or the filing date of its earliest application, whichever is earliest.

\textsuperscript{17}Anticipation is when one prior art reference describes all aspects and/or limitations of a claim.
A. Invalidating Claims 1 and 9 of the ‘924 Patent In View of U.S. Patent 8,762,272

1. A computer-implemented method for causing funds to be transferred between a recipient and a sender of an electronic message, comprising:
   receiving, by an electronic application executed by a user device associated with the sender, a user input that specifies a recipient electronic address and a payment amount to be transferred between a recipient account associated with the recipient and a sender account associated with the sender, wherein the recipient account and the sender account are associated with a payment transfer system;
   configuring, by the payment transfer system, a network resource associated with the payment transfer system and accessible via a link activatable at a user device associated with the recipient,
   wherein the link is displayed for activation in an application on a recipient user device associated with the recipient after receipt by the user device associated with the recipient of an electronic message; and
   transmitting, by the electronic application executed by the user device associated with the sender, the electronic message to the recipient electronic address, wherein upon receiving an indication that the recipient activated the link to access the network resource, a server associated with the payment transfer system initiates a transfer of the payment amount between the recipient account and the sender account.

9. A computer-implemented method for causing funds to be transferred between a recipient of an electronic message and a sender of the electronic message, comprising:
   receiving, by an electronic application executed by a user device associated with the sender, a user input that specifies a recipient electronic address and a payment amount to be transferred between a recipient account associated with the recipient and a sender account associated with the sender, wherein the recipient account and the sender account are associated with a payment transfer system;
   generating, by the electronic application executed by the user device, an electronic message that includes the payment amount, wherein the electronic application includes a first instance of a link to a network resource associated with the payment transfer system, wherein a second instance of the link is for activation in an electronic application on a user device associated with the recipient; and
   sending, by the electronic application executed by the user device associated with the sender, the electronic message for the recipient, wherein upon receiving an indication that the recipient activated the second instance of the link, a server associated with the payment transfer system identifies the sender account and the recipient account and initiates a transfer of the payment amount between the recipient account and the sender account.

Fig. 7. Claim 1 of the ‘924 patent.

Fig. 8. Claim 9 of the ‘924 patent.

Claims 1 and 9 of the ‘924 patent lack novelty under 35 U.S.C. § 102 based on the teachings of U.S. Patent 8,762,272 (henceforth referred to as “the ’272 patent”). 35 U.S.C. § 102 states that a patent is invalid if “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention”. As illustrated in Appendix A, the ’272 patent reference teaches, inherently or expressly, each and every element of claims 1 and 9. Therefore, the USPTO erred in granting a patent for claims 1 and 9 of the ’924 patent.

Figure 7 above provides the text from claim 1 of the ’924 patent describing the operation of part of the Dorsey System in a series of steps. To demonstrate the invalidity of claim 1 based on prior art, each of its steps must also be found to be disclosed by, or obvious over disclosures in, the prior art reference, as in the following paragraphs.

U.S. Patent 8,762,272, titled “A computer-implemented method for sending payments by email,” was filed on December 26, 2013, by Cozens et al. and applicant Google Inc., but has an effective filing date of December 27th, 2012.

Claim 1 of the ’924 patent consists of three parts: receiving a user input, configuring a network resource accessible via a link, and transmitting a message to the user that contains the link to the configured network resource. Appendix A describes the receiving step of claim 1 of the ’924 patent in numerals ii.a–iii.c, the configuring step in numerals iii–iv, and the transmitting step in numerals vi–vii.

The receiving step of claim 1 of the ’924 patent consists of three substeps, described by numerals ii.a–ii.c in Appendix A.

Numerical ii.a describes receiving an electronic message from a sender, which the ’272 patent teaches by describing “receiving, using one or more computing devices, a request from a sender email client to attach a payment object to a message composed in the sender email client” (’272, Col. 21 ll. 16–18).

Numerical ii.b describes finding a recipient’s email address and a payment amount to be transferred from a sender to the recipient, which the ’272 patent teaches by stating that the payment object “[comprises] fields for capturing payment transaction details… a recipient electronic payment account identifier associated with an account of a recipient of the payment, and a payment amount for the payment” (’272 col. 21 ll. 23-24 and ll. 26-29).

Numerical ii.c identifies the association between sender and recipient accounts and the payment transfer system, which the ’272 patent also teaches by stating that the payment object includes “at least a sender electronic payment account identifier associated with an account of a sender of a payment [and] a recipient electronic payment account identifier associated with an account of a recipient of the payment” (’272 col. 21 ll. 25-
Thus, numerals ii.a-ii.c in Appendix A demonstrate that the receiving step of claim 1 of the '924 patent is taught in full by the '272 patent.

The configuring step of claim 1 from the '924 patent consists of three substeps, described by numerals iii-v in Appendix A.

Numeral iii states that the network resource is associated with a payment transfer system, which the '272 patent teaches by declaring the creation of “a payment object modal comprising fields for capturing payment transaction details,” where the payment transaction details include financial account identifiers for the payment sender and recipient (‘272, Col. 21 ll. 20–22). Unlike the '924 patent, the '272 patent does not explicitly mention a payment system nor a network resource. However, the '272 patent describes a payment modal, which requires the same information (payment amount and account identifiers) as the network resource. According to the Nielsen Norman Group, a modal dialog window is defined as “[a] dialog [that] disables the main content until the user explicitly interacts with the modal dialog” (Fessenden). Thus, the payment modal of the '272 patent is a dialog window with which a user can interact and which contains the details of the payment transfer. As the payment modal of the '272 patent possesses the same characteristics as the network resource of the '924 patent, the payment modal of the '272 patent and the network resource of the '924 patent are the same. Similarly, the '272 patent states that the payment modal is linked to financial accounts, and thus implies that the payment modal must be connected to a payment system, fully teaching numeral iii of the configuring step of the '924 patent.

Numeral iv states that the network resource of the '924 patent is accessible to the recipient by link, which the '272 patent teaches by discussing “insert[ing] a payment object in the email message” (‘272, Col. 22 ll. 56–57). A dialog window can be viewed through an email via some form of an embedded link, allowing the '272 patent to teach numeral iv of the configuring step of claim 1 of the '924 patent.

Numeral v discusses that the activation link attached to the network resource is displayed after it is sent via electronic message to the recipient, which the '272 patent teaches by stating “If the payment object is a request for payment, the payment object will further provide buttons or other user interface objects that allow the recipient to accept or reject the payment request” (‘272, Col. 22 ll. 56–57). The buttons of the '272 patent have the same function as the activation link of the '924 patent; therefore, the '272 patent fully teaches numeral v of the configuring step of claim 1 of the '924 patent.

Thus, numerals iii-v in Appendix A demonstrate that the configuring step of claim 1 of the '924 patent is taught in full by the '272 patent.

The transmitting step of claim 1 of the '924 patent consists of two substeps, described by reference numerals vi and vii in Appendix A.

Numeral vi states that the network resource is sent via electronic message from the sender to the recipient, which the '272 patent describes as “inserting, by the one or more computing devices, a payment object into the email message composed in the sender email client . . . [with] delivery of the email message including the payment object to a recipient email client” (‘272, Col. 21 ll. 46–48 and ll. 63-65).

Numeral vii states that upon activation of the network resource, a transfer of funds between sender and recipient is initiated. The '272 patent teaches this, as it mentions that “If the payment is accepted, the acceptance is communicated to the payment processor, which finalizes the transfer of funds between the sender’s payment account and the recipient’s payment account” (‘272, Col. 4 ll.30–33).

Thus, numerals vi and vii in Appendix A demonstrate that the configuring step of claim 1 of the '924 patent is taught in full by the '272 patent.

Claim 1 of the '924 patent is functionally equivalent to claim 9 of the '924 patent (shown in Figure 8). For brevity, claim 1 has been adopted as being representative of claim 9. Thus, the arguments used against claim 1 of the '924 patent can also be applied to claim 9 of the '924 patent. Claims 1 and 9 of the '924 patent are invalid under 35 U.S.C. § 102 (a)(2), which states “A person shall be entitled to a patent unless. . . . the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.” Despite using different diction, such as using a “payment modal” instead of a “network resource,” the steps described by claims 1 and 9 of the '924 patent are still described in full by the claims of the '272 patent, which is by another inventor and filed before the '924 patent.

B. Invalidating Claims 1 and 9 of the '924 Patent In View of U.S. Patent 8,725,635

Claims 1 and 9 of the '924 patent lack novelty under 35 U.S.C. § 102 based on the teachings of U.S. Patent 8,725,635 (henceforth referred to as “the '635 patent”), which has an effective filing date of November 4, 2010. 35 U.S.C. § 102 states that a patent is invalid if “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.” As illustrated in Appendix B, the '635 patent reference teaches, inherently or expressly, each and every element of claim 1 of the '924 patents. Claim 1 of the '924 patent is functionally equivalent to claim 9 of the '924 patent. For brevity, claim 1 has been adopted as being representative of claim 9. Thus, the arguments used against claim 1 of the '924 patent can also be applied to claim 9 of the '924 patent.

Figure 7 shows claim 1 of the '924 patent, which describes the operation of the Dorsey System as a series of steps. To demonstrate the invalidity of claim 1 based on prior art, each of its steps must also be found to be disclosed by, or obvious over disclosures in, at least one prior art reference, as in the following paragraphs.
Claim 1 of the '924 patent consists of three parts: receiving a user input, configuring a network resource accessible via a link, and transmitting a message to the user that contains the link to the configured network resource. Appendix A describes the receiving step in numerals ii.a–ii.d, the configuring step in numerals iii.a–iii.b, and the transmitting step in numerals iv.a–iv.b.

Numeral ii.a states that the receiving step is completed by an electronic application. This element is taught in the '635 patent, which states that the receiving step is completed “via an online financial institution application” (‘635, col. 30, ll. 41–42). Therefore, the ‘635 patent teaches that the receiving step is done by an electronic application as recited in claim 1 of the '924 patent.

Numeral ii.b states that the electronic application is executed by a user device associated with the sender. This element is taught in the '635 patent, which states that the financial institution application is executed by a personal computing device associated with the sender. Figure 9 depicts the personal computing device. Therefore, the ‘635 patent teaches that the electronic application is executed by a user device associated with the sender as recited in claim 1 of the '924 patent.

Numeral ii.c states that the sender specifies a recipient electronic address and a payment amount to be transferred between accounts. This element is taught in the ‘635 patent, which states that the financial institution customer specifies a recipient alias and a payment amount to be transferred between accounts. The ‘635 patent claims, “receiving, by a computer device processor, payment instructions for the online payment from a financial institution customer . . . wherein the payment instructions includes an alias inputted by the financial institution customer associated with a payment recipient for the online payment, a payment amount, and an account associated with the financial institution customer for the online payment” (‘635, col. 30, ll. 39–47). The ‘635 further describes that “the payment recipient is one or more individuals or entities the financial institution customer is providing online payment, wherein the alias comprises at least one of a mobile phone number, an email address, or social network identification information of the payment recipient” (‘635, col. 30, ll. 47–52). Therefore, the ‘635 patent teaches that the recipient electronic address and a payment amount to be transferred between accounts as recited in claim 1 of the '924 patent.

Numeral ii.d states that the accounts of the recipient and the sender are associated with Dorsey’s System. This element is taught in the '635 patent, which states that the financial institution accounts of the recipient and the sender are associated with the online banking system. The ‘635 patent states, “The user can then use the online banking interface to register a mobile phone number, email address, or other alias by associating the number, address, or other alias with one of the user’s financial institution accounts” (‘635, col. 2, ll. 31–35). Therefore, the ‘635 patent teaches that the accounts of the recipient and the sender are associated with the payment transfer system as recited in claim 1 of the '924 patent.

Numeral iii.a states that Dorsey’s System configures a network resource associated with Dorsey’s System. This element is taught in the '635 patent, which states that the online banking system configures a sign-in page associated with the online banking system. The ‘635 patent states, “The process then proceeds to the screenshot of a page as shown in [Figure 10] where the online banking system 600 presents a sign-in page” (‘635, col. 22, ll. 43–45). Therefore, the ‘635 patent teaches that the payment transfer system configures a network resource associated with the payment transfer system as recited in claim 1 of the '924 patent.

Numeral iii.b states that the network resource is accessible via a link available to the recipient. This element is taught in the '635 patent, which states that the sign-in page is accessible via a link available to the recipient. The ‘635 patent states, “The process 1000 in [Figure 11] starts with block 1005 where an online banking system 600 using the alias, such as an email address or mobile telephone number, sends a first user (recipient) notice of a requested transfer from a second user, the notice including a link to the online banking system 600 and a confirmation number” (‘635, col. 22, ll. 35–39). Therefore, the ‘635 patent teaches that the network resource is accessible via a link available to the recipient as recited in claim 1 of the '924 patent.

Numeral iv.a states that an electronic message containing
the link is transmitted to the recipient. This element is taught in the '635 patent, which states that a notice containing the link is transmitted to the recipient. The '635 patent states, “The process 1000 in [Figure 11] starts with block 1005 where an online banking system 600 using the alias, such as an email address or mobile telephone number, sends a first user (recipient) notice of a requested transfer from a second user, the notice including a link to the online banking system 600 and a confirmation number” ('635, col. 22, ll. 35–39). Therefore, the '635 patent teaches that an electronic message is transmitted to the recipient as recited in claim 1 of the '924 patent.

Numeral iv.b states that Dorsey’s System initiates the transfer of money after recipient activation of the link. This element is taught in the '635 patent, which states that the online banking system initiates the transfer of money after recipient activation of the link. The '635 patent states, “The process then proceeds to block 1010 where a first user (recipient) activates the link provided with the notice . . . The banking system then accesses the data repository to determine whether the alias is registered and thereby associated with a financial institution account. If the alias is registered, the banking system sends a transfer notification to the recipient using the alias and/or initiates the funds transfer” ('635, col. 22, ll. 41–42; '635, col. 2, ll. 53-58). Therefore, the '635 patent teaches that the payment transfer system initiates the transfer of money after recipient activation of the link as recited in claim 1 of the '924 patent.

Claims 1 and 9 of the '924 patent are invalid under 35 U.S. Code § 102 (a)(2), which states “A person shall be entitled to a patent unless . . . the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.” Despite differences in diction, the steps described by claims 1 and 9 of the '924 patent are described in full by the claims of the '272 patent.


Under 35 U.S.C. § 103, claim 20 of the '924 patent is invalid based on the teachings of U.S. Patent Publication 2009/0006233 (henceforth referred to as “the '233 patent”) filed by Roland Chemtob and with an effective filing date of March 30, 2007, U.S. Patent 10,395,223 (henceforth referred to as “the ‘223 patent”) filed by Sri Saravana Muthu and with an effective filing date of March 7, 2012, and U.S. Patent 10,515,345 (henceforth referred to as “the ‘345 patent”) with an effective filing date of June 29, 2010. 35 U.S.C. § 103 states that a claimed invention is unpatentable if it would have been obvious to a person of ordinary skill in the art at the time of the effective filing date. As illustrated by Appendix C, the combination of the '233 patent, the '223 patent, and the '345 patent contain each and every aspect of claim 20. Therefore, the USPTO erred in patenting claim 20 and claim 20 should be invalidated.

Claim 20 of the '924 patent discusses a process of the Dorsey Software that includes can be split into six steps: 1) receiving an electronic message and interpreting it as a request to generate a link, 2) identifying information from the message, 3) generating a link that will activate the transfer of funds between two users’ accounts when it receives user input, 4) transmitting the link to the user who is sending the money, 5) receiving confirmation that the link was activated,
and 6) initiating the transfer of funds between the sender and the recipient.

The receiving step of the '924 patent details receiving a request for a link to “authorize a payment transaction” that will be included in the electronic message. The request comes in the form of an electronic message and is received at the “payment transfer system” located on a Square server. A similar process of utilizing input from an email message to generate an object is described in the '233 patent. Claim 1 of the '233 patent describes, “A computer-implemented method for electronically transferring funds comprising: … responsive to a generation input to the email module, receiving data describing a fund transfer;” ('233, Col. 7 Ll. 23–25).

Both methods describe receiving input via an email message requesting the generation of an object that allows the transfer of money between the user requesting the transaction and another user. In both systems, the reception of the request takes place on a server. The '924 patent refers to this server as “the payment transfer system” and the '233 patent refers to it as a “fund transfer server,” however, both are used to generate the object requested by the email. The only difference between the '924 patent and the prior art is that the '233 patent describes the generation of an “electronic transfer packet” while the '924 patent describes the generation of a link, however, both objects are used as a means to facilitate the transfer of funds.

The next step described by claim 20 of the '924 patent describes the payment transfer system “parsing” the request for the link (the email message) to identify the sender’s electronic address, the electronic address of the recipient, and the payment amount. The sender and recipient addresses are described in the generating step to be utilized as unique identifiers for the two users. That step states that the link would allow funds to be transferred from a “sender account associated with the sender address” to a “recipient account associated with the recipient address;” ('924, col. 26, ll. 17–18).

This method of using electronic addresses as identification for users’ financial information is taught by the '233 patent. Claim 1 of the '223 patent describes a method “creating a record for the recipient in a database of registered users contained in the computer-implemented funds transfer payment network, the record including the token for the recipient, and at least some of the identifying information, and the record including the account number of the account of the recipient at the second financial institution;” ('223, col. 26, ll. 42–48) where “the token for the recipient is the email address of the recipient” ('223, col. 27, ll. 19–20). Since the '223 patent described the use of an email address as a “token” to identify the user’s account number before the effective filing date of the '924 patent, this aspect is not novel.

Information about identifying a payment amount was also discussed before the effective filing date of the '924 patent in the '233 patent. As discussed previously, claim 1 of the '233 patent describes software that generates a payment object in response to receiving data describing a transaction. Claim 4 of the '233 patent states, “the data describing the fund transfer comprises a financial account number, a transfer amount, a transfer recipient and a transfer date.” ('233, col. 7, ll. 23–25). Although the two documents use slightly different vocabulary, the “transfer amount” referred to by the '233 patent is the same as the “payment amount” of the '924 patent. As the inventors of the system described in the '924 patent had access to both the information concerning the reception of input through emails, provided in the '233 patent, as well as the information about using an email address as an identifier for financial information, described in the '223 patent, it would have been obvious to a person of ordinary skill in the art to identify the email addresses using the method described by the '233 patent for the purpose described in the '223 patent.

The generating step of claim 20 refers to the generation of a link by the payment transfer system. This same generation step is taught by the '233 patent in regards to the electronic transfer packet being generated via the fund transfer server. The '924 patent recites that the generated link contains instructions to transfer funds between the sender and the recipient financial accounts using the email identifiers that were discussed previously. Such a link is taught by the '345 patent. Claim 1 of the '345 patent describes a Uniform Resource Link (URL) that is “responsive to receiving a confirmation from the sender account, transferring an amount of funds from the sender account to the recipient account” ('345 col. 12, ll. 19–21). Like the '924 patent, the '345 patent describes a link that, when activated, transfers “an amount of funds” or a “payment amount” from a sender's account to a recipient's account. The links are essentially the same.

The transmitting step of the '924 patent recites that the link is then transmitted to the sender’s computing device, a process included in the '345 patent as well. According to the '345 patent, “The recipient can transmit the link to the sender in any number of ways, including as part of an email, text, instant message, paper, or any other suitable medium.” ('345, col. 2, ll. 9–11). The '345 recites how to deliver the link to the sender computing device the same way as the '924 patent utilizes (email), as well as other methods to deliver it to the sender. The link is taught by the '924 patent to be activated by user input and generates an activation message that allows the payment transfer system to transfer the money between the sender and the recipient accounts. The link recited by the '345 patent does the same thing, “obtaining sender information from the computing device in response to the selection of the active URL link;” ('345, col. 12, ll. 14–16) and is “responsive to receiving a confirmation from the sender account, transferring an amount of funds from the sender account to the recipient account,” ('345, col. 12, ll. 19–21). The transfers are processed utilizing a “server machine” similar to the “payment transfer system” of the '924 patent. The two documents use different diction, referring to “obtaining sender information from the computing device;” in place of activation “by a user input;” but both describe the same action: activation by user input and the submission of a request to transfer money using a server.

The final step described by the '924 patent includes the payment transfer system receiving the request to initiate the
transfer, identifying the sender and recipient financial accounts, and transferring the payment between them. The ’345 patent teaches a process mirroring that of the ’924 patent where the system is, “responsive to receiving a confirmation from the sender account at the server machine, transferring an amount of funds from the sender account to the recipient account” (’345, col. 13, ll. 5–8). The system described in the ’345 patent is “responsive to receiving a confirmation from the sender account at the server machine” exactly how the system of the ’924 patent receives, “at the payment transfer system, the activation message from a recipient computing device.” In both cases, this activation/confirmation message initiates the transfer of funds between the sender’s financial account and the recipient’s financial account. This means that the two documents essentially describe the same method.

Although the exact system of user input from an email as a request to generate a link has not been explicitly written about before, a person of ordinary skill in the art of computer systems and software would find it obvious to utilize the system of acquiring user input from emails, described in the ’233 patent, and replace the generation of the electronic transfer packet with the generation of the URL detailed by the ’345 patent to serve the purpose of getting confirmation to initiate the transfer of funds. Therefore, claim 20 of the ’924 patent is invalid as the combination of the ’233 patent, the ’223 patent, and the ’345 patent describe every aspect of the invention claimed by claim 20.

A person of ordinary skill in the art would be able to look at the URL link described in the ’345 patent and find it obvious to incorporate it into the fund transfer system described by the ’233 to create a method of remotely transferring funds between the bank accounts of two users that improves on the electronic transfer system described in the ’233 by allowing the sender to approve the transfer request by the recipient before the transaction is made by utilizing the link described in the ’345.

VIII. CONCLUSIONS

As shown above, the claimed invention does not meet the requirements for patentability because prior to the effective filing date of the ’924 patent, there were already public documents that described the inventions claimed in the ’924 patent in part of in its entirety. Claim 1 and 9 of the ’924 patent are invalid as anticipated by the ’272 patent. Claims 1 and 9 of the ’924 patent are also invalid under 35 U.S.C. § 102. The same process recited in the claims ’924 patent of the was described previously in the ’635 patent. Claim 20 is obvious under 35 U.S.C. § 103 based on the combination of the ’233 patent, the ’223 patent, and the ’345 patent. Therefore, all of the independent claims violate part of Title 35 of the U.S. Code and therefore, should be deemed invalid.

ACKNOWLEDGMENTS

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REFERENCES


1. (i) A computer-implemented method for causing funds to be transferred between a recipient and a sender of an electronic message, comprising:

(ii.a) receiving, by an electronic application executed by a user device associated with the sender, a user input

(ii.b) that specifies a recipient electronic address and a payment amount to be transferred between a recipient account associated with the recipient and a sender account associated with the sender,

(ii.c) wherein the recipient account and the sender account are associated with a payment transfer system;

(iii) configuring, by the payment transfer system, a network resource associated with the payment transfer system

(iv) and accessible via a link activatable at a user device associated with the recipient,

(v) wherein the link is displayed for activation in an application on a recipient user device associated with the recipient after receipt by the user device associated with the recipient of an electronic message; and

(vi) transmitting, by the electronic application executed by the user device associated with the sender, the electronic message to the recipient electronic address,

(vii) wherein upon receiving an indication that the recipient activated the link to access the network resource, a server associated with the payment transfer system initiates a transfer of the payment amount between the recipient account and the sender account.

<table>
<thead>
<tr>
<th>9,904,924</th>
<th>8,762,272</th>
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<tbody>
<tr>
<td>(ii.a) receiving, using one or more computing devices, a request from a sender email client to attach a payment object to a message composed in the sender email client… (‘272, col. 21 ll. 16–18)</td>
<td>(ii.a) receiving, using one or more computing devices, a request from a sender email client to attach a payment object to a message composed in the sender email client… (‘272, col. 21 ll. 16–18)</td>
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<tr>
<td>(ii.b) comprising fields for capturing payment transaction details, the payment transaction details comprising… a recipient electronic payment account identifier associated with an account of a recipient of the payment, and a payment amount for the payment (‘272 col. 21 ll. 23-24 and ll. 26-29)</td>
<td>(ii.b) comprising fields for capturing payment transaction details, the payment transaction details comprising… a recipient electronic payment account identifier associated with an account of a recipient of the payment, and a payment amount for the payment (‘272 col. 21 ll. 23-24 and ll. 26-29)</td>
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<td>(ii.c) at least a sender electronic payment account identifier associated with an account of a sender of a payment, a recipient electronic payment account identifier associated with an account of a recipient of the payment (‘272 col. 21 ll. 25-28)</td>
<td>(ii.c) at least a sender electronic payment account identifier associated with an account of a sender of a payment, a recipient electronic payment account identifier associated with an account of a recipient of the payment (‘272 col. 21 ll. 25-28)</td>
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<td>(iii) a payment object modal for presentation in the sender email client in connection with the composed email message (‘272, col. 21 ll. 20–22)</td>
<td>(iii) a payment object modal for presentation in the sender email client in connection with the composed email message (‘272, col. 21 ll. 20–22)</td>
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<td>(iv) insert[ing] a payment object in the email message (‘272, col. 22 ll. 56–57)</td>
<td>(iv) insert[ing] a payment object in the email message (‘272, col. 22 ll. 56–57)</td>
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<td>(v) If the payment object is a request for payment, the payment object will further provide buttons or other user interface objects that allow the recipient to accept or reject the payment request. (‘272, col. 4 ll. 20–23)</td>
<td>(v) If the payment object is a request for payment, the payment object will further provide buttons or other user interface objects that allow the recipient to accept or reject the payment request. (‘272, col. 4 ll. 20–23)</td>
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<tr>
<td>(vi) inserting, by the one or more computing devices, a payment object into the email message composed in the sender email client… [with] delivery of the email message including the payment object to a recipient email client (‘272, col. 21 ll. 66–68 and ll. 65-65)</td>
<td>(vi) inserting, by the one or more computing devices, a payment object into the email message composed in the sender email client… [with] delivery of the email message including the payment object to a recipient email client (‘272, col. 21 ll. 66–68 and ll. 65-65)</td>
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<tr>
<td>(vii) If the payment is accepted, the acceptance is communicated to the payment processor, which finalizes the transfer of funds between the sender’s payment account and the recipient’s payment account (‘272, col. 4 ll. 30–33)</td>
<td>(vii) If the payment is accepted, the acceptance is communicated to the payment processor, which finalizes the transfer of funds between the sender’s payment account and the recipient’s payment account (‘272, col. 4 ll. 30–33)</td>
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<td>9,964,924</td>
<td>8,725,635</td>
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<tr>
<td>1. (i.a) A computer-implemented method</td>
<td>(i.a) As will be appreciated by one of skill in the art, the present invention may be embodied as a method (including, for example, a computer-implemented process, a business process, and/or any other process) (‘635, col. 28, ll. 45–48),</td>
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<tr>
<td>(i.b) for causing funds to be transferred between a recipient and a sender of an electronic message, comprising:</td>
<td>(i.b) More specifically, embodiments of the invention allow an entity to transfer funds to another entity . . . In some embodiments of the invention, customers can alternatively or additionally initiate payments by sending a text message 211 to the financial entity, the text message including the receiver’s phone number, email address, social networking ID, nickname, or other alias (‘635, col. 2, ll. 4–5; ‘635, col. 8, ll. 44–48).</td>
</tr>
<tr>
<td>(ii.a) receiving, by an electronic application</td>
<td>(ii.a) receiving, by a computer device processor . . . via an online financial institution application (‘635, col. 30, ll. 39–42),</td>
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<td>(ii.b) executed by a user device associated with the sender,</td>
<td>(ii.b)</td>
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<tr>
<td>(ii.c) a user input that specifies a recipient electronic address and a payment amount to be transferred between a recipient account associated with the recipient and a sender account associated with the sender,</td>
<td>(ii.c) payment instructions for the online payment from a financial institution customer . . . wherein the payment instructions includes an alias inputted by the financial institution customer associated with a payment recipient for the online payment, a payment amount, and an account associated with the financial institution customer for the online payment, wherein the payment recipient is one or more individuals or entities the financial institution customer is providing online payment, wherein the alias comprises at least one of a mobile phone number, an email address, or social network identification information of the payment recipient (‘635, col. 30, ll. 39–52);</td>
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<tr>
<td>(ii.d) wherein the recipient account and the sender account are associated with a payment transfer system;</td>
<td>(ii.d) The user can then use the online banking interface to register a mobile phone number, email address, or other alias by associating the number, address, or other alias with one of the user’s financial institution accounts (‘635, col. 2, ll. 31–35).</td>
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</table>

(‘635, Fig. 3)
(iii.a) configuring, by the payment transfer system, a network resource associated with the payment transfer system

(iii.b) and accessible via a link activatable at a user device associated with the recipient, wherein the link is displayed for activation in an application on a recipient user device associated with the recipient after receipt by the user device associated with the recipient of an electronic message; and

(iv.a) transmitting, by the electronic application executed by the user device associated with the sender, the electronic message to the recipient electronic address,

(iv.b) wherein upon receiving an indication that the recipient activated the link to access the network resource, a server associated with the payment transfer system initiates a transfer of the payment amount between the recipient account and the sender account.

<table>
<thead>
<tr>
<th>9,904,924</th>
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<tr>
<td>(iii.a) configuring, by the payment transfer system, a network resource associated with the payment transfer system</td>
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<th>8,725,635</th>
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<td>(iii.a)</td>
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<th>(iii.a)</th>
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<tr>
<td>(i) configuring, by the payment transfer system, a network resource associated with the payment transfer system</td>
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<th>(iii.b)</th>
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<tr>
<td>(ii) and accessible via a link activatable at a user device associated with the recipient, wherein the link is displayed for activation in an application on a recipient user device associated with the recipient after receipt by the user device associated with the recipient of an electronic message; and</td>
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<th>(iv.a)</th>
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<tr>
<td>(iii) transmitting, by the electronic application executed by the user device associated with the sender, the electronic message to the recipient electronic address,</td>
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<tr>
<th>(iv.b)</th>
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<tbody>
<tr>
<td>(iv) wherein upon receiving an indication that the recipient activated the link to access the network resource, a server associated with the payment transfer system initiates a transfer of the payment amount between the recipient account and the sender account.</td>
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</table>

(‘635, Fig. 11A)

The process 1000 in FIG. 10A starts with block 1005 where an online banking system 600 using the alias, such as an email address or mobile telephone number, sends a first user (recipient) notice of a requested transfer from a second user, the notice including a link to the online banking system 600 and a confirmation number (‘635, col. 22, ll. 35–39).

(iv.a) The process 1000 in FIG. 10A starts with block 1005 where an online banking system 600 using the alias, such as an email address or mobile telephone number, sends a first user (recipient) notice of a requested transfer from a second user, the notice including a link to the online banking system 600 and a confirmation number (‘635, col. 22, ll. 35–39).

(iv.b) The process then proceeds to block 1010 where a first user (recipient) activates the link provided with the notice . . . The banking system then accesses the data repository to determine whether the alias is registered and thereby associated with a financial institution account. If the alias is registered, the banking system sends a transfer notification to the recipient using the alias and/or initiates the funds transfer (‘635, col. 22, ll. 41–42; ‘635, col. 2, ll. 53-58).

<table>
<thead>
<tr>
<th>9,904,924 (Dorsey)</th>
<th>2009/0006233 (Chemtob)</th>
<th>10,395,223 (Muthu)</th>
<th>10,515,345 (PayPal Inc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. (i) A computer-implemented method for transferring funds via an electronic message comprising:</td>
<td>(i) A computer-implemented method for electronically transferring funds comprising:</td>
<td>(ii) responsive to a generation input to the email module, receiving data describing a fund transfer; (&quot;233, col. 7, ll. 23–25) (ii) after receiving data describing an electronic fund transfer from the email module 220, the fund transfer module 230 generates an electronic transfer packet for transmission to the fund transfer server (&quot;233, col. 3, ll. 20-23)</td>
<td>(iii) responsive to the detecting of the selection of the active URL link, automatically processing a content of the selected active URL link, . . . responsive to receiving a confirmation from the sender account, transferring an amount of funds from the sender account to the recipient account. (&quot;345, col. 12, ll. 8-10 - col. 12, ll. 19-21)</td>
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<tr>
<td>(ii) receiving, at a payment transfer system from an electronic messaging application of a sender computing device, a request for a link to include in the electronic message,</td>
<td>(ii) . . . responsive to a generation input to the email module, receiving data describing a fund transfer; (&quot;233, col. 7, ll. 23–25) (ii) after receiving data describing an electronic fund transfer from the email module 220, the fund transfer module 230 generates an electronic transfer packet for transmission to the fund transfer server (&quot;233, col. 3, ll. 20-23)</td>
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<td>(iii) the link configured to authorize a payment transaction;</td>
<td></td>
<td>(iii) [A URL] responsive to receiving a confirmation from the sender account, transferring an amount of funds from the sender account to the recipient account (&quot;345 col. 12, ll. 19–21)</td>
<td></td>
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<tr>
<td>(iv) parsing, by the payment transfer system, the request for the link to identify</td>
<td>(iv) input to the e-mail module, receiving data describing a fund transfer;” (&quot;233, col. 7, ll. 9-10) where “the data describing the fund transfer comprises a financial account number, a transfer amount, a transfer recipient and a transfer date. (&quot;233, col. 7, ll. 23–25)</td>
<td>(v) creating a record for the recipient in a database of registered users contained in the computer-implemented funds transfer payment network, the record including the token for the recipient, and at least some of the identifying information, and the record including the account number of the account of the recipient at the second financial institution; (&quot;223, col. 26, ll. 42–48) where the token for the recipient is the email address of the recipient (&quot;223, col. 27, ll. 19–20).</td>
<td></td>
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<tr>
<td>(v) a recipient address of a recipient, a sender address of a sender, and a payment amount;</td>
<td></td>
<td>(v) after receiving data describing an electronic fund transfer from the e-mail module 220, the fund transfer module 230 generates an electronic transfer packet for transmission to the fund transfer server (&quot;233, col. 3, ll. 20-25)</td>
<td></td>
</tr>
<tr>
<td>(vi) generating, by the payment transfer system,</td>
<td>(vi) after receiving data describing an electronic fund transfer from the e-mail module 220, the fund transfer module 230 generates an electronic transfer packet for transmission to the fund transfer server (&quot;233, col. 3, ll. 20-25)</td>
<td></td>
<td></td>
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<tr>
<td>(vii) the link, wherein the link corresponds to an instruction to transfer the payment amount from a sender account associated with the sender address to a recipient account associated with the recipient address;</td>
<td>(vii) [A URL] responsive to receiving a confirmation from the sender account, transferring an amount of funds from the sender account to the recipient account (&quot;345 col. 12, ll. 19–21)</td>
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<td></td>
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</table>
(viii) transmitting, by the payment transfer system, the link to the sender computing device,

(x) receiving, at the payment transfer system, the activation message from a recipient computing device,

(ix) wherein the link is configured to be activated by a user input and, when activated, generate an activation message to the payment transfer system to perform the instruction;

(xi) wherein upon receiving the activation message, the payment transfer system identifies the sender account and the recipient account and initiates a transfer of the payment amount between the recipient account and the sender account.

(viii) The recipient can transmit the link to the sender in any number of ways, including as part of an email, text, instant message, paper, or any other suitable medium. (‘345, col. 2, ll. 9–11)

(x) detecting, by a server machine, a selection of an active Uniform Resource Locator (URL) link from a computing device (‘345, col. 12, ll.)

(ix) obtaining sender information from the computing device in response to the selection of

(xi) responsive to receiving a confirmation from the sender account, transferring an amount of funds from the sender account to the recipient account, (‘345, col. 12, ll. 19–21)