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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**12/02/2024 11:32:29 PM Z ET**	**US-0691.12c | 32-10527US2**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	68192132	FILING DATE	-
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche Jr.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 0

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)

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CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche Jr.

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PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E2024B2N32526018**	**Christopher Abidin**

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504184	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1830	PROCESSING FEE, EXCEPT IN PROVISIONAL APPLICATIONS	140.00	1	140.00
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SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

BACKGROUND

[0001] Checks typically provide a safe and convenient method for an individual such as a payor to transfer funds to a payee. To use a check, the individual usually opens a checking account, or other similar account, at a financial institution and deposits funds, which are then available for later withdrawal. To transfer funds with a check, the payor usually designates a payee and an amount payable on the check. In addition, the payor often signs the check. Once the check has been signed, it is usually deemed negotiable, meaning the check may be validly transferred to the payee upon delivery. By signing and transferring the check to the payee, the payor authorizes funds to be withdrawn from the payor's account on behalf of the payee.

[0002] While a check may provide a payor with a convenient and secure form of payment, receiving a check may put certain burdens on the payee, such as the time and effort required to deposit the check. For example, depositing a check typically involves going to a local bank branch and physically presenting the check to a bank teller. To reduce such burdens for the payee, systems and methods have been developed to enable the remote deposit of checks. For example, the payee may capture a digital image of a check using a mobile device. The financial institution may then receive from the payee the digital image of the check. The financial institution may then use the digital image to credit funds to the payee. However, such a technique requires the efficient and accurate detection and extraction of the information pertaining to a check in the digital image. Capturing a digital image at a mobile device that allows for subsequent detection and extraction of the information from the digital image is difficult.

FIFTH THIRD EX1033
Page 6 of 959

SUMMARY

[0003] An image of a check that is in the field of view of a camera is monitored prior to the image of the check being captured. The camera is associated with a mobile device. The monitoring may be performed by the camera, the mobile device, and/or a financial institution that is in communication with the mobile device. When the image of the check in the field of view passes monitoring criteria, an image may be taken by the camera and provided from the mobile device to a financial institution. The check may be deposited in a user's bank account based on the image. Any technique for sending the image to the financial institution may be used.

[0004] In an implementation, the image capture may be performed automatically by the camera, the mobile device, and/or the financial institution as soon as the image of the check is determined to pass the monitoring criteria. In an implementation, feedback may be provided to the user of the camera regarding the image of the check in the field of view. The user may reposition the check and/or the camera, for example, responsive to the feedback. Alternatively, the user may capture an image of the check responsive to the feedback.

[0005] This summary is provided to introduce a selection of concepts in a simplified form that are further described below in the detailed description. This summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The foregoing summary, as well as the following detailed description of illustrative embodiments, is better understood when read in conjunction with the appended drawings. For the purpose of illustrating the embodiments, there are shown in the drawings example constructions of the embodiments; however, the embodiments are not limited to the specific methods and instrumentalities disclosed. In the drawings:

Figure 1 is a block diagram of an implementation of a system in which example embodiments and aspects may be implemented;

Figure 2 shows a high-level block diagram of an implementation of a system that may be used for the deposit of a check;

Figure 3 is a diagram of an example image comprising a check image, a background image, and feedback;

Figure 4 is a diagram of an example image divided into segments that may be used for monitoring the image;

Figure 5 is a diagram of an example histogram for a segment of an image comprising check data and background data;

Figure 6 shows a data flow diagram of a system for the deposit of a check, in accordance with an example embodiment;

Figure 7 shows a block diagram of a client apparatus and a server apparatus for the deposit of a check, in accordance with an example embodiment;

Figure 8 is an operational flow of an implementation of a method that may be used for deposit of a check using image monitoring of the check;

Figure 9 is an operational flow of another implementation of a method that may be used for deposit of a check using image monitoring of the check; and

Figure 10 is a block diagram of an example computing environment in which example embodiments and aspects may be implemented.

DETAILED DESCRIPTION

[0007] In the following detailed description of example embodiments, reference is made to the accompanying drawings, which form a part hereof and in which is shown, by way of illustration, specific embodiments in which the example methods, apparatuses, and systems may be practiced. It is to be understood that other embodiments may be used and structural changes may be made without departing from the scope of this description.

[0008] Figure 1 is a block diagram of an implementation of a system 100 in which example embodiments and aspects may be implemented. System 100 may include an account owner, referred to herein as a user 102, and financial institutions 130, 140, and 150, which may be any type of entity capable of processing a transaction involving a negotiable instrument. For example, financial institutions 130, 140, and 150 may be a retail bank, an investment bank, an investment company, a regional branch of the Federal Reserve, a clearinghouse bank, and/or a correspondent bank.

[0009] A negotiable instrument typically includes a type of contract that obligates one party to pay a specified sum of money to another party. Negotiable instrument as used herein is an unconditioned writing that promises or orders payment of a fixed amount of money. One example of a negotiable instrument is a check. The check may be taken by the receiving party and deposited into an account at a financial institution of the receiving party. The receiving party may endorse the check and then present it for deposit at a bank branch, via an automated teller machine (ATM), or by using remote deposit. Other examples of negotiable instruments include money orders, cashier's checks, drafts, bills of exchange, promissory notes, and the like. A money order is a trusted financial instrument that is a payment order for a pre-specified amount of money. A cashier's check (also known as a bank check, official check, teller's check, bank draft or treasurer's check) is a check guaranteed by a bank and may be purchased from a bank.

[0010] The user 102 may be an individual or entity who owns account 160 that may be held at financial institution 130. Account 160 may be any type of deposit account for depositing funds, such as a savings account, a checking account, a brokerage account, and the like. The user 102 may deposit a check 108 or other negotiable instrument in the account 160 either electronically or physically. The financial institution 130 may process and/or clear the check 108 or other negotiable instrument. The user 102 may communicate with financial institution 130 by way of communications network 120 such as an intranet, the Internet, a local area network (LAN), a wide area network (WAN), a wireless fidelity (WiFi) network, a public switched telephone network (PSTN), a cellular network, a voice over Internet protocol (VoIP) network, and the like. The user 102 may communicate with financial institution 130 by phone, email, instant messaging, text messaging, web chat, facsimile, mail, and the like. Financial institutions 130, 140, and 150 also may communicate with each other by way of communications network 120.

[0011] In an implementation, the user 102 may receive payment from another individual such as a payor in the form of a check 108 or other negotiable instrument that is drawn from account 170 at financial institution 150. The user 102 may endorse the check 108 (e.g., sign the back of the check 108) and indicate an account number on the check 108 for depositing the funds. It is noted that although examples described herein may refer to a check,

the techniques and systems described herein are contemplated for, and may be used for, deposit of any negotiable instrument. Similarly, the techniques and systems described herein are contemplated for and may be used with any form or document whose image may be captured with a camera or other imaging device of a mobile device for subsequent storage and/or processing.

[0012] As described further herein, a digital image of a check or other negotiable instrument may be provided from a user to a financial institution, and the digital image may be processed and funds associated with the check or negotiable instrument in the digital image may be deposited in a user's bank account. The user 102 may deposit the check 108 into account 160 by making a digital image of the check 108 and sending the image file containing the digital image to financial institution 130. For example, after endorsing the check 108, the user 102 may use a mobile device 106 that comprises a camera to convert the check 108 into a digital image by taking a picture of the front and/or back of the check 108. The mobile device 106 may be a mobile phone (also known as a wireless phone or a cellular phone), a personal digital assistant (PDA), or any handheld computing device, for example. Aspects of an example mobile device are described with respect to Figure 10.

[0013] To increase the likelihood of capturing a digital image of the check 108 that may be readable and processed such that the check 108 can be cleared, the image is monitored for compliance with one or more monitoring criteria, prior to the image of the check 108 being captured. The monitoring criteria may be directed to proper lighting and/or framing of the check 108 in an image of the check 108 that will be captured and presented for clearing of the check 108. An application may monitor whether the check 108 is sufficiently within the frame of the camera and has a high enough quality for subsequent processing. The monitoring is performed with respect to the image as it appears in the field of view of the camera of the mobile device 106. The field of view is that part of the world that is visible through the camera at a particular position and orientation in space; objects outside the field of view when the image is captured are not recorded in the image. The monitoring criteria may be based on one or more of light contrast on the image, light brightness of the image, positioning of the image, dimensions, tolerances, character spacing, skewing, warping, corner detection, and MICR (magnetic ink character recognition) line detection, as described further herein. In an

implementation, one or more histograms may be determined using the image being monitored. The histograms may be used in conjunction with monitoring criteria, as described further herein.

[0014] The monitoring may be performed by the camera, the mobile device 106, and/or a financial institution that is in communication with the mobile device 106. When the image of the check 108 in the field of view passes the monitoring criteria, an image may be taken by the camera and provided from the mobile device 106 to a financial institution. By ensuring that the image of the check passes monitoring criteria during pre-image capture monitoring, the number of non-conforming images of checks is reduced during presentment of the images to a financial institution for processing and clearing. In an implementation, feedback may be provided to the user 102 regarding the image of the check in the field of view. Based on the feedback, the user 102 may reposition the check 108 and/or the camera, for example, or may capture an image of the check 108.

[0015] In an implementation, the image capture may be performed automatically by the camera, the mobile device 106, and/or the financial institution as soon as the image of the check 108 is determined to pass the monitoring criteria. Alternatively, the user 102 may manually instruct the camera to perform the image capture (e.g., by pressing a button the camera or the mobile device 106) after the user 102 receives an indication or other feedback that the image passes the monitoring criteria.

[0016] In an implementation, the user 102 may send the digital image(s) to financial institution 130 using the mobile device 106. Any technique for sending a digital image to financial institution 130 may be used, such as providing a digital image to a website associated with financial institution 130 from storage, emailing a digital image to financial institution 130, or sending a digital image in a text message or instant message, for example.

[0017] Financial institution 130 may receive a digital image representing the check 108 and may use any known image processing software or other application(s) to obtain the relevant data of the check 108 from the digital image. Financial institution 130 may determine whether the financial information associated therewith may be valid. For example, financial institution 130 may include any combination of systems and subsystems such as electronic devices including, but not limited to, computers, servers, databases, or the like. The electronic

devices may include any combination of hardware components such as processors, databases, storage drives, registers, cache, random access memory (RAM) chips, data buses, or the like and/or software components such as operating systems, database management applications, or the like. According to an embodiment, the electronic devices may include a network-based server that may process the financial information and may receive the digital image from the user 102.

[0018] The electronic devices may receive the digital image and may perform an analysis on the quality of the digital image, the readability of the data contained therein, or the like. For example, the electronic devices may determine whether the account number, amount payable, and the like may be readable such that it may be parsed or otherwise obtained and processed by the financial institution to credit an account 160 associated with the user 102 and debit an account associated with the payor. In an implementation, a representative 135 of financial institution 130 may provide assistance to the user 102 and may provide assistance in determining whether the financial information may be readable and/or of a good enough quality to be processed.

[0019] Upon receipt and approval of the digital image, financial institution 130 may credit the funds to account 160. Financial institution 130 may clear the check 108 by presenting a digital image of the check 108 captured from the digital image to an intermediary bank, such as a regional branch of the Federal Reserve, a correspondent bank, and/or a clearinghouse bank. For example, the check 108 may be cleared by presenting the digital image to financial institution 140, which may be a regional branch of the Federal Reserve, along with a request for payment. Financial institutions 130 and 150 may have accounts at the regional branch of the Federal Reserve. Financial institution 130 may create a substitute check using the image provided by the user 102 and present the substitute check to financial institution 140 for further processing. Upon receiving the substitute check, financial institution 140 may identify financial institution 150 as the paying bank (e.g., the bank from which the check 108 is drawn). This may be accomplished using a nine digit routing number located on the bottom left hand corner of the check. A unique routing number is typically assigned to every financial institution in the United States. Financial institution 140 may present the substitute check to financial institution 150 and request that the check be paid. If financial

institution 150 verifies the check (i.e., agrees to honor the check), financial institution 140 may then settle the check by debiting funds from financial institution 150 and crediting funds to financial institution 130. Financial institution 150 may then debit funds from account 170.

[0020] It will be appreciated that the preceding examples are for purposes of illustration and explanation only, and that an embodiment is not limited to such examples. For example, financial institution 150 may be a correspondent bank (i.e., engaged in a partnership with financial institution 130). Thus, financial institution 130 may bypass the regional branch of the Federal Reserve and clear the check directly with financial institution 150. In addition, account 160 and account 170 may both be held at financial institution 130, in which case the check 108 may be cleared internally.

[0021] In an implementation, the mobile device 106 may comprise a video source such as a video camera, a web camera, or a video-enabled phone, for example, to obtain a video of the check 108. A frame of the video may be obtained and monitored with respect to monitoring criteria, as described further herein. The mobile device 106 and/or the institution may obtain the frame and monitor the frame, depending on an implementation. Generation of a live video of a check 108 is not limited to a video camera, a web camera, and a video-enabled phone, and it is contemplated that any device that is capable of generating a live video may be used to make a video of the check 108 which may be monitored in real-time with respect to monitoring criteria. Additional devices that may be used in the generation and/or transmission of a live video include a web-enabled video computing device, a mobile phone, a camcorder, and a computer camera, for example.

[0022] Figure 2 shows a high-level block diagram of an implementation of a system 200 that may be used for the deposit of a check, such as the check 108. As described further herein, the user 102 may deposit the funds of the check 108 using the camera functionality in the mobile device 106. In the example of one person giving a check to another person, this would enable the receiving party to deposit the funds at that time, without physically visiting an ATM or a bank branch.

[0023] In an implementation, the mobile device 106 may comprise a camera 207, such as a digital camera. Such a mobile device may be called a camera phone. The mobile device 106, through the camera 207, has the ability to take or capture a picture or digital image

of the check 108 or other negotiable instrument. The camera 207 may take an image of the front of the check 108. Alternatively, the camera 207 may take an image of both the front and the back of the check 108. The back of the check may provide endorsement verification, such as the signature of the person or party the check is made out to.

[0024] In an implementation, prior to an image in the field of view of the camera 207 being captured by the camera 207, the image may be monitored with respect to monitoring criteria, e.g., using a software application running on the mobile device 106. Feedback based on the monitoring of the image may be provided to the user 102 to assist the user 102 in positioning the check 108 so that the image of the check 108 may be captured in such a manner that it may be more easily processed and cleared during subsequent operations, such as those involving one or more financial institutions.

[0025] A depository 204 may include a bank in which the user 102 has a deposit account; however, the present disclosure is not limited to just banks. Alternatively, a third party may act as the depository 204 providing functionality to a plurality of users without regard to the bank at which they have deposit accounts, or whether their individual bank allows for the methods and systems described herein. The depository 204, in an implementation, after receiving the image(s) of the check 108 from the user 102, may use a clearinghouse 210 to perform the check clearing operations. As described with respect to the system 100 of Figure 1, check clearing operations are used by banks to do the final settlement of the check 108, such as removing funds from the account of the payor and transferring those funds to the user's bank. The user's bank may choose to make the funds available to the user 102 immediately and take on the risk that the check 108 does not clear. However, for various reasons, the bank may only make those funds available to the user 102 after the check 108 finally clears.

[0026] In an implementation, the user 102 may place the check 108 on a background and generate a digital image comprising an image of the check (e.g., a check image) and a portion of the background (e.g., a background image) using the camera 207. Any background may be used, although a dark background or a consistently colored background may provide more optimal results. It is noted that although examples and implementations described herein may refer to a check image and check data, the term "check image" may refer to any

foreground image in a digital image (as opposed to the background image) and the term "check data" may refer to any foreground data in a digital image (as opposed to background data). Thus, the "check image" and the "check data" may refer to the foreground image and foreground data in implementations involving any negotiable instrument, form, or document.

[0027] In an implementation, the image being monitored in the field of view of the camera 207 comprises check data and background data. The check data pertains to the check image and the background data pertains to the background image (e.g., the background on which the check image is disposed).

[0028] Figure 3 is a diagram of an example image 230 comprising a check image 247, a background image 250, and a feedback indicator 235 providing feedback to the user 102. The image 230 may be generated by an imaging device associated with the mobile device 106, such as the camera 207. An edge 245 separates the check image 247 from the background image 250. The edge 257 may be detected using any known technique(s). The image 230 may be provided in the field of view of the camera 207 prior to and during image capture of the check 108. The user 102 may adjust the camera 207, the check 108, and/or any light source so that the image 230 passes one or more monitoring criteria. For example, a light source from a specific angle can lead to poor light contrast. Light contrast may be a monitoring criterion, and poor light contrast may be corrected easily by moving the lens of the camera 207 to a different perspective, thereby allowing the image to pass the monitoring criterion.

[0029] Feedback regarding the image 230 in the field of view with respect to the monitoring criteria may be generated and provided to the user 102. In an implementation, the feedback may be provided visually, such as by text (e.g., "go closer", "go farther", "move the check to the right", "put the check on a darker background", "tilt the camera down", "take the picture now", etc.), arrows, or other visual indicators or cues (e.g., green lights, red lights, etc.) overlaid on the image 230, shown as feedback indicator 235. Alternatively or additionally, feedback may be provided to the user 102 aurally, such as through a speaker associated with the mobile device 106. The feedback may advise the user 102 to move the camera 207 or the check 108 or adjust the lighting or the background, for example. The feedback may also advise the user 102 when the image 230 passes the one or more monitoring criteria and to capture the image of the check 108.

[0030] One of the monitoring criteria may be based on the positioning of the check 180 in the image 230. The positioning of the check 108 may be determined from the image 230 and compared with predetermined dimensions (e.g., of a typical personal check, of a typical business check) and tolerances. If the dimensions are within a certain acceptable tolerance, then it may be determined that the check 108 is properly positioned. Such feedback may be generated and provided to the user 102.

[0031] In an implementation, the positioning of the check 108 in the image 230 may be compared with an alignment guide (which may or may not be visible to the user 102 in the field of view of the camera 207). For example, measurements may be made by a processor in the camera 207, the mobile device 106, or a computing device at the financial institution to determine the check's position with respect to the alignment guide. The measurements may be compared to predetermined measurements or values to determine whether the check's positioning in the image 230 is proper or sufficient for further processing of the image. Edge detection and/or corner detection may be used in such measurements (e.g., in measuring the distance from the check 108 in the image 230 to the alignment guide). Any known technique(s) for edge detection and/or corner detection may be used. In an implementation, corner detection itself may be a monitoring criterion, such that if corner detection of the check 108 in the image 230 is achieved, then it may be concluded that the image 230 may be properly processed and cleared by a depository (i.e., the image 230 passes the monitoring criteria).

[0032] The alignment guide may be overlaid on the camera feed of the mobile device 106, in an implementation. The alignment guide may take any shape such as a bounding rectangle or other bounding box or shape, horizontal and/or vertical bars, parallel lines, etc., for example. With a bounding rectangle, for example, used as the alignment guide, aligning the check 108, thereby passing this monitoring criterion, means enclosing the check 108 within the bounding rectangle. If the check 108 is outside of the alignment guide in the image 230, feedback may be generated and provided to the user 102 regarding this monitoring criterion with instructions for moving the check 108 or the camera 207 in order to properly align the check 108 in the field of view.

[0033] The operator of the camera 207 may introduce distortions in the image due to a perspective problem, specifically an angling of the camera vertically over the check, and the top of the check is smaller than the bottom, or the reverse. Monitoring criteria may also be directed to determining whether the image is skewed or warped. Skewing occurs when the check 208 is rotated from the horizontal in the image 230. By measuring the distance from the edge(s) of the check 208 in the image to an alignment guide or the edge of the field of view, it may be determined whether the check 208 is skewed (e.g., by comparing the distances to one another, by comparing the distances to predetermined values, etc.). If skewing is present in the image 230, feedback may be generated and provided to the user 102 with instructions for moving the check 108 or the camera 207 in order to properly align the check 108 in the field of view with respect to the horizontal.

[0034] Warping, as used herein, is meant to denote that the check 108 is tilted forward or back with respect to a plane that is perpendicular to a line drawn from the camera lens to the center of the check 108. Warping, or tilting, of the image may lead to incorrect optical detection of the check 108. In an implementation, a processor in the camera 207, the mobile device 106, or a computing device at the financial institution may determine whether warping is present in the image, and if so, may generate and provide feedback to the user 102. Such feedback may comprise instructions to the user 102 for moving the check 108 or the camera 207 such that the check 108 would appear to be perpendicular to an imaginary line drawn from the center of the camera lens to the center of the check 108 itself (e.g., dewarping instructions).

[0035] If user involvement is tolerated, the user may be queried to supply or identify one or more corners of the check 108 in the image 230. The perimeter of the check 108 may be determined using this information. Additionally, this information may be used for monitoring the image 230 for distortions.

[0036] In an implementation, a monitoring criterion may be whether the MICR line can be detected and/or read. Any known MICR line detection technique(s) may be used by the camera 207, the mobile device 106, and/or the financial institution (e.g., using an image processor, for example) to detect the MICR line on the check 108 in the image 230. If the MICR line can be detected, it may be determined that the image 230 may be captured and sent to

the financial institution for processing and clearing of the check 108 (i.e., the image passes the monitoring criterion directed to MICR line detection). If the MICR line cannot be detected, feedback may be provided to the user 102, such as to reposition the check 108 and/or the camera 207 (i.e., the image fails to pass the monitoring criterion, perhaps because the image is out focus or the lighting is inadequate, for example).

[0037] In an implementation, spacing between certain characters, points, or features (e.g., MICR number, "$" sign, signature line, courtesy amount line, legal amount line, etc.) may be determined and used as a monitoring criterion. For example, if the MICR line can be detected, then the spacing between the numbers in the MICR line may be determined using any known measuring and/or image processing technique(s). If the spacing is outside of a certain range corresponding to valid spacing between number in a MICR line, then it may be determined that the image 230 may be not properly processed if captured by the camera 207. In such a case, feedback may be generated and provided to the user 102, such as to reposition the check 108 and/or the camera 207.

[0038] Another monitoring criterion may be based on the light in the image 230, such as the light contrast and/or light brightness found on the image 230, such as in various regions of the image 230. For example, if the light contrast between the check image 247 and the background image 250 is less than a predetermined amount, then it may be determined that the image 230 may be not properly processed if captured by the camera 207. In such a case, instead of capturing the image 230, feedback may be generated and provided to the user 102 to adjust the camera 207, the check 108, and/or the lighting in order to bring the image 230 into compliance with the monitoring criteria.

[0039] As another example, the light brightness on various regions of the image may be determined and compared to each other and/or may be compared to a predetermined threshold. If the difference between the light brightness of the various regions is less than a predetermined amount (e.g., the light brightness does not vary significantly among the regions) or if the light brightness is less than a predetermined threshold, then it may be determined that the image 230 may be properly processed if captured by the camera 207. Otherwise, feedback may be generated and provided to the user 102 to adjust the camera 207, the check 108, and/or the lighting in order to change the light brightness on the image 230.

[0040] In an implementation, one or more histograms may be generated based on the image 230 and used in the determination of light contrast and/or light brightness monitoring criteria. A histogram is a well known graph and may be used to display where all of the brightness levels contained in an image are found, from the darkest to the brightest. These values may be provided across the bottom of the graph from left (darkest) to right (brightest). The vertical axis (the height of points on the graph) shows how much of the image is found at any particular brightness level.

[0041] Histograms may be used to monitor whether the light on the image 230 is uniform, not too bright, etc. For example, the mobile device 106 can monitor the histogram of the image 230 to ensure that there is a large contrast between the background image 250 and the check image 247. Feedback may be provided to the user 102 as to how to move or adjust the camera, lighting, etc. in order to get a good image for subsequent processing (i.e., how to get an image that passes the monitoring criteria).

[0042] In an implementation, the image 230 may be divided into segments, such as those shown in Figure 4. Figure 4 is a diagram of the example image 230 of Figure 3 divided into segments 260, 265, 270, 275 that may be used for monitoring the image 230. Although four segments are shown in Figure 4, any number of segments may be used with techniques described herein. Although the segments 260, 265, 270, 275 are formed by dividing the image 250 into quadrants, the segments may be formed by any techniques, take any shape, and have any area, subject to a constraint that each segment comprises a portion of the check data 247 and a portion of the background data 250 separated by a portion of the edge 245. In this manner, distinct areas of density corresponding to the background of the image and the check data of the image may be provided in a histogram.

[0043] Figure 5 is a diagram of an example histogram 280 for a segment of an image comprising check data and background data. The horizontal axis of the histogram 280 represents the grayscale level between 0 and 255, where 0 represents true black and 255 represents true white. The vertical axis represents the amount of the image at a particular grayscale level of the horizontal axis. Any known technique for generating a histogram for an image (such as a grayscale image of the image 230) may be used. The histogram 280 shows two distinct areas of density (i.e., two distinct density distributions). The density area 286

closer to the grayscale level of zero corresponds to the background of the image, and the density area 289 closer to the grayscale level of 255 corresponds to the check data.

[0044] The density distribution for each segment (or for the entire image 230) may be analyzed to determine whether the light contrast and/or light brightness is appropriate for processing and clearing of the check 108 in the image 230 (and thus passes that monitoring criterion) or whether the light contrast and/or light brightness does not pass the monitoring criterion and the camera 207, the check 108, and/or the light source should be adjusted or repositioned. For example, the density distributions for the segments may be compared with each other and/or may be compared to predetermined values or levels. If the differences are less than a predetermined difference amount, such as less than 1 percent different, less than 5 percent different, etc., then the image 230 may be captured and sent to the financial institution for processing. Otherwise, feedback may be generated and provided to the user 102 to reposition the camera 207, the check 108, and/or the light source.

[0045] When the image 230 passes the monitoring criteria (e.g., is positioned properly with respect to an alignment guide, is not warped, is not skewed, has adequate light brightness and/or light contrast, etc.), the image 230 may be captured either automatically (e.g., by the camera or the mobile device under direction of an application running on the camera 207 or the mobile device 106 or the financial institution) or manually (e.g., by the user 102 pressing a button or making a selection on the camera 207 or the mobile device 106). The digital image thus captured may be provided from the mobile device 106 to a financial institution. The check 108 may be deposited in a user's bank account based on the digital image. Any technique for sending the digital image to the financial institution may be used.

[0046] Figure 6 shows a data flow diagram 300 of a system for the deposit of a check, in accordance with an example embodiment. In the data flow diagram 300, a client 320 is one example of the mobile device 106 of the user 102 described with respect to the systems 100 and 200 of Figures 1 and 2, respectively. In an implementation, a server 322 may be a software component operable by the depository 204 of Figure 2. The client 320 may log in to a remote deposit system executed on the server 322. The login 325 may serve to authenticate the user 102 as an authorized consumer of the depository 204.

FIFTH THIRD EX1033
Page 20 of 959

[0047] The server 322, in one example, may send instructions 330 to the client 320 that execute an application on the client 320. This may include instructions that cause a software object, which may have been previously downloaded and installed (e.g., pre-installed) on the client 320, to be executed on the client 320. The software object may analyze the image in the field of view of a digital camera (e.g., the image 230 shown in the field of view of the camera 207 associated with the mobile device 106) with respect to one or more monitoring criteria and may generate and provide feedback to the user regarding the monitoring criteria and/or instructions for capturing an image of the check 108.

[0048] In another example, the instructions 330 may include a wholly self-contained application that when delivered to the client 320 will execute and perform one or more operations described herein, such as those directed to analyzing the image in the field of view of the camera 207 with respect to monitoring criteria and providing feedback to the user 102. In either example, the software object may be configured to make one or more software calls 310 to the camera 207. This may be through specific software instructions to the camera 207. In other words, the camera's functionality may not be abstracted through any software library. In such an example, software code may be written and delivered to every different camera-equipped mobile phone.

[0049] In an alternate example, the software object may operate through a software abstraction layer, such as an application programming interface (API). The software object developer may only insert code into the software object to call one or more APIs exposed by the software operating the mobile device 106. One example of such software is Windows Mobile by Microsoft Corporation. In the context of a Windows Mobile device, the Windows Mobile operating system (OS) has one or more APIs exposed to application developers that will translate instructions from applications into instructions operable by the camera 207 on the mobile device 106. A mobile operating system, also known as a mobile platform or a handheld operating system, is the operating system that controls a mobile device. Other mobiles OSs include Symbian OS, iPhone OS, Palm OS, BlackBerry OS, and Android.

[0050] The software object may cause the camera 207 to analyze an image in the field of view with respect to monitoring criteria, provide feedback, and/or take a picture or capture one or more images of the check 108 being deposited. These images may be captured

sequentially, e.g., pursuant to the user 102 flipping the check 108 over after an image of the front of the check 108 has been captured after passing the monitoring criteria. However, each side of the check 108 may be captured by the camera 207 using similar API calls. The images may be stored in an image file 315.

[0051] Once the images of one or both sides of the check 108 pass the monitoring criteria and are captured by the camera 207, the image file 315 may be operated on by the software object of the client 320. These operations may include any of the following: deskewing, dewarping, magnetic ink character recognition, cropping (either automatically, or having the user 102 manually identify the corners and/or edges of the check 108 for example), reducing the resolution of the image, number detection, character recognition, and the like.

[0052] With respect to number and character recognition, commercial check scanners have used characteristics of the MICR encoding to detect information about the check, such as the bank's routing number and the account number. However, the characteristics that these scanners have used are the magnetic characteristic of the ink itself and these scanners have used methods similar to those of magnetic audio tape readers. In an implementation, a software object of the client 320 may optically recognize the characters on the MICR line, as a consumer mobile device such as the mobile device 106 will lack the magnetic reading ability of a commercial check scanner.

[0053] The image may be also down converted into a grayscale or black and white image, such as either in Joint Photographic Experts Group (JPEG) compliant format or in tabbed image file format (TIFF) for example. In an alternate example, the image may be formatted as a Scalable Vector Graphics (SVG) image. One of the benefits of an SVG file is a large size advantage over JPEG. In the former example, the image at some point before entry into the clearing system may be converted to TIFF format. This may be performed at the mobile device 106, wherein the camera 207 captures the image in TIFF format. However, the camera 207 of the mobile device 106 may capture the image in JPEG format, which may then be converted into TIFF either at the mobile device 106 or at the server 322. In the latter example, this may use the transmission of the TIFF image across a communications network which may be more advantageous as TIFF images are typically smaller in file size for the same size of picture as a JPEG formatted image.

[0054] The software object on the client 320 may operate by performing one or more of the operations described herein and then transmitting an image file 335 (e.g., based on image file 315 that has been processed) to the server 322 after the user 102 confirms that they do wish to deposit the check 108. Alternately, the software object may capture the image of the check 108 and transmit that image to the server 322 that in turn may perform those operations, verifies that the image quality is within acceptable thresholds, and communicates that verification back to the client 320, which can then instruct the user 102 to take a picture of the other side of the check 108. In this example, the image transmitted to the server 322 may be in any format, such as JPEG or TIFF, insofar as the server software has the ability to convert that image into a Check 21 compliant format. Alternately, the bank may output an X9.37 file to the clearing system. The Check Clearing for the 21st Century Act (or Check 21 Act) is a United States federal law that allows the recipient of a paper check to create a digital version, thereby eliminating the need for further handling of the physical document. The Check 21 standard for electronic exchange is defined in the standard DSTU X9.37-2003 ("X9.37"). It is a binary interchange format.

[0055] The server 322 may confirm (e.g., using a process confirmation 340) with the user 102 the transmission, reception, and processing of each side of the check 108 separately, or may confirm both sides at the same time. On the server side, more operations may be performed, such as signature verification. Where to perform these operations may be determined by the processing power of the mobile device 106 itself, which is typically limited in computational power. However, the present discussion is not limited in any way by discussion of where certain operations are described as operating. The operations of detecting and verifying information may be performed by the client 320 before the information is transmitted along with the image in the image file 335 to the server 322. Alternately, the software object(s) operating on the mobile device 106 may perform no operation other then capturing images of the front and back of the check 108 after passing the monitoring criteria, receiving confirmation that the user 102 wishes to proceed, and transmitting those images to the server 322, wherein the server 322 performs those operations.

[0056] In an implementation, after the image file 335 has been received by the server 322, the server 322 may send a process confirmation 340 to the client 320. The process

confirmation 340 may request instructions from the client 320 to continue proceeding with the deposit now that the server 322 has received the image file 335. In response, the client 320 may send a deposit confirmation 345 to the server 322, instructing the server 322 to process the deposit of the check based on the image file 335 that had been received by the server 322.

[0057] Figure 7 shows a block diagram of a client apparatus 450 and a server apparatus 570 for the deposit of a check, in accordance with an example embodiment. The client apparatus 450 may include one or more software objects operating on a mobile device 106, such as described above. The client apparatus 450 may include a communications module 452, a check processing module 454, and an image monitoring and capture module 456. The client apparatus 450 may receive, in one example, one or more check images 458 as an input and output one or more processed images 460.

[0058] In an implementation, the check images 458 may be received following a software call from the check processing module 454 to the image monitoring and capture module 456. In such an implementation, the image monitoring and capture module 456 may include the camera 207 contained within the mobile device 106. Alternately, the camera 207 may be detachably coupled to the mobile device 106 such as through a secure digital (SD) slot or over any suitable communications bus, such as USB (universal serial bus).

[0059] In an implementation, the image monitoring and capture module 456 may obtain an image and send the image to a financial institution (e.g., financial institution 130, the server 322, the server apparatus 570, etc.) for processing. In an implementation, the client apparatus 450 may comprise a browser such as a web browser, for accessing a website on the Internet or other network associated with a financial institution. The user may access the website and select a "monitor and capture image" link or similar icon, button or link, for example, displayed on the browser. Such a selection may call the image monitoring and capture module 456 on the client apparatus 450.

[0060] The communications module 452 may be configured, in one example, to receive and send data signals over a suitable communications network. This may include, without limitation, GSM/GPR3, HSDPA, CDMA, TDMA, 802.11, 802.16 and the like. While the bandwidth available to the mobile device 106 may be an implementation concern such discussion is outside the scope of the present discussion and any suitable wireless

communications network is considered to be within the scope of the present discussion. With respect to the present discussion, the communications module 452 may receive one or more processed check images 460 from the check processing module 454 and may transmit them over the suitable communications network to the depository 204, as described herein.

[0061] The check processing module 454 may be configured, in one example, to cause the image monitoring and capture module 456 to monitor an image of at least one side of a check provided in a field of view of the camera 207 and then capture the image after it passes monitoring criteria. Compliance with the monitoring criteria is intended to ensure that the image of the check is suitable for one or more processing tasks. For instance, if the check is rotated 45 degrees clockwise when captured, the check processing module 454 or a software object operated on the server 322 described above may be unable to optically detect information on the check.

[0062] The check processing module 454 may perform one or more cleaning or processing operations on the captured image of the check. Such cleaning or processing may include dewarping and/or deskewing (if not part of the monitoring criteria, in an implementation), for example. Cleaning or processing may include down-converting the image received from the image capture module to a suitable size, such as 200 dots per inch (DPI) resolution or in a resolution range such as 200 DPI to 400 DPI, 300 DPI to 500 DPI, etc., and/or converting the image to grayscale or black and white. Such operation(s) may reduce the file size of the check image. Alternatively, the check processing module 454 may send instructions to the image monitoring and capture module 456 to cause the image monitoring and capture module 456 to capture an image of the check at a suitable resolution. The check processing module 454 may additionally perform any of the following operations, in further examples: convert from JPEG to TIFF, detect check information, perform signature detection on the image of the check, and the like. The check processing module 454 may, alternatively, send the captured check image to the server described herein for such processing, and receive confirmation that the operations were completed before further operations can proceed.

[0063] The size of the file sent between the mobile device and the server may be small. This runs counter with respect to automatic check detection against a background. If captured in color, the contrast between check and background becomes easier. However, the

processed image sent over the communications network may need to be smaller, and if the detection operation is performed by the server, it may be advantageous to convert the captured image to grayscale, or even black and white, before transmission to the server. Grayscale images are compliant with the Check 21 Act.

[0064] While "flat" is a fairly well known term to users, each user's appreciation of flat with respect to the camera lens of the camera 207 associated with the mobile device 106 may result in a problem with needing to align the check image programmatically or risk rejecting a large number of check images. As the image captured is a set of pixels, a tilted image will result in a jagged polygon rather than a perfect rectangle. Using convex hull algorithms, the check processing modules may create a smooth polygon around the boundary and remove the concavity of the check image. Alternatively, a rotating calipers algorithm may be used to determine the tightest fitting rectangle around the check boundary, which can then be used to determine the angle of it, with that angle being used to align the check properly.

[0065] The server apparatus 570 may include one or more software objects operating on a server operated by the depository 204. Aspects of an example server apparatus are described with respect to Figure 10. The server apparatus 570 may include a communications module 572, a check processing module 574, and a check clearance module 576. The server apparatus 570 may receive one or more processed images 460 from a mobile device 106 or a client apparatus 450 as an input and may output a file such as a Check 21 compliant file 578. The Check 21 compliant file 578 may be a file or entry in a record set that is compliant with the clearinghouse rules set forth in the Check 21 Act and may include outputting an X9.37 file, in one example.

[0066] The communications module 572 may be configured to receive a wireless communication from the mobile device 106 over any suitable communications network, such as those described above. The communications module 572 may additionally receive a communication over a different communications network than the mobile device 106 communicated on, such as receiving the communication over a TCP/IP (Transmission Control Protocol / Internet Protocol) connection from the user's communication provider.

[0067] The check processing module 574 may be configured, in one example, to perform one or more check processing operations on the processed image(s) 460 that are

received. In an implementation, these operations may include any of the operations described herein with respect to the check processing module 454. The operation of signature verification may be performed by the check processing module 574 of the server apparatus 570 as the server apparatus 570 may interface with other systems of the depository 204 that may maintain previously verified signature samples of the user 102. Performing signature verification at the client apparatus 450 may be computationally unfeasible; additionally, there may be a security risk if the signature sample is stored on the user's own device.

[0068] A cropped grayscale image may be sent to the server apparatus 570. The server apparatus 570 may extract information via a TIFF conversion and determine the DPI and re-scale to the proper DPI (e.g., convert to TIFF and detect the DPI that was used in the grayscale image). In an implementation, DPI detection may run on the client apparatus 450.

[0069] The check clearance module 576 may be configured, in one example, to receive a file from the check processing module 574 and may communicate with a check clearinghouse such that a Check 21 compliant file may be delivered to the check clearinghouse and funds may be received by the depository 204. The availability of the funds to the user 102 may be delayed by this operation such that the user 102 only has access to those funds when the depository 204 receives confirmation that the check has cleared.

[0070] Figure 8 is an operational flow of an implementation of a method 800 that may be used for deposit of a check using image monitoring of the check. At 810, a request for access may be received from a user (e.g., the user 102). The user may request access to a deposit system operated by a depository (e.g., the depository 204) by way of a mobile device (e.g., the mobile device 106) such as a cellular phone, a PDA, a handheld computing device, etc. operated by the user. The access may be through some sort of user login, in some examples. The deposit system may be configured to receive a deposit of a negotiable instrument, such as a check, money order, cashier's check, etc. from the user and clear the negotiable instrument in a suitable clearinghouse system.

[0071] At 820, the system may initialize a software object on the mobile device. This may include sending instructions to the mobile device intended to execute a previously installed (i.e., pre-installed) software object. Alternatively, the system may send a software object to the mobile device that may execute the software object, carry out operations

described herein by use of the software object, and terminate the software object. In an implementation, the system may instruct a camera associated with the mobile device to monitor and capture an image of the negotiable instrument in conjunction with monitoring criteria.

[0072] The user may use the camera to obtain an image in the field of view of the camera, and at 830, the image in the field of view of the camera may be monitored with respect to one or more monitoring criteria, such as those described above. The monitoring may be performed by the camera, the mobile device, and/or a computing device associated with the depository, for example. The monitoring may be performed pursuant to instructions received at the camera or mobile device from the deposit system operated by a depository, the server 322, or the server apparatus 570, for example. In an implementation, the results of the monitoring may indicate that the camera and/or the check should be repositioned and/or the light source should be adjusted prior to an image capture in order to capture an image of the check that may be processed properly, e.g., to have the data from the check obtained without error from the image, so that that check can be cleared.

[0073] At 840, feedback based on the results may be generated and provided visually and/or aurally to the user via the camera and/or the mobile device. In an implementation, the feedback may be provided if the image fails to pass the monitoring criteria. The feedback may comprise instructions or guidance for the user to follow to obtain an image of the check in the field of view of the camera that will pass the monitoring criteria. Processing may continue at 830 with the image that is currently in the field of view of the camera (after the user has received and acted on the feedback) being monitored with respect to the monitoring criteria.

[0074] When the image in the field of view passes the monitoring criteria as determined at 830, the image in the field of view may be captured by the camera at 850. This may be accomplished through the software object accessing a camera associated with the mobile device (e.g., either comprised within the mobile device or separate from the mobile device). This may be done through an API exposed by the OS of the mobile device, or may be through software code customized for a specific phone and specific camera. With respect to the former, a developer of the software object may write code to the camera API(s), which may

be specific to the OS and without regard to the camera on the device. The user may initiate the capture of the image (e.g., by pressing a button on the camera or the mobile device) or the image may be captured automatically, without user intervention, as soon as the image in the field of view is determined to have passed the monitoring criteria. In this manner, the occurrence of non-conforming images downstream (e.g., at a depository or financial institution) is reduced, and there is a high confidence that the image will be properly processed downstream.

[0075] In an implementation, when the image in the field of view is determined to pass the monitoring criteria, feedback may be generated and provided to the user indicating so. The feedback may instruct the user to capture the image now (e.g., by pressing a button on the camera or mobile device) or may advise the user that the image has been captured, for example.

[0076] At 860, the captured image may be transmitted to the depository, e.g. as a digital image file. At 870, the depository may receive the image of the check (along with financial information pertaining to the account for depositing funds, for example) and may process the image. Processing of the digital image file may include retrieving financial information regarding the check. The financial information may comprise the MICR number, the routing number, an amount, etc. Any known image processing technology may be used, such as edge detection, filtering to remove imagery except the check image or check data in the received digital image file, image sharpening, and technologies to distinguish between the front and the back sides of the check. The depository may identify and/or remove at least a portion of data that is extraneous to the check, such as background data.

[0077] After retrieving the financial information from the check in an electronic data representation form, the depository may determine whether the financial information such as the amount payable to the user, the account associated with the user to deposit funds, an account associated with a payor to debit funds, and an institution associated with the payor, etc., may be valid. For example, the depository may include electronic devices such as computers, servers, databases, or the like that may be in communication with each other. The electronic devices may receive an electronic data representation and may perform an analysis on the quality of the data representation, the readability of the data representation, or the like.

For example, the electronic devices may determine whether the account number, amount payable, or the like may be readable such that they may be parsed and processed by the depository to credit an account associated with the user.

[0078] If the financial information is determined to be valid, the electronic data representation may be processed by the depository, thereby depositing the money in the user's account. If the financial information is determined to be invalid, then the user may be advised. For example, the depository may transmit an email, a web message, an instant message, or the like to the user indicating that the financial information associated with the electronic data representation may be invalid. The user may determine how to proceed by selecting an option on the web message, replying to the email, or the like.

[0079] Thus, in an implementation, instructions on how the user would like to proceed may be requested from the user, such as whether the user would like to try the deposit again (e.g., make another image of the check that pass the monitoring criteria and send it to the depository) or whether the user would like assistance from a representative, for example. The user may indicate how they would like to proceed. If the user would like assistance, the financial information may be transferred to a representative for further review. The representative may review the financial information associated with the electronic data representation to determine whether to allow the electronic data representation to be processed by the depository. If so, the electronic data representation of the financial information may be processed by the depository, thereby depositing the check in the user's account. The depository may send a notice to the user via email, facsimile, instant message, or mail, for example, that the check has been deposited into the selected account.

[0080] Figure 9 is an operational flow of another implementation of a method 900 that may be used for deposit of a check using image monitoring of the check. A user (e.g., the user 102) may receive and endorse a check (e.g., the check 108) at 910, and open a communication pathway with an institution (e.g., the financial institution 130) at 920. In an implementation, the user may open a communication pathway with the institution by logging into a website of the institution, for example. There may be several ways in which a communication pathway may be established, including, but not limited to, an Internet

connection via a website of the institution. The user may access the website and log into the website using credentials, such as, but not limited to, a username and a password.

[0081] At 930, the user may send a request to deposit the check and may select an account in which to deposit the check. In an implementation, the user may select a "deposit check" option provided on the website, and may enter details such as check amount, date, the account the check funds should be deposited in, comments, etc.

[0082] At 940, an image in the field of view of the camera may be obtained and provided, via the communication pathway, to the institution. A still image may be provided or a video may be provided, such as a video stream generated by the camera.

[0083] At 950, the institution may receive the image or video stream and may analyze the image or a frame of the video stream with respect to one or more monitoring criteria, such as those described above. Feedback pertaining to the image with respect to the monitoring criteria may be generated and provided to the user over the communication pathway. Based on the feedback, the user may adjust the position the camera and/or the check and/or may adjust the light source until the image in the field of view of the camera is determined by the institution to pass the monitoring criteria.

[0084] When the image in the field of view passes the monitoring criteria, the image in the field of view may be captured (e.g., automatically without user intervention or pursuant to the user pressing a button) by the camera at 960, thereby creating a digital image of the check. In an implementation, the user may instruct the camera (e.g., by pressing a button on the camera or the mobile device) to create the digital image. In another implementation, the camera may automatically create the digital image as soon as the image of the check passes the monitoring criteria. In this manner, the user may point the camera at the check such that the image of the check appears in the field of view, and after image has been determined to pass the monitoring criteria, a digital image of the check may be created without further user intervention. Depending on the implementation, one or more digital images of the check (e.g., corresponding to the front and back of the check) may be created using such techniques.

[0085] At 970, the digital image(s) may be uploaded to the institution using any known image upload process. In an implementation, the upload may be augmented by secondary data which may be information relating to the deposit of the check, such as an

account number and a deposit amount, for example. At 980, when the institution has received the digital images (e.g., of the front and back sides of the check), the institution may process the digital images to obtain an image of the check and to deposit the funds of the check in the user's account, as described herein. It is contemplated that processing such as grayscale conversion, image cropping, image compression, edge and/or corner detection, etc. may be implemented in the method 900. Such operations may be performed on one or more digital images created by the camera and may be performed on the image(s) by the mobile device and/or by the institution, as described further above.

[0086] Although the examples described herein may refer to uploading of images of checks to an institution, it is contemplated that any negotiable instrument or image (e.g., vehicle accident pictures provided to an insurance company) may be processed and/or transmitted using the techniques described herein. Additionally, one or more of the techniques described herein may be performed by the institution instead of the mobile device of the user.

[0087] Figure 10 is a block diagram of an example computing environment in which example embodiments and aspects may be implemented. The computing system environment is only one example of a suitable computing environment and is not intended to suggest any limitation as to the scope of use or functionality. Numerous other general purpose or special purpose computing system environments or configurations may be used. Examples of well known computing systems, environments, and/or configurations that may be suitable for use include, but are not limited to, personal computers (PCs), server computers, handheld or laptop devices, multiprocessor systems, microprocessor-based systems, network PCs, minicomputers, mainframe computers, embedded systems, distributed computing environments that include any of the above systems or devices, and the like.

[0088] Computer-executable instructions, such as program modules, being executed by a computer may be used. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Distributed computing environments may be used where tasks are performed by remote processing devices that are linked through a communications network or other data transmission medium. In a distributed computing environment, program modules

and other data may be located in both local and remote computer storage media including memory storage devices.

[0089] With reference to Figure 10, a system 1000 includes a computer 1010 connected to a network 1014. The computer 1010 includes a processor 1020, a storage device 1022, an output device 1024, an input device 1026, and a network interface device 1028, all connected via a bus 1030. The processor 1020 represents a central processing unit of any type of architecture, such as a CISC (Complex Instruction Set Computing), RISC (Reduced Instruction Set Computing), VLIW (Very Long Instruction Word), or a hybrid architecture, although any appropriate processor may be used. The processor 1020 executes instructions and includes that portion of the computer 1010 that controls the operation of the entire computer. Although not depicted in Figure 10, the processor 1020 typically includes a control unit that organizes data and program storage in memory and transfers data and other information between the various parts of the computer 1010. The processor 1020 receives input data from the input device 1026 and the network 1014 reads and stores code and data in the storage device 1022 and presents data to the output device 1024. Although the computer 1010 is shown to contain only a single processor 1020 and a single bus 1030, the disclosed embodiment applies equally to computers that may have multiple processors and to computers that may have multiple busses with some or all performing different functions in different ways.

[0090] The storage device 1022 represents one or more mechanisms for storing data. For example, the storage device 1022 may include read-only memory (ROM), RAM, magnetic disk storage media, optical storage media, flash memory devices, and/or other machine-readable media. In other embodiments, any appropriate type of storage device may be used. Although only one storage device 1022 is shown, multiple storage devices and multiple types of storage devices may be present. Further, although the computer 1010 is drawn to contain the storage device 1022, it may be distributed across other computers, for example on a server.

[0091] The storage device 1022 includes a controller (not shown in Figure 10) and data items 1034. The controller includes instructions capable of being executed on the processor 1020 to carry out functions previously described herein with reference to Figures 1-

FIFTH THIRD EX1033
Page 33 of 959

9. In another embodiment, some or all of the functions are carried out via hardware in lieu of a processor-based system. In one embodiment, the controller is a web browser, but in other embodiments the controller may be a database system, a file system, an electronic mail system, a media manager, an image manager, or may include any other functions capable of accessing data items. The storage device 1022 may also contain additional software and data (not shown), which is not necessary to understand the invention. Although the controller and the data items 1034 are shown to be within the storage device 1022 in the computer 1010, some or all of them may be distributed across other systems, for example on a server and accessed via the network 1014.

[0092] The output device 1024 is that part of the computer 1010 that displays output to the user. The output device 1024 may be a liquid crystal display (LCD) well-known in the art of computer hardware. In other embodiments, the output device 1024 may be replaced with a gas or plasma-based flat-panel display or a traditional cathode-ray tube (CRT) display. In still other embodiments, any appropriate display device may be used. Although only one output device 1024 is shown, in other embodiments any number of output devices of different types, or of the same type, may be present. In an embodiment, the output device 1024 displays a user interface. The input device 1026 may be a keyboard, mouse or other pointing device, trackball, touchpad, touch screen, keypad, microphone, voice recognition device, or any other appropriate mechanism for the user to input data to the computer 1010 and manipulate the user interface previously discussed. Although only one input device 1026 is shown, in another embodiment any number and type of input devices may be present.

[0093] The network interface device 1028 provides connectivity from the computer 1010 to the network 1014 through any suitable communications protocol. The network interface device 1028 sends and receives data items from the network 1014. The bus 1030 may represent one or more busses, e.g., USB, PCI, ISA (Industry Standard Architecture), X-Bus, EISA (Extended Industry Standard Architecture), or any other appropriate bus and/or bridge (also called a bus controller).

[0094] The computer 1010 may be implemented using any suitable hardware and/or software, such as a personal computer or other electronic computing device. Portable computers, laptop or notebook computers, PDAs, pocket computers, appliances, telephones,

FIFTH THIRD EX1033
Page 34 of 959

and mainframe computers are examples of other possible configurations of the computer 1010. For example, other peripheral devices such as audio adapters or chip programming devices, such as EPROM (Erasable Programmable Read-Only Memory) programming devices may be used in addition to, or in place of, the hardware already depicted.

[0095] The network 1014 may be any suitable network and may support any appropriate protocol suitable for communication to the computer 1010. In an embodiment, the network 1014 may support wireless communications. In another embodiment, the network 1014 may support hard-wired communications, such as a telephone line or cable. In another embodiment, the network 1014 may support the Ethernet IEEE (Institute of Electrical and Electronics Engineers) 802.3x specification. In another embodiment, the network 1014 may be the Internet and may support IP (Internet Protocol). In another embodiment, the network 1014 may be a LAN or a WAN. In another embodiment, the network 1014 may be a hotspot service provider network. In another embodiment, the network 1014 may be an intranet. In another embodiment, the network 1014 may be a GPRS (General Packet Radio Service) network. In another embodiment, the network 1014 may be any appropriate cellular data network or cell-based radio network technology. In another embodiment, the network 1014 may be an IEEE 802.11 wireless network. In still another embodiment, the network 1014 may be any suitable network or combination of networks. Although one network 1014 is shown, in other embodiments any number of networks (of the same or different types) may be present.

[0096] It should be understood that the various techniques described herein may be implemented in connection with hardware or software or, where appropriate, with a combination of both. Thus, the methods and apparatus of the presently disclosed subject matter, or certain aspects or portions thereof, may take the form of program code (i.e., instructions) embodied in tangible media, such as floppy diskettes, CD-ROMs, hard drives, or any other machine-readable storage medium wherein, when the program code is loaded into and executed by a machine, such as a computer, the machine becomes an apparatus for practicing the presently disclosed subject matter. In the case of program code execution on programmable computers, the computing device generally includes a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage

FIFTH THIRD EX1033
Page 35 of 959

elements), at least one input device, and at least one output device. One or more programs may implement or use the processes described in connection with the presently disclosed subject matter, e.g., through the use of an API, reusable controls, or the like. Such programs may be implemented in a high level procedural or object-oriented programming language to communicate with a computer system. However, the program(s) can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language and it may be combined with hardware implementations.

[0097] Although exemplary embodiments may refer to using aspects of the presently disclosed subject matter in the context of one or more stand-alone computer systems, the subject matter is not so limited, but rather may be implemented in connection with any computing environment, such as a network or distributed computing environment. Still further, aspects of the presently disclosed subject matter may be implemented in or across a plurality of processing chips or devices, and storage may similarly be effected across a plurality of devices. Such devices might include personal computers, network servers, and handheld devices, for example. Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims.

What is claimed:

1. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

2. The method of claim 1, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

3. The method of claim 1, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

4. The method of claim 3, wherein the plurality of monitoring criteria includes a criterion based on magnetic ink character recognition (MICR) line detection.

5. The method of claim 3, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

6. The method of claim 1,

wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user's mobile device, and

wherein the confirming is based on the receiving the indication of the result of the processing the digital image of the check.

7. The method of claim 1, wherein the digital image is a modified version of the captured video frame.

8. The method of claim 1, wherein the wireless network is a cellular network.

9. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

10. The method of claim 9, further comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

11. The method of claim 9, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

12. The method of claim 9, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

13. The method of claim 12, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

14. The method of claim 9, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising the monitoring, the determining, the providing, and the confirming.

15. The method of claim 9, wherein the confirming step is performed before the submitting step and the user's mobile device receives an indication of a result of the processing the digital image of the check before the confirming step.

16. The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

17. The method of claim 9, wherein the wireless network is a cellular network.

18. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

FIFTH THIRD EX1033
Page 43 of 959

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

19. The method of claim 18, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

20. The method of claim 18, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

21. The method of claim 20, wherein the plurality of monitoring criteria being based on magnetic ink character recognition (MICR) line detection and one or both of corner detection and edge detection.

22. The method of claim 20, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

23. The method of claim 18, wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user's mobile device.

24. The method of claim 18, wherein the digital image is a modified version of the captured video frame.

25. The method of claim 18, wherein the wireless network is a cellular network.

26. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the user’s mobile device or is based on the digital image transmitted by the user’s mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

27. The method of claim 26, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

28. The method of claim 26, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

29. The method of claim 28, wherein the plurality of monitoring criteria includes a criterion based on magnetic ink character recognition (MICR) line detection.

30. The method of claim 26, wherein the wireless network is a cellular network.

FIFTH THIRD EX1033
Page 48 of 959

ABSTRACT

An image of a check that is in the field of view of a camera is monitored prior to the image of the check being captured. The camera is associated with a mobile device. When the image of the check in the field of view passes monitoring criteria, an image may be taken by the camera and provided from the mobile device to a financial institution. The image capture may be performed automatically as soon as the image of the check is determined to pass the monitoring criteria. The check may be deposited in a user's bank account based on the image. Any technique for sending the image to the financial institution may be used. Feedback may be provided to the user of the camera regarding the image of the check in the field of view.

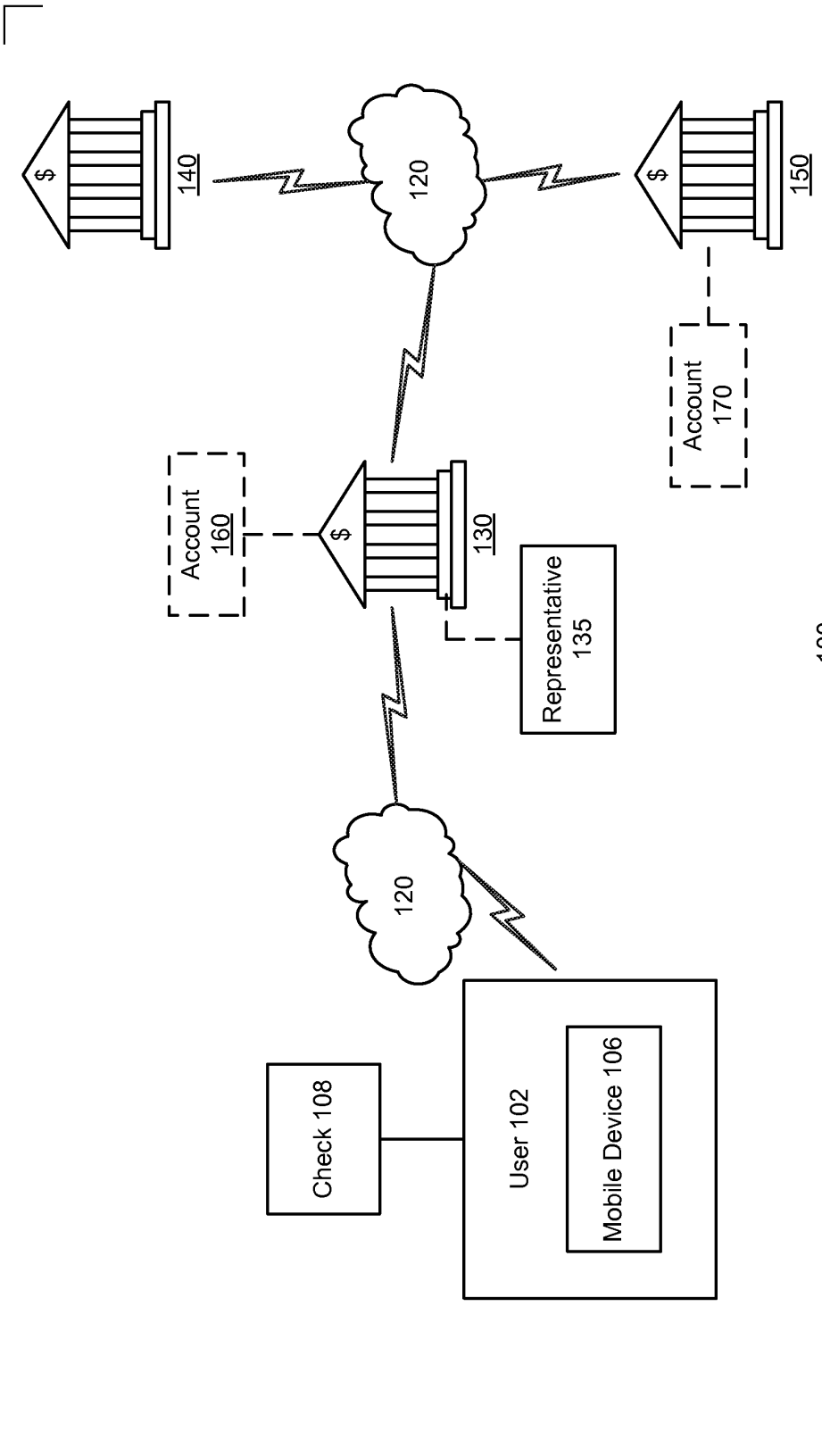
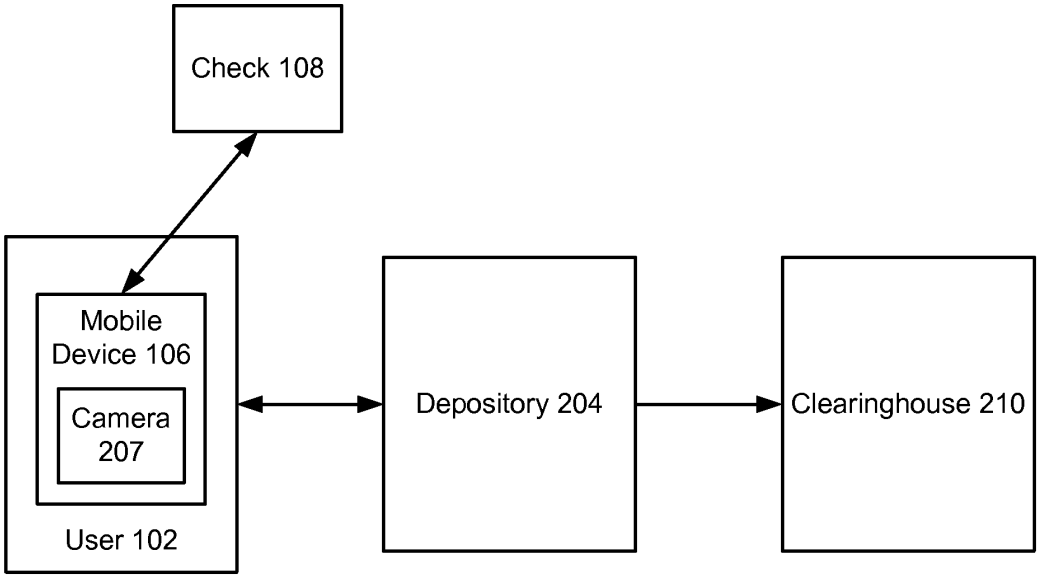

$
140
120
$
150
Account
170
Account
160
$
130
Representative
135
100
120
Check 108
User 102
Mobile Device 106

FIG. 1


Check 108
Mobile Device 106
Camera 207
User 102
Depository 204
Clearinghouse 210

200

FIG. 2

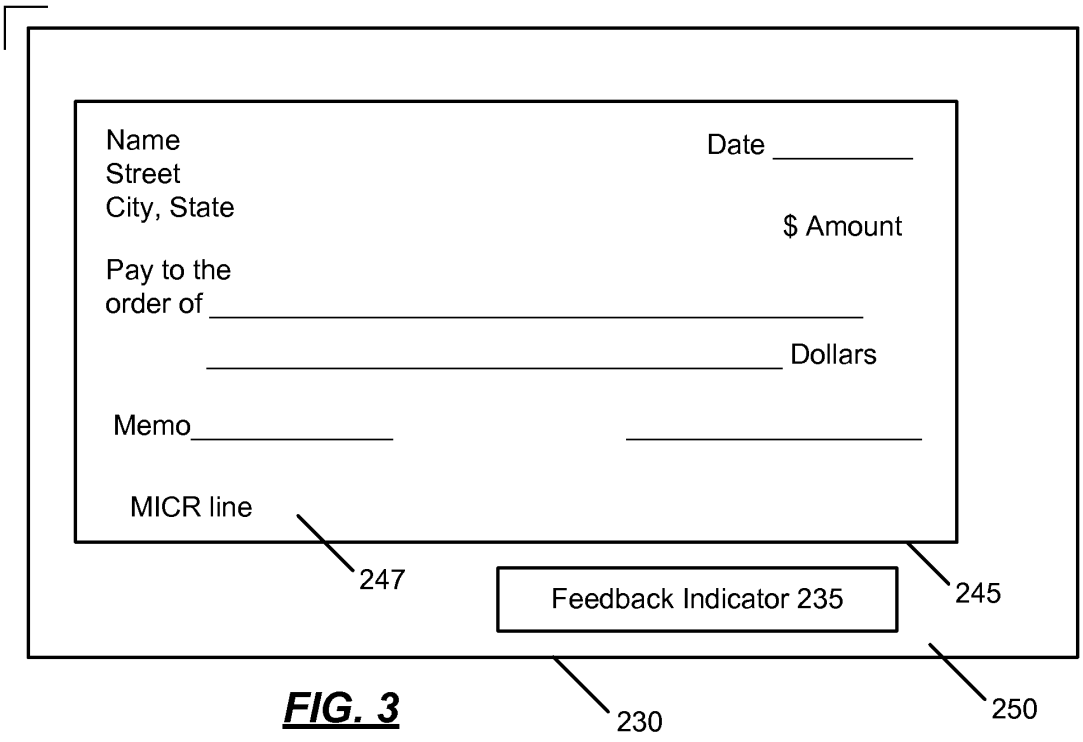

Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
247
Feedback Indicator 235
245
230
250

FIG. 3

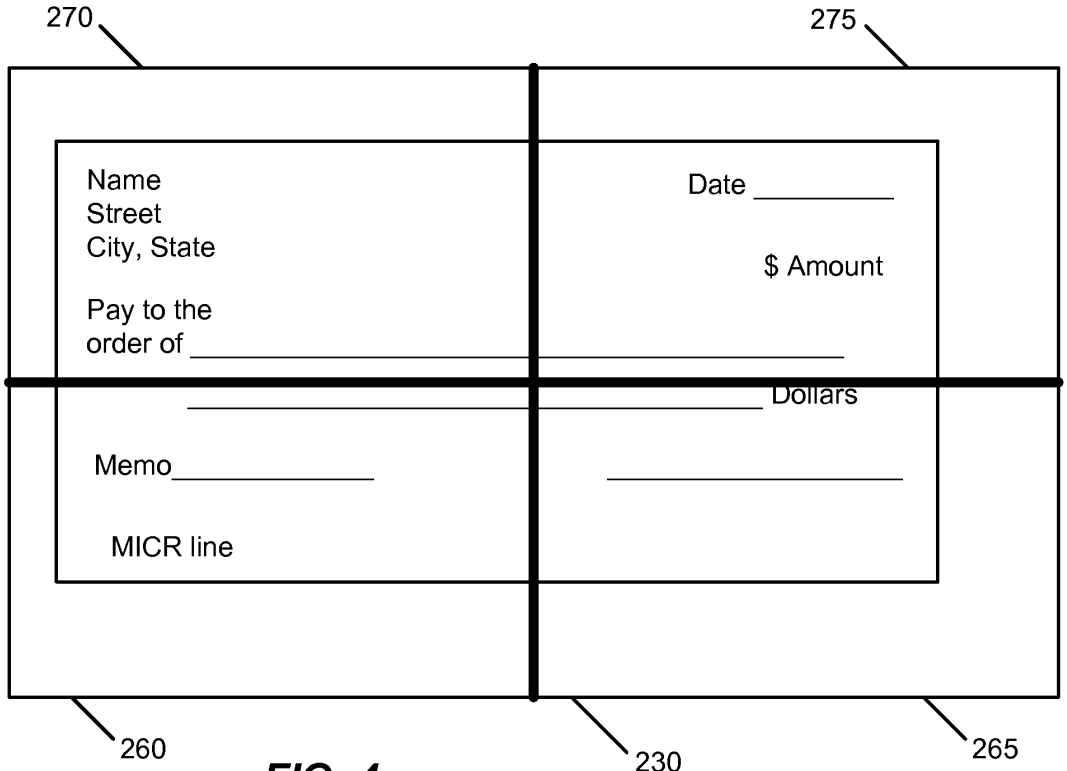
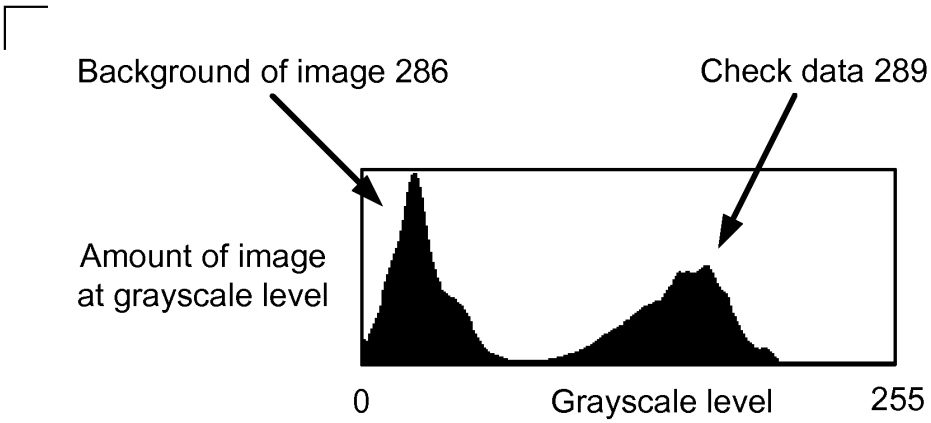
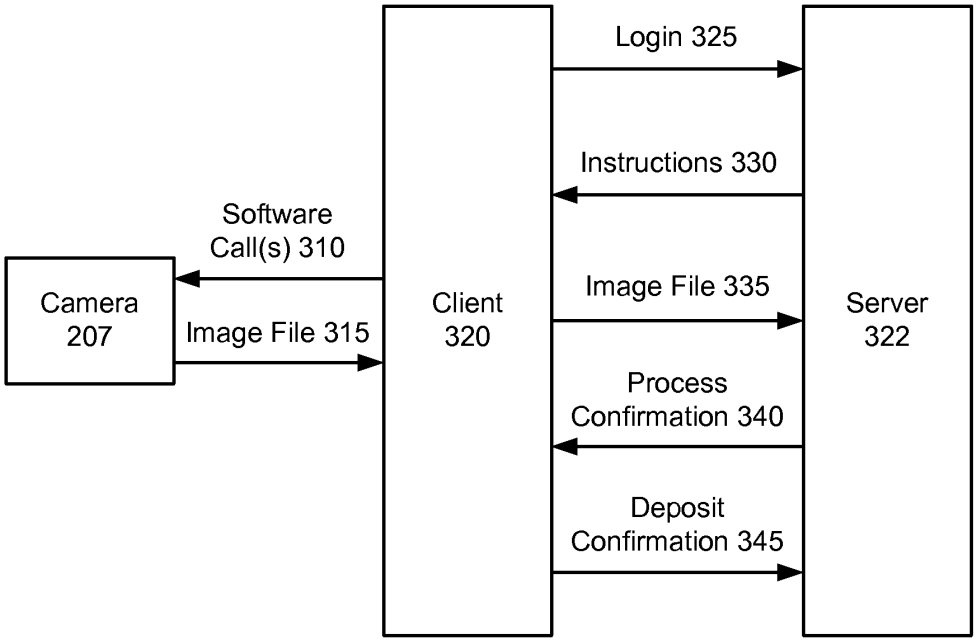

270
275
Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
260
230
265

FIG. 4



280

FIG. 5



300

FIG. 6

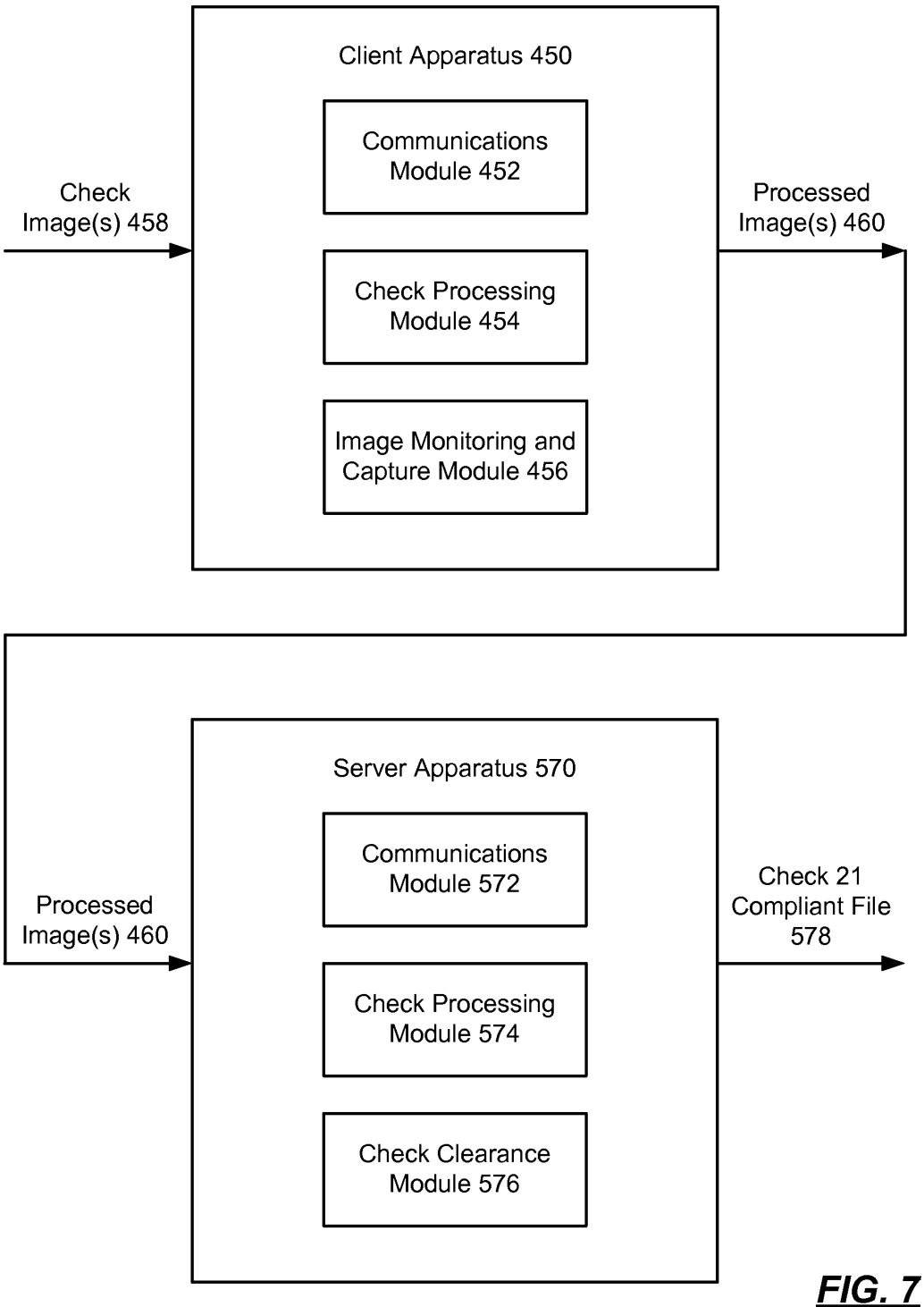

Client Apparatus 450
Communications Module 452
Check Processing Module 454
Image Monitoring and Capture Module 456
Check Image(s) 458
Processed Image(s) 460
Server Apparatus 570
Communications Module 572
Check Processing Module 574
Check Clearance Module 576
Processed Image(s) 460
Check 21 Compliant File 578

FIG. 7

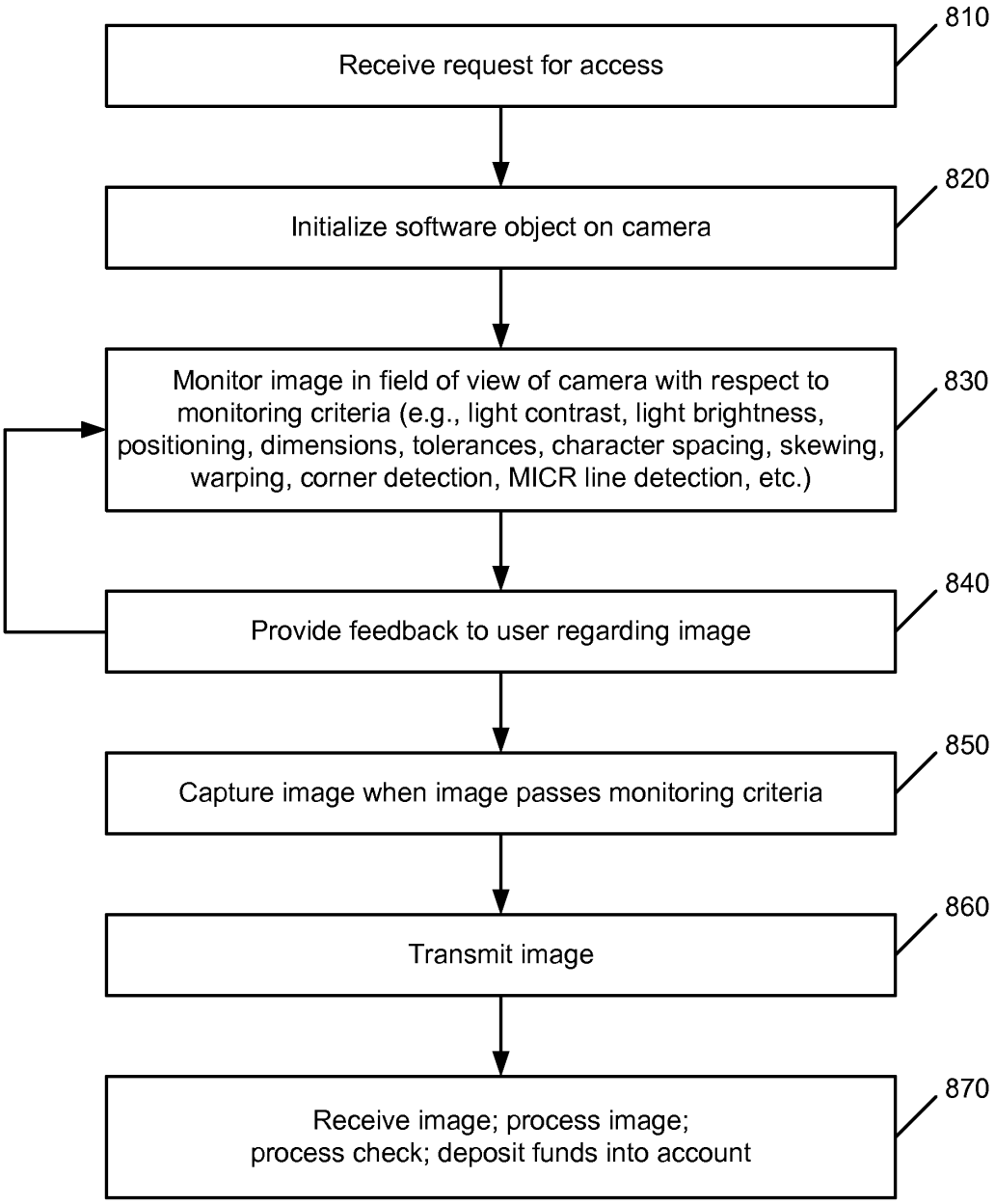

Receive request for access
810
Initialize software object on camera
820
Monitor image in field of view of camera with respect to monitoring criteria (e.g., light contrast, light brightness, positioning, dimensions, tolerances, character spacing, skewing, warping, corner detection, MICR line detection, etc.)
830
Provide feedback to user regarding image
840
Capture image when image passes monitoring criteria
850
Transmit image
860
Receive image; process image; process check; deposit funds into account
870
800

FIG. 8

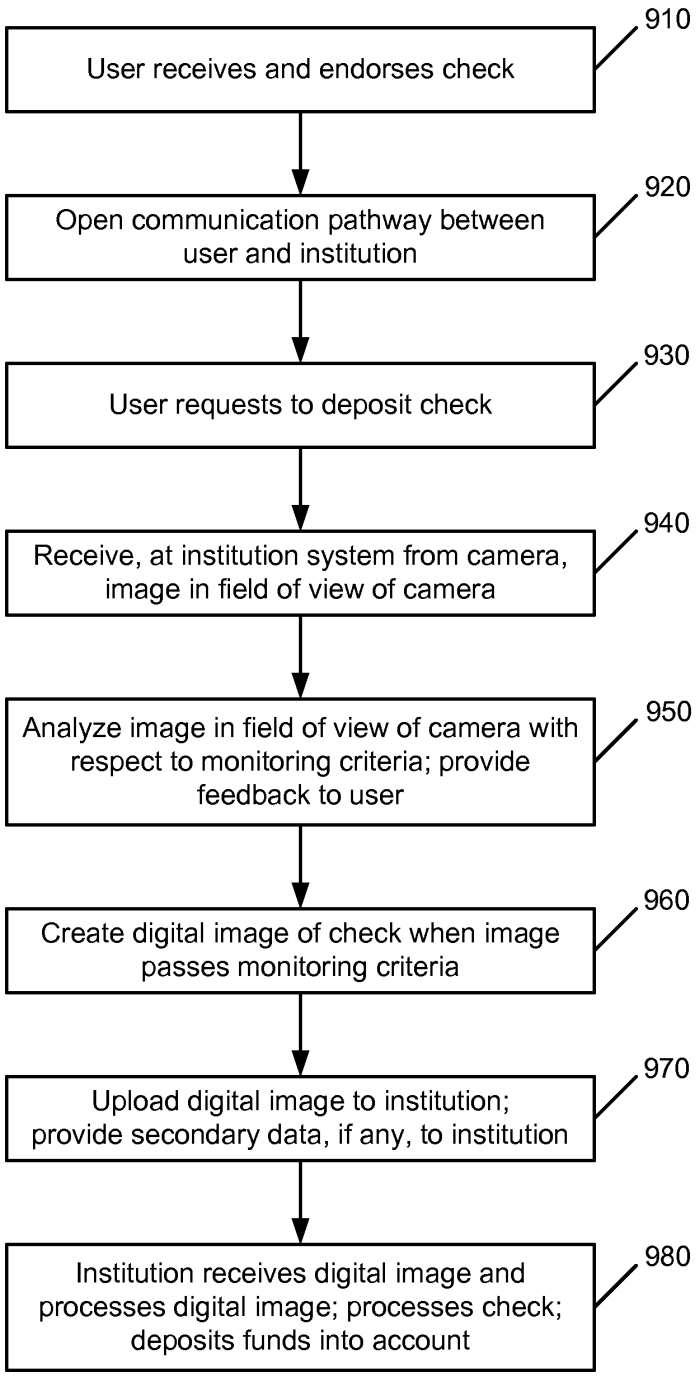

User receives and endorses check
910
Open communication pathway between user and institution
920
User requests to deposit check
930
Receive, at institution system from camera, image in field of view of camera
940
Analyze image in field of view of camera with respect to monitoring criteria; provide feedback to user
950
Create digital image of check when image passes monitoring criteria
960
Upload digital image to institution; provide secondary data, if any, to institution
970
Institution receives digital image and processes digital image; processes check; deposits funds into account
980
900

FIG. 9

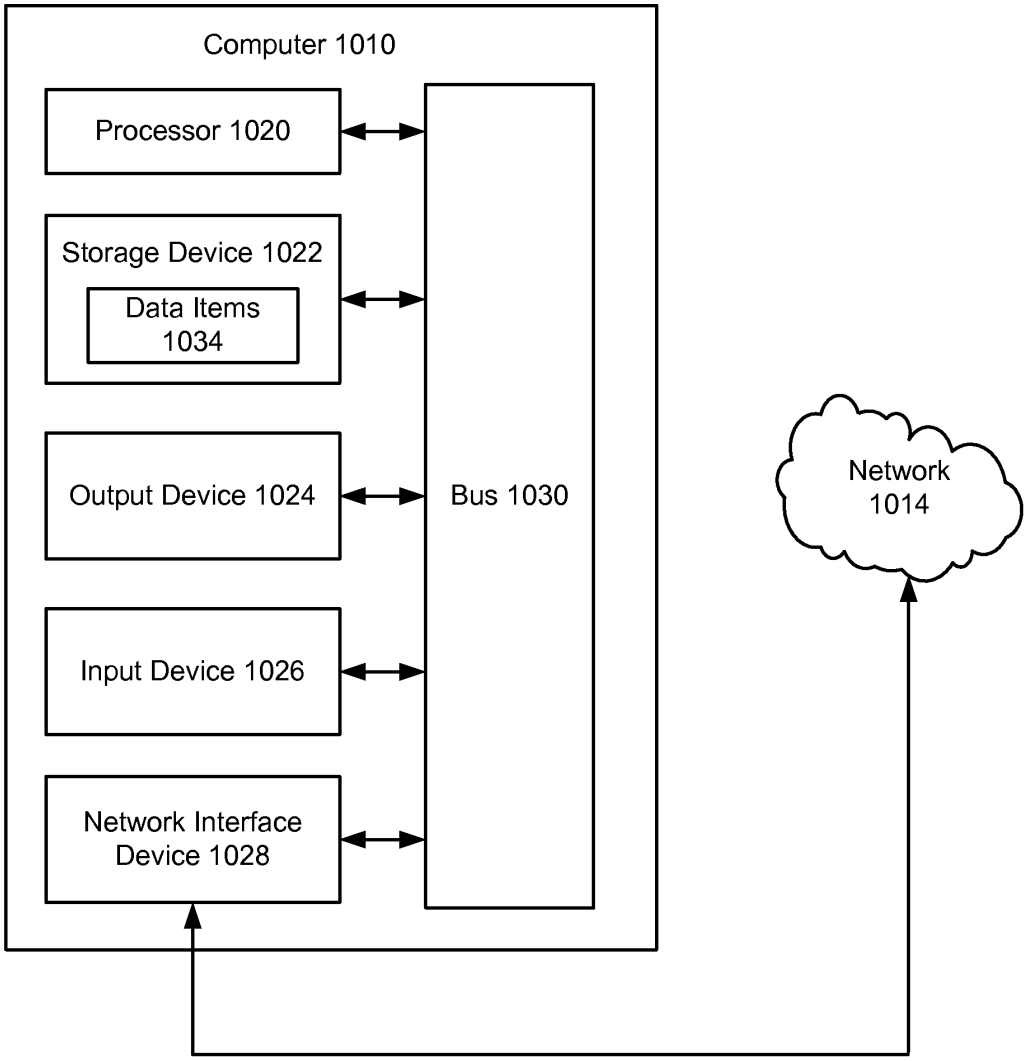

Computer 1010
Processor 1020
Storage Device 1022
Data Items 1034
Output Device 1024
Input Device 1026
Network Interface Device 1028
Bus 1030
Network 1014
1000

FIG. 10

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael P. Bueche, Jr. Art Unit: To be assigned

Appln. No.: To be assigned Examiner: To be assigned

Filed: Herewith

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Prior to examination, please amend the above-identified patent application as indicated below.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 13 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

FIFTH THIRD EX1033
Page 59 of 959

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the

app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

Claims 2-5 (Cancelled).

6. (Original) The method of claim 1,

wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user's mobile device, and

wherein the confirming is based on the receiving the indication of the result of the processing the digital image of the check.

7. (Original) The method of claim 1, wherein the digital image is a modified version of the captured video frame.

8. (Original) The method of claim 1, wherein the wireless network is a cellular network.

9. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live

video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the

FIFTH THIRD EX1033
Page 63 of 959

bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

10. (Cancelled).

11. (Original) The method of claim 9, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

Claims 12-15 (Cancelled).

16. (Original) The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

17. (Original) The method of claim 9, wherein the wireless network is a cellular network.

18. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least

one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

Claims 19-22 (Cancelled).

23. (Original) The method of claim 18, wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user’s mobile device.

24. (Original) The method of claim 18, wherein the digital image is a modified version of the captured video frame.

25. (Original) The method of claim 18, wherein the wireless network is a cellular network.

26. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the

user's mobile device or is based on the digital image transmitted by the user's mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

Claims 27-29 (Cancelled).

30. (Original) The method of claim 26, wherein the wireless network is a cellular network.

REMARKS

By this Preliminary Amendment, claims 2-5, 10, 12-15, 19-22, and 27-29 have been cancelled without prejudice or disclaimer. Claims 1, 6-9, 11, 16-18, 23-26, and 30 are pending.

An action on the merits is respectfully requested.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c | 32-10527US2) any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: December 2, 2024

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Michael	Patrick	Bueche	Jr.

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Antonio	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

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City	San Antonio	State/Province	TX
Postal Code	78260	Country	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Bharat		Prasad	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Antonio	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

Address 1	114 Sable Heights		
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Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Minya		Liang	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
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Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

City	San Antonio	State/Province	TX	Country of Residence	US

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Address 1	7314 Eagle Hills		
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Postal Code	78249	Country	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Reynaldo		Medina	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Antonio	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

Address 1	9218 Dublin Heights		
Address 2			
City	San Antonio	State/Province	TX
Postal Code	78254	Country	US

Inventor 5 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Charles	Lee	Oakes	III

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Boerne	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

Address 1	119 Roadrunner Circle		
Address 2			
City	Boerne	State/Province	TX
Postal Code	78006	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

Customer Number	197306		
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Application Information:

Title of the Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING		
Attorney Docket Number	US-0691.12c | 32-10527US2	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	8	**Suggested Figure for Publication (if any)**	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☒ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	197306		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	18593856	2024-03-01
Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
18593856	Continuation of	17161235	2021-01-28
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17161235	Continuation of	16712182	2019-12-12	11341465	2022-05-24

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16712182	Continuation of	16280455	2019-02-20
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16280455	Continuation of	15792966	2017-10-25	10235660	2019-03-19

Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15792966	Continuation of	15392950	2016-12-28	9818090	2017-11-14

Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15392950	Continuation of	13922686	2013-06-20	9569756	2017-02-14

Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13922686	Continuation of	12545127	2009-08-21	8977571	2015-03-10

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

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Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
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Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

(•) Assignee	( ) Legal Representative under 35 U.S.C. 117	( ) Joint Inventor
( ) Person to whom the inventor is obligated to assign.	( ) Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. [X]

Organization Name	United Services Automobile Association (USAA)		
Mailing Address Information For Applicant:			
Address 1	9800 Fredericksburg Road		
Address 2			
City	San Antonio	**State/Province**	TX
Country	US	Postal Code	78288
Phone Number		Fax Number	
Email Address			

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Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☒

Organization Name	United Services Automobile Association (USAA)

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	9800 Fredericksburg Road		
Address 2			
City	San Antonio	**State/Province**	TX
Country i	US	Postal Code	78288
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

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NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Christopher R. Abidin/			Date (YYYY-MM-DD)	2024-12-02
First Name	Christopher	Last Name	Abidin	Registration Number	74742

Additional Signature may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12c | 32-10527US2
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria,** V**A 22313-1450.**

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NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)

First Named Inventor	Michael Patrick Bueche Jr.
Title	SYSTEM AND METHOD FOR MOBILE CHECK
Attorney Docket Number	US-0691.12c | 32-10527US2

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).

/Christopher R. Abidin/ — Signature

Dec. 2, 2024 — Date

Christopher R. Abidin — Typed or printed name

74742 — Registration Number, if applicable

703-646-9251 — Telephone Number

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing.**

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael P. Bueche, Jr. Art Unit: To be assigned

Appln. No.: To be assigned Examiner: To be assigned

Filed: Herewith

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Prior to examination, please amend the above-identified patent application as indicated below.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 13 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the

app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

Claims 2-5 (Cancelled).

6. (Original) The method of claim 1,

wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user's mobile device, and

wherein the confirming is based on the receiving the indication of the result of the processing the digital image of the check.

7. (Original) The method of claim 1, wherein the digital image is a modified version of the captured video frame.

8. (Original) The method of claim 1, wherein the wireless network is a cellular network.

9. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live

video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the

bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

10. (Cancelled).

11. (Original) The method of claim 9, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

Claims 12-15 (Cancelled).

16. (Original) The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

17. (Original) The method of claim 9, wherein the wireless network is a cellular network.

18. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least

one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

Claims 19-22 (Cancelled).

23. (Original) The method of claim 18, wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user’s mobile device.

24. (Original) The method of claim 18, wherein the digital image is a modified version of the captured video frame.

25. (Original) The method of claim 18, wherein the wireless network is a cellular network.

26. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the

user's mobile device or is based on the digital image transmitted by the user's mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

Claims 27-29 (Cancelled).

30. (Original) The method of claim 26, wherein the wireless network is a cellular network.

REMARKS

By this Preliminary Amendment, claims 2-5, 10, 12-15, 19-22, and 27-29 have been cancelled without prejudice or disclaimer. Claims 1, 6-9, 11, 16-18, 23-26, and 30 are pending.

An action on the merits is respectfully requested.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c | 32-10527US2) any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: December 2, 2024

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SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

BACKGROUND

[0001] Checks typically provide a safe and convenient method for an individual such as a payor to transfer funds to a payee. To use a check, the individual usually opens a checking account, or other similar account, at a financial institution and deposits funds, which are then available for later withdrawal. To transfer funds with a check, the payor usually designates a payee and an amount payable on the check. In addition, the payor often signs the check. Once the check has been signed, it is usually deemed negotiable, meaning the check may be validly transferred to the payee upon delivery. By signing and transferring the check to the payee, the payor authorizes funds to be withdrawn from the payor's account on behalf of the payee.

[0002] While a check may provide a payor with a convenient and secure form of payment, receiving a check may put certain burdens on the payee, such as the time and effort required to deposit the check. For example, depositing a check typically involves going to a local bank branch and physically presenting the check to a bank teller. To reduce such burdens for the payee, systems and methods have been developed to enable the remote deposit of checks. For example, the payee may capture a digital image of a check using a mobile device. The financial institution may then receive from the payee the digital image of the check. The financial institution may then use the digital image to credit funds to the payee. However, such a technique requires the efficient and accurate detection and extraction of the information pertaining to a check in the digital image. Capturing a digital image at a mobile device that allows for subsequent detection and extraction of the information from the digital image is difficult.

SUMMARY

[0003] An image of a check that is in the field of view of a camera is monitored prior to the image of the check being captured. The camera is associated with a mobile device. The monitoring may be performed by the camera, the mobile device, and/or a financial institution that is in communication with the mobile device. When the image of the check in the field of view passes monitoring criteria, an image may be taken by the camera and provided from the mobile device to a financial institution. The check may be deposited in a user's bank account based on the image. Any technique for sending the image to the financial institution may be used.

[0004] In an implementation, the image capture may be performed automatically by the camera, the mobile device, and/or the financial institution as soon as the image of the check is determined to pass the monitoring criteria. In an implementation, feedback may be provided to the user of the camera regarding the image of the check in the field of view. The user may reposition the check and/or the camera, for example, responsive to the feedback. Alternatively, the user may capture an image of the check responsive to the feedback.

[0005] This summary is provided to introduce a selection of concepts in a simplified form that are further described below in the detailed description. This summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The foregoing summary, as well as the following detailed description of illustrative embodiments, is better understood when read in conjunction with the appended drawings. For the purpose of illustrating the embodiments, there are shown in the drawings example constructions of the embodiments; however, the embodiments are not limited to the specific methods and instrumentalities disclosed. In the drawings:

Figure 1 is a block diagram of an implementation of a system in which example embodiments and aspects may be implemented;

Figure 2 shows a high-level block diagram of an implementation of a system that may be used for the deposit of a check;

Figure 3 is a diagram of an example image comprising a check image, a background image, and feedback;

Figure 4 is a diagram of an example image divided into segments that may be used for monitoring the image;

Figure 5 is a diagram of an example histogram for a segment of an image comprising check data and background data;

Figure 6 shows a data flow diagram of a system for the deposit of a check, in accordance with an example embodiment;

Figure 7 shows a block diagram of a client apparatus and a server apparatus for the deposit of a check, in accordance with an example embodiment;

Figure 8 is an operational flow of an implementation of a method that may be used for deposit of a check using image monitoring of the check;

Figure 9 is an operational flow of another implementation of a method that may be used for deposit of a check using image monitoring of the check; and

Figure 10 is a block diagram of an example computing environment in which example embodiments and aspects may be implemented.

DETAILED DESCRIPTION

[0007] In the following detailed description of example embodiments, reference is made to the accompanying drawings, which form a part hereof and in which is shown, by way of illustration, specific embodiments in which the example methods, apparatuses, and systems may be practiced. It is to be understood that other embodiments may be used and structural changes may be made without departing from the scope of this description.

[0008] Figure 1 is a block diagram of an implementation of a system 100 in which example embodiments and aspects may be implemented. System 100 may include an account owner, referred to herein as a user 102, and financial institutions 130, 140, and 150, which may be any type of entity capable of processing a transaction involving a negotiable instrument. For example, financial institutions 130, 140, and 150 may be a retail bank, an investment bank, an investment company, a regional branch of the Federal Reserve, a clearinghouse bank, and/or a correspondent bank.

[0009] A negotiable instrument typically includes a type of contract that obligates one party to pay a specified sum of money to another party. Negotiable instrument as used herein is an unconditioned writing that promises or orders payment of a fixed amount of money. One example of a negotiable instrument is a check. The check may be taken by the receiving party and deposited into an account at a financial institution of the receiving party. The receiving party may endorse the check and then present it for deposit at a bank branch, via an automated teller machine (ATM), or by using remote deposit. Other examples of negotiable instruments include money orders, cashier's checks, drafts, bills of exchange, promissory notes, and the like. A money order is a trusted financial instrument that is a payment order for a pre-specified amount of money. A cashier's check (also known as a bank check, official check, teller's check, bank draft or treasurer's check) is a check guaranteed by a bank and may be purchased from a bank.

[0010] The user 102 may be an individual or entity who owns account 160 that may be held at financial institution 130. Account 160 may be any type of deposit account for depositing funds, such as a savings account, a checking account, a brokerage account, and the like. The user 102 may deposit a check 108 or other negotiable instrument in the account 160 either electronically or physically. The financial institution 130 may process and/or clear the check 108 or other negotiable instrument. The user 102 may communicate with financial institution 130 by way of communications network 120 such as an intranet, the Internet, a local area network (LAN), a wide area network (WAN), a wireless fidelity (WiFi) network, a public switched telephone network (PSTN), a cellular network, a voice over internet protocol (VoIP) network, and the like. The user 102 may communicate with financial institution 130 by phone, email, instant messaging, text messaging, web chat, facsimile, mail, and the like. Financial institutions 130, 140, and 150 also may communicate with each other by way of communications network 120.

[0011] In an implementation, the user 102 may receive payment from another individual such as a payor in the form of a check 108 or other negotiable instrument that is drawn from account 170 at financial institution 150. The user 102 may endorse the check 108 (e.g., sign the back of the check 108) and indicate an account number on the check 108 for depositing the funds. It is noted that although examples described herein may refer to a check,

the techniques and systems described herein are contemplated for, and may be used for, deposit of any negotiable instrument. Similarly, the techniques and systems described herein are contemplated for and may be used with any form or document whose image may be captured with a camera or other imaging device of a mobile device for subsequent storage and/or processing.

[0012] As described further herein, a digital image of a check or other negotiable instrument may be provided from a user to a financial institution, and the digital image may be processed and funds associated with the check or negotiable instrument in the digital image may be deposited in a user's bank account. The user 102 may deposit the check 108 into account 160 by making a digital image of the check 108 and sending the image file containing the digital image to financial institution 130. For example, after endorsing the check 108, the user 102 may use a mobile device 106 that comprises a camera to convert the check 108 into a digital image by taking a picture of the front and/or back of the check 108. The mobile device 106 may be a mobile phone (also known as a wireless phone or a cellular phone), a personal digital assistant (PDA), or any handheld computing device, for example. Aspects of an example mobile device are described with respect to Figure 10.

[0013] To increase the likelihood of capturing a digital image of the check 108 that may be readable and processed such that the check 108 can be cleared, the image is monitored for compliance with one or more monitoring criteria, prior to the image of the check 108 being captured. The monitoring criteria may be directed to proper lighting and/or framing of the check 108 in an image of the check 108 that will be captured and presented for clearing of the check 108. An application may monitor whether the check 108 is sufficiently within the frame of the camera and has a high enough quality for subsequent processing. The monitoring is performed with respect to the image as it appears in the field of view of the camera of the mobile device 106. The field of view is that part of the world that is visible through the camera at a particular position and orientation in space; objects outside the field of view when the image is captured are not recorded in the image. The monitoring criteria may be based on one or more of light contrast on the image, light brightness of the image, positioning of the image, dimensions, tolerances, character spacing, skewing, warping, corner detection, and MICR (magnetic ink character recognition) line detection, as described further herein. In an

FIFTH THIRD EX1033
Page 100 of 959

implementation, one or more histograms may be determined using the image being monitored. The histograms may be used in conjunction with monitoring criteria, as described further herein.

[0014] The monitoring may be performed by the camera, the mobile device 106, and/or a financial institution that is in communication with the mobile device 106. When the image of the check 108 in the field of view passes the monitoring criteria, an image may be taken by the camera and provided from the mobile device 106 to a financial institution. By ensuring that the image of the check passes monitoring criteria during pre-image capture monitoring, the number of non-conforming images of checks is reduced during presentment of the images to a financial institution for processing and clearing. In an implementation, feedback may be provided to the user 102 regarding the image of the check in the field of view. Based on the feedback, the user 102 may reposition the check 108 and/or the camera, for example, or may capture an image of the check 108.

[0015] In an implementation, the image capture may be performed automatically by the camera, the mobile device 106, and/or the financial institution as soon as the image of the check 108 is determined to pass the monitoring criteria. Alternatively, the user 102 may manually instruct the camera to perform the image capture (e.g., by pressing a button the camera or the mobile device 106) after the user 102 receives an indication or other feedback that the image passes the monitoring criteria.

[0016] In an implementation, the user 102 may send the digital image(s) to financial institution 130 using the mobile device 106. Any technique for sending a digital image to financial institution 130 may be used, such as providing a digital image to a website associated with financial institution 130 from storage, emailing a digital image to financial institution 130, or sending a digital image in a text message or instant message, for example.

[0017] Financial institution 130 may receive a digital image representing the check 108 and may use any known image processing software or other application(s) to obtain the relevant data of the check 108 from the digital image. Financial institution 130 may determine whether the financial information associated therewith may be valid. For example, financial institution 130 may include any combination of systems and subsystems such as electronic devices including, but not limited to, computers, servers, databases, or the like. The electronic

devices may include any combination of hardware components such as processors, databases, storage drives, registers, cache, random access memory (RAM) chips, data buses, or the like and/or software components such as operating systems, database management applications, or the like. According to an embodiment, the electronic devices may include a network-based server that may process the financial information and may receive the digital image from the user 102.

[0018] The electronic devices may receive the digital image and may perform an analysis on the quality of the digital image, the readability of the data contained therein, or the like. For example, the electronic devices may determine whether the account number, amount payable, and the like may be readable such that it may be parsed or otherwise obtained and processed by the financial institution to credit an account 160 associated with the user 102 and debit an account associated with the payor. In an implementation, a representative 135 of financial institution 130 may provide assistance to the user 102 and may provide assistance in determining whether the financial information may be readable and/or of a good enough quality to be processed.

[0019] Upon receipt and approval of the digital image, financial institution 130 may credit the funds to account 160. Financial institution 130 may clear the check 108 by presenting a digital image of the check 108 captured from the digital image to an intermediary bank, such as a regional branch of the Federal Reserve, a correspondent bank, and/or a clearinghouse bank. For example, the check 108 may be cleared by presenting the digital image to financial institution 140, which may be a regional branch of the Federal Reserve, along with a request for payment. Financial institutions 130 and 150 may have accounts at the regional branch of the Federal Reserve. Financial institution 130 may create a substitute check using the image provided by the user 102 and present the substitute check to financial institution 140 for further processing. Upon receiving the substitute check, financial institution 140 may identify financial institution 150 as the paying bank (e.g., the bank from which the check 108 is drawn). This may be accomplished using a nine digit routing number located on the bottom left hand corner of the check. A unique routing number is typically assigned to every financial institution in the United States. Financial institution 140 may present the substitute check to financial institution 150 and request that the check be paid. If financial

institution 150 verifies the check (i.e., agrees to honor the check), financial institution 140 may then settle the check by debiting funds from financial institution 150 and crediting funds to financial institution 130. Financial institution 150 may then debit funds from account 170.

[0020] It will be appreciated that the preceding examples are for purposes of illustration and explanation only, and that an embodiment is not limited to such examples. For example, financial institution 150 may be a correspondent bank (i.e., engaged in a partnership with financial institution 130). Thus, financial institution 130 may bypass the regional branch of the Federal Reserve and clear the check directly with financial institution 150. In addition, account 160 and account 170 may both be held at financial institution 130, in which case the check 108 may be cleared internally.

[0021] In an implementation, the mobile device 106 may comprise a video source such as a video camera, a web camera, or a video-enabled phone, for example, to obtain a video of the check 108. A frame of the video may be obtained and monitored with respect to monitoring criteria, as described further herein. The mobile device 106 and/or the institution may obtain the frame and monitor the frame, depending on an implementation. Generation of a live video of a check 108 is not limited to a video camera, a web camera, and a video-enabled phone, and it is contemplated that any device that is capable of generating a live video may be used to make a video of the check 108 which may be monitored in real-time with respect to monitoring criteria. Additional devices that may be used in the generation and/or transmission of a live video include a web-enabled video computing device, a mobile phone, a camcorder, and a computer camera, for example.

[0022] Figure 2 shows a high-level block diagram of an implementation of a system 200 that may be used for the deposit of a check, such as the check 108. As described further herein, the user 102 may deposit the funds of the check 108 using the camera functionality in the mobile device 106. In the example of one person giving a check to another person, this would enable the receiving party to deposit the funds at that time, without physically visiting an ATM or a bank branch.

[0023] In an implementation, the mobile device 106 may comprise a camera 207, such as a digital camera. Such a mobile device may be called a camera phone. The mobile device 106, through the camera 207, has the ability to take or capture a picture or digital image

of the check 108 or other negotiable instrument. The camera 207 may take an image of the front of the check 108. Alternatively, the camera 207 may take an image of both the front and the back of the check 108. The back of the check may provide endorsement verification, such as the signature of the person or party the check is made out to.

[0024] In an implementation, prior to an image in the field of view of the camera 207 being captured by the camera 207, the image may be monitored with respect to monitoring criteria, e.g., using a software application running on the mobile device 106. Feedback based on the monitoring of the image may be provided to the user 102 to assist the user 102 in positioning the check 108 so that the image of the check 108 may be captured in such a manner that it may be more easily processed and cleared during subsequent operations, such as those involving one or more financial institutions.

[0025] A depository 204 may include a bank in which the user 102 has a deposit account; however, the present disclosure is not limited to just banks. Alternatively, a third party may act as the depository 204 providing functionality to a plurality of users without regard to the bank at which they have deposit accounts, or whether their individual bank allows for the methods and systems described herein. The depository 204, in an implementation, after receiving the image(s) of the check 108 from the user 102, may use a clearinghouse 210 to perform the check clearing operations. As described with respect to the system 100 of Figure 1, check clearing operations are used by banks to do the final settlement of the check 108, such as removing funds from the account of the payor and transferring those funds to the user's bank. The user's bank may choose to make the funds available to the user 102 immediately and take on the risk that the check 108 does not clear. However, for various reasons, the bank may only make those funds available to the user 102 after the check 108 finally clears.

[0026] In an implementation, the user 102 may place the check 108 on a background and generate a digital image comprising an image of the check (e.g., a check image) and a portion of the background (e.g., a background image) using the camera 207. Any background may be used, although a dark background or a consistently colored background may provide more optimal results. It is noted that although examples and implementations described herein may refer to a check image and check data, the term "check image" may refer to any

foreground image in a digital image (as opposed to the background image) and the term "check data" may refer to any foreground data in a digital image (as opposed to background data). Thus, the "check image" and the "check data" may refer to the foreground image and foreground data in implementations involving any negotiable instrument, form, or document.

[0027] In an implementation, the image being monitored in the field of view of the camera 207 comprises check data and background data. The check data pertains to the check image and the background data pertains to the background image (e.g., the background on which the check image is disposed).

[0028] Figure 3 is a diagram of an example image 230 comprising a check image 247, a background image 250, and a feedback indicator 235 providing feedback to the user 102. The image 230 may be generated by an imaging device associated with the mobile device 106, such as the camera 207. An edge 245 separates the check image 247 from the background image 250. The edge 257 may be detected using any known technique(s). The image 230 may be provided in the field of view of the camera 207 prior to and during image capture of the check 108. The user 102 may adjust the camera 207, the check 108, and/or any light source so that the image 230 passes one or more monitoring criteria. For example, a light source from a specific angle can lead to poor light contrast. Light contrast may be a monitoring criterion, and poor light contrast may be corrected easily by moving the lens of the camera 207 to a different perspective, thereby allowing the image to pass the monitoring criterion.

[0029] Feedback regarding the image 230 in the field of view with respect to the monitoring criteria may be generated and provided to the user 102. In an implementation, the feedback may be provided visually, such as by text (e.g., "go closer", "go farther", "move the check to the right", "put the check on a darker background", "tilt the camera down", "take the picture now", etc.), arrows, or other visual indicators or cues (e.g., green lights, red lights, etc.) overlaid on the image 230, shown as feedback indicator 235. Alternatively or additionally, feedback may be provided to the user 102 aurally, such as through a speaker associated with the mobile device 106. The feedback may advise the user 102 to move the camera 207 or the check 108 or adjust the lighting or the background, for example. The feedback may also advise the user 102 when the image 230 passes the one or more monitoring criteria and to capture the image of the check 108.

FIFTH THIRD EX1033
Page 105 of 959

[0030] One of the monitoring criteria may be based on the positioning of the check 180 in the image 230. The positioning of the check 108 may be determined from the image 230 and compared with predetermined dimensions (e.g., of a typical personal check, of a typical business check) and tolerances. If the dimensions are within a certain acceptable tolerance, then it may be determined that the check 108 is properly positioned. Such feedback may be generated and provided to the user 102.

[0031] In an implementation, the positioning of the check 108 in the image 230 may be compared with an alignment guide (which may or may not be visible to the user 102 in the field of view of the camera 207). For example, measurements may be made by a processor in the camera 207, the mobile device 106, or a computing device at the financial institution to determine the check's position with respect to the alignment guide. The measurements may be compared to predetermined measurements or values to determine whether the check's positioning in the image 230 is proper or sufficient for further processing of the image. Edge detection and/or corner detection may be used in such measurements (e.g., in measuring the distance from the check 108 in the image 230 to the alignment guide). Any known technique(s) for edge detection and/or corner detection may be used. In an implementation, corner detection itself may be a monitoring criterion, such that if corner detection of the check 108 in the image 230 is achieved, then it may be concluded that the image 230 may be properly processed and cleared by a depository (i.e., the image 230 passes the monitoring criteria).

[0032] The alignment guide may be overlaid on the camera feed of the mobile device 106, in an implementation. The alignment guide may take any shape such as a bounding rectangle or other bounding box or shape, horizontal and/or vertical bars, parallel lines, etc., for example. With a bounding rectangle, for example, used as the alignment guide, aligning the check 108, thereby passing this monitoring criterion, means enclosing the check 108 within the bounding rectangle. If the check 108 is outside of the alignment guide in the image 230, feedback may be generated and provided to the user 102 regarding this monitoring criterion with instructions for moving the check 108 or the camera 207 in order to properly align the check 108 in the field of view.

FIFTH THIRD EX1033
Page 106 of 959

[0033] The operator of the camera 207 may introduce distortions in the image due to a perspective problem, specifically an angling of the camera vertically over the check, and the top of the check is smaller than the bottom, or the reverse. Monitoring criteria may also be directed to determining whether the image is skewed or warped. Skewing occurs when the check 208 is rotated from the horizontal in the image 230. By measuring the distance from the edge(s) of the check 208 in the image to an alignment guide or the edge of the field of view, it may be determined whether the check 208 is skewed (e.g., by comparing the distances to one another, by comparing the distances to predetermined values, etc.). If skewing is present in the image 230, feedback may be generated and provided to the user 102 with instructions for moving the check 108 or the camera 207 in order to properly align the check 108 in the field of view with respect to the horizontal.

[0034] Warping, as used herein, is meant to denote that the check 108 is tilted forward or back with respect to a plane that is perpendicular to a line drawn from the camera lens to the center of the check 108. Warping, or tilting, of the image may lead to incorrect optical detection of the check 108. In an implementation, a processor in the camera 207, the mobile device 106, or a computing device at the financial institution may determine whether warping is present in the image, and if so, may generate and provide feedback to the user 102. Such feedback may comprise instructions to the user 102 for moving the check 108 or the camera 207 such that the check 108 would appear to be perpendicular to an imaginary line drawn from the center of the camera lens to the center of the check 108 itself (e.g., dewarping instructions).

[0035] If user involvement is tolerated, the user may be queried to supply or identify one or more corners of the check 108 in the image 230. The perimeter of the check 108 may be determined using this information. Additionally, this information may be used for monitoring the image 230 for distortions.

[0036] In an implementation, a monitoring criterion may be whether the MICR line can be detected and/or read. Any known MICR line detection technique(s) may be used by the camera 207, the mobile device 106, and/or the financial institution (e.g., using an image processor, for example) to detect the MICR line on the check 108 in the image 230. If the MICR line can be detected, it may be determined that the image 230 may be captured and sent to

the financial institution for processing and clearing of the check 108 (i.e., the image passes the monitoring criterion directed to MICR line detection). If the MICR line cannot be detected, feedback may be provided to the user 102, such as to reposition the check 108 and/or the camera 207 (i.e., the image fails to pass the monitoring criterion, perhaps because the image is out focus or the lighting is inadequate, for example).

[0037] In an implementation, spacing between certain characters, points, or features (e.g., MICR number, "$" sign, signature line, courtesy amount line, legal amount line, etc.) may be determined and used as a monitoring criterion. For example, if the MICR line can be detected, then the spacing between the numbers in the MICR line may be determined using any known measuring and/or image processing technique(s). If the spacing is outside of a certain range corresponding to valid spacing between number in a MICR line, then it may be determined that the image 230 may be not properly processed if captured by the camera 207. In such a case, feedback may be generated and provided to the user 102, such as to reposition the check 108 and/or the camera 207.

[0038] Another monitoring criterion may be based on the light in the image 230, such as the light contrast and/or light brightness found on the image 230, such as in various regions of the image 230. For example, if the light contrast between the check image 247 and the background image 250 is less than a predetermined amount, then it may be determined that the image 230 may be not properly processed if captured by the camera 207. In such a case, instead of capturing the image 230, feedback may be generated and provided to the user 102 to adjust the camera 207, the check 108, and/or the lighting in order to bring the image 230 into compliance with the monitoring criteria.

[0039] As another example, the light brightness on various regions of the image may be determined and compared to each other and/or may be compared to a predetermined threshold. If the difference between the light brightness of the various regions is less than a predetermined amount (e.g., the light brightness does not vary significantly among the regions) or if the light brightness is less than a predetermined threshold, then it may be determined that the image 230 may be properly processed if captured by the camera 207. Otherwise, feedback may be generated and provided to the user 102 to adjust the camera 207, the check 108, and/or the lighting in order to change the light brightness on the image 230.

[0040] In an implementation, one or more histograms may be generated based on the image 230 and used in the determination of light contrast and/or light brightness monitoring criteria. A histogram is a well known graph and may be used to display where all of the brightness levels contained in an image are found, from the darkest to the brightest. These values may be provided across the bottom of the graph from left (darkest) to right (brightest). The vertical axis (the height of points on the graph) shows how much of the image is found at any particular brightness level.

[0041] Histograms may be used to monitor whether the light on the image 230 is uniform, not too bright, etc. For example, the mobile device 106 can monitor the histogram of the image 230 to ensure that there is a large contrast between the background image 250 and the check image 247. Feedback may be provided to the user 102 as to how to move or adjust the camera, lighting, etc. in order to get a good image for subsequent processing (i.e., how to get an image that passes the monitoring criteria).

[0042] In an implementation, the image 230 may be divided into segments, such as those shown in Figure 4. Figure 4 is a diagram of the example image 230 of Figure 3 divided into segments 260, 265, 270, 275 that may be used for monitoring the image 230. Although four segments are shown in Figure 4, any number of segments may be used with techniques described herein. Although the segments 260, 265, 270, 275 are formed by dividing the image 250 into quadrants, the segments may be formed by any techniques, take any shape, and have any area, subject to a constraint that each segment comprises a portion of the check data 247 and a portion of the background data 250 separated by a portion of the edge 245. In this manner, distinct areas of density corresponding to the background of the image and the check data of the image may be provided in a histogram.

[0043] Figure 5 is a diagram of an example histogram 280 for a segment of an image comprising check data and background data. The horizontal axis of the histogram 280 represents the grayscale level between 0 and 255, where 0 represents true black and 255 represents true white. The vertical axis represents the amount of the image at a particular grayscale level of the horizontal axis. Any known technique for generating a histogram for an image (such as a grayscale image of the image 230) may be used. The histogram 280 shows two distinct areas of density (i.e., two distinct density distributions). The density area 286

FIFTH THIRD EX1033
Page 109 of 959

closer to the grayscale level of zero corresponds to the background of the image, and the density area 289 closer to the grayscale level of 255 corresponds to the check data.

[0044] The density distribution for each segment (or for the entire image 230) may be analyzed to determine whether the light contrast and/or light brightness is appropriate for processing and clearing of the check 108 in the image 230 (and thus passes that monitoring criterion) or whether the light contrast and/or light brightness does not pass the monitoring criterion and the camera 207, the check 108, and/or the light source should be adjusted or repositioned. For example, the density distributions for the segments may be compared with each other and/or may be compared to predetermined values or levels. If the differences are less than a predetermined difference amount, such as less than 1 percent different, less than 5 percent different, etc., then the image 230 may be captured and sent to the financial institution for processing. Otherwise, feedback may be generated and provided to the user 102 to reposition the camera 207, the check 108, and/or the light source.

[0045] When the image 230 passes the monitoring criteria (e.g., is positioned properly with respect to an alignment guide, is not warped, is not skewed, has adequate light brightness and/or light contrast, etc.), the image 230 may be captured either automatically (e.g., by the camera or the mobile device under direction of an application running on the camera 207 or the mobile device 106 or the financial institution) or manually (e.g., by the user 102 pressing a button or making a selection on the camera 207 or the mobile device 106). The digital image thus captured may be provided from the mobile device 106 to a financial institution. The check 108 may be deposited in a user's bank account based on the digital image. Any technique for sending the digital image to the financial institution may be used.

[0046] Figure 6 shows a data flow diagram 300 of a system for the deposit of a check, in accordance with an example embodiment. In the data flow diagram 300, a client 320 is one example of the mobile device 106 of the user 102 described with respect to the systems 100 and 200 of Figures 1 and 2, respectively. In an implementation, a server 322 may be a software component operable by the depository 204 of Figure 2. The client 320 may log in to a remote deposit system executed on the server 322. The login 325 may serve to authenticate the user 102 as an authorized consumer of the depository 204.

FIFTH THIRD EX1033
Page 110 of 959

[0047] The server 322, in one example, may send instructions 330 to the client 320 that execute an application on the client 320. This may include instructions that cause a software object, which may have been previously downloaded and installed (e.g., pre-installed) on the client 320, to be executed on the client 320. The software object may analyze the image in the field of view of a digital camera (e.g., the image 230 shown in the field of view of the camera 207 associated with the mobile device 106) with respect to one or more monitoring criteria and may generate and provide feedback to the user regarding the monitoring criteria and/or instructions for capturing an image of the check 108.

[0048] In another example, the instructions 330 may include a wholly self-contained application that when delivered to the client 320 will execute and perform one or more operations described herein, such as those directed to analyzing the image in the field of view of the camera 207 with respect to monitoring criteria and providing feedback to the user 102. In either example, the software object may be configured to make one or more software calls 310 to the camera 207. This may be through specific software instructions to the camera 207. In other words, the camera's functionality may not be abstracted through any software library. In such an example, software code may be written and delivered to every different camera-equipped mobile phone.

[0049] In an alternate example, the software object may operate through a software abstraction layer, such as an application programming interface (API). The software object developer may only insert code into the software object to call one or more APIs exposed by the software operating the mobile device 106. One example of such software is Windows Mobile by Microsoft Corporation. In the context of a Windows Mobile device, the Windows Mobile operating system (OS) has one or more APIs exposed to application developers that will translate instructions from applications into instructions operable by the camera 207 on the mobile device 106. A mobile operating system, also known as a mobile platform or a handheld operating system, is the operating system that controls a mobile device. Other mobiles OSs include Symbian OS, iPhone OS, Palm OS, BlackBerry OS, and Android.

[0050] The software object may cause the camera 207 to analyze an image in the field of view with respect to monitoring criteria, provide feedback, and/or take a picture or capture one or more images of the check 108 being deposited. These images may be captured

sequentially, e.g., pursuant to the user 102 flipping the check 108 over after an image of the front of the check 108 has been captured after passing the monitoring criteria. However, each side of the check 108 may be captured by the camera 207 using similar API calls. The images may be stored in an image file 315.

[0051] Once the images of one or both sides of the check 108 pass the monitoring criteria and are captured by the camera 207, the image file 315 may be operated on by the software object of the client 320. These operations may include any of the following: deskewing, dewarping, magnetic ink character recognition, cropping (either automatically, or having the user 102 manually identify the corners and/or edges of the check 108 for example), reducing the resolution of the image, number detection, character recognition, and the like.

[0052] With respect to number and character recognition, commercial check scanners have used characteristics of the MICR encoding to detect information about the check, such as the bank's routing number and the account number. However, the characteristics that these scanners have used are the magnetic characteristic of the ink itself and these scanners have used methods similar to those of magnetic audio tape readers. In an implementation, a software object of the client 320 may optically recognize the characters on the MICR line, as a consumer mobile device such as the mobile device 106 will lack the magnetic reading ability of a commercial check scanner.

[0053] The image may be also down converted into a grayscale or black and white image, such as either in Joint Photographic Experts Group (JPEG) compliant format or in tabbed image file format (TIFF) for example. In an alternate example, the image may be formatted as a Scalable Vector Graphics (SVG) image. One of the benefits of an SVG file is a large size advantage over JPEG. In the former example, the image at some point before entry into the clearing system may be converted to TIFF format. This may be performed at the mobile device 106, wherein the camera 207 captures the image in TIFF format. However, the camera 207 of the mobile device 106 may capture the image in JPEG format, which may then be converted into TIFF either at the mobile device 106 or at the server 322. In the latter example, this may use the transmission of the TIFF image across a communications network which may be more advantageous as TIFF images are typically smaller in file size for the same size of picture as a JPEG formatted image.

[0054] The software object on the client 320 may operate by performing one or more of the operations described herein and then transmitting an image file 335 (e.g., based on image file 315 that has been processed) to the server 322 after the user 102 confirms that they do wish to deposit the check 108. Alternately, the software object may capture the image of the check 108 and transmit that image to the server 322 that in turn may perform those operations, verifies that the image quality is within acceptable thresholds, and communicates that verification back to the client 320, which can then instruct the user 102 to take a picture of the other side of the check 108. In this example, the image transmitted to the server 322 may be in any format, such as JPEG or TIFF, insofar as the server software has the ability to convert that image into a Check 21 compliant format. Alternately, the bank may output an X9.37 file to the clearing system. The Check Clearing for the 21st Century Act (or Check 21 Act) is a United States federal law that allows the recipient of a paper check to create a digital version, thereby eliminating the need for further handling of the physical document. The Check 21 standard for electronic exchange is defined in the standard DSTU X9.37-2003 ("X9.37"). It is a binary interchange format.

[0055] The server 322 may confirm (e.g., using a process confirmation 340) with the user 102 the transmission, reception, and processing of each side of the check 108 separately, or may confirm both sides at the same time. On the server side, more operations may be performed, such as signature verification. Where to perform these operations may be determined by the processing power of the mobile device 106 itself, which is typically limited in computational power. However, the present discussion is not limited in any way by discussion of where certain operations are described as operating. The operations of detecting and verifying information may be performed by the client 320 before the information is transmitted along with the image in the image file 335 to the server 322. Alternately, the software object(s) operating on the mobile device 106 may perform no operation other then capturing images of the front and back of the check 108 after passing the monitoring criteria, receiving confirmation that the user 102 wishes to proceed, and transmitting those images to the server 322, wherein the server 322 performs those operations.

[0056] In an implementation, after the image file 335 has been received by the server 322, the server 322 may send a process confirmation 340 to the client 320. The process

confirmation 340 may request instructions from the client 320 to continue proceeding with the deposit now that the server 322 has received the image file 335. In response, the client 320 may send a deposit confirmation 345 to the server 322, instructing the server 322 to process the deposit of the check based on the image file 335 that had been received by the server 322.

[0057] Figure 7 shows a block diagram of a client apparatus 450 and a server apparatus 570 for the deposit of a check, in accordance with an example embodiment. The client apparatus 450 may include one or more software objects operating on a mobile device 106, such as described above. The client apparatus 450 may include a communications module 452, a check processing module 454, and an image monitoring and capture module 456. The client apparatus 450 may receive, in one example, one or more check images 458 as an input and output one or more processed images 460.

[0058] In an implementation, the check images 458 may be received following a software call from the check processing module 454 to the image monitoring and capture module 456. In such an implementation, the image monitoring and capture module 456 may include the camera 207 contained within the mobile device 106. Alternately, the camera 207 may be detachably coupled to the mobile device 106 such as through a secure digital (SD) slot or over any suitable communications bus, such as USB (universal serial bus).

[0059] In an implementation, the image monitoring and capture module 456 may obtain an image and send the image to a financial institution (e.g., financial institution 130, the server 322, the server apparatus 570, etc.) for processing. In an implementation, the client apparatus 450 may comprise a browser such as a web browser, for accessing a website on the Internet or other network associated with a financial institution. The user may access the website and select a "monitor and capture image" link or similar icon, button or link, for example, displayed on the browser. Such a selection may call the image monitoring and capture module 456 on the client apparatus 450.

[0060] The communications module 452 may be configured, in one example, to receive and send data signals over a suitable communications network. This may include, without limitation, GSM/GPR3, HSDPA, CDMA, TDMA, 802.11, 802.16 and the like. While the bandwidth available to the mobile device 106 may be an implementation concern such discussion is outside the scope of the present discussion and any suitable wireless

FIFTH THIRD EX1033
Page 114 of 959

communications network is considered to be within the scope of the present discussion. With respect to the present discussion, the communications module 452 may receive one or more processed check images 460 from the check processing module 454 and may transmit them over the suitable communications network to the depository 204, as described herein.

[0061] The check processing module 454 may be configured, in one example, to cause the image monitoring and capture module 456 to monitor an image of at least one side of a check provided in a field of view of the camera 207 and then capture the image after it passes monitoring criteria. Compliance with the monitoring criteria is intended to ensure that the image of the check is suitable for one or more processing tasks. For instance, if the check is rotated 45 degrees clockwise when captured, the check processing module 454 or a software object operated on the server 322 described above may be unable to optically detect information on the check.

[0062] The check processing module 454 may perform one or more cleaning or processing operations on the captured image of the check. Such cleaning or processing may include dewarping and/or deskewing (if not part of the monitoring criteria, in an implementation), for example. Cleaning or processing may include down-converting the image received from the image capture module to a suitable size, such as 200 dots per inch (DPI) resolution or in a resolution range such as 200 DPI to 400 DPI, 300 DPI to 500 DPI, etc., and/or converting the image to grayscale or black and white. Such operation(s) may reduce the file size of the check image. Alternatively, the check processing module 454 may send instructions to the image monitoring and capture module 456 to cause the image monitoring and capture module 456 to capture an image of the check at a suitable resolution. The check processing module 454 may additionally perform any of the following operations, in further examples: convert from JPEG to TIFF, detect check information, perform signature detection on the image of the check, and the like. The check processing module 454 may, alternatively, send the captured check image to the server described herein for such processing, and receive confirmation that the operations were completed before further operations can proceed.

[0063] The size of the file sent between the mobile device and the server may be small. This runs counter with respect to automatic check detection against a background. If captured in color, the contrast between check and background becomes easier. However, the

processed image sent over the communications network may need to be smaller, and if the detection operation is performed by the server, it may be advantageous to convert the captured image to grayscale, or even black and white, before transmission to the server. Grayscale images are compliant with the Check 21 Act.

[0064] While "flat" is a fairly well known term to users, each user's appreciation of flat with respect to the camera lens of the camera 207 associated with the mobile device 106 may result in a problem with needing to align the check image programmatically or risk rejecting a large number of check images. As the image captured is a set of pixels, a tilted image will result in a jagged polygon rather than a perfect rectangle. Using convex hull algorithms, the check processing modules may create a smooth polygon around the boundary and remove the concavity of the check image. Alternatively, a rotating calipers algorithm may be used to determine the tightest fitting rectangle around the check boundary, which can then be used to determine the angle of it, with that angle being used to align the check properly.

[0065] The server apparatus 570 may include one or more software objects operating on a server operated by the depository 204. Aspects of an example server apparatus are described with respect to Figure 10. The server apparatus 570 may include a communications module 572, a check processing module 574, and a check clearance module 576. The server apparatus 570 may receive one or more processed images 460 from a mobile device 106 or a client apparatus 450 as an input and may output a file such as a Check 21 compliant file 578. The Check 21 compliant file 578 may be a file or entry in a record set that is compliant with the clearinghouse rules set forth in the Check 21 Act and may include outputting an X9.37 file, in one example.

[0066] The communications module 572 may be configured to receive a wireless communication from the mobile device 106 over any suitable communications network, such as those described above. The communications module 572 may additionally receive a communication over a different communications network than the mobile device 106 communicated on, such as receiving the communication over a TCP/IP (Transmission Control Protocol / Internet Protocol) connection from the user's communication provider.

[0067] The check processing module 574 may be configured, in one example, to perform one or more check processing operations on the processed image(s) 460 that are

received. In an implementation, these operations may include any of the operations described herein with respect to the check processing module 454. The operation of signature verification may be performed by the check processing module 574 of the server apparatus 570 as the server apparatus 570 may interface with other systems of the depository 204 that may maintain previously verified signature samples of the user 102. Performing signature verification at the client apparatus 450 may be computationally unfeasible; additionally, there may be a security risk if the signature sample is stored on the user's own device.

[0068] A cropped grayscale image may be sent to the server apparatus 570. The server apparatus 570 may extract information via a TIFF conversion and determine the DPI and re-scale to the proper DPI (e.g., convert to TIFF and detect the DPI that was used in the grayscale image). In an implementation, DPI detection may run on the client apparatus 450.

[0069] The check clearance module 576 may be configured, in one example, to receive a file from the check processing module 574 and may communicate with a check clearinghouse such that a Check 21 compliant file may be delivered to the check clearinghouse and funds may be received by the depository 204. The availability of the funds to the user 102 may be delayed by this operation such that the user 102 only has access to those funds when the depository 204 receives confirmation that the check has cleared.

[0070] Figure 8 is an operational flow of an implementation of a method 800 that may be used for deposit of a check using image monitoring of the check. At 810, a request for access may be received from a user (e.g., the user 102). The user may request access to a deposit system operated by a depository (e.g., the depository 204) by way of a mobile device (e.g., the mobile device 106) such as a cellular phone, a PDA, a handheld computing device, etc. operated by the user. The access may be through some sort of user login, in some examples. The deposit system may be configured to receive a deposit of a negotiable instrument, such as a check, money order, cashier's check, etc. from the user and clear the negotiable instrument in a suitable clearinghouse system.

[0071] At 820, the system may initialize a software object on the mobile device. This may include sending instructions to the mobile device intended to execute a previously installed (i.e., pre-installed) software object. Alternatively, the system may send a software object to the mobile device that may execute the software object, carry out operations

described herein by use of the software object, and terminate the software object. In an implementation, the system may instruct a camera associated with the mobile device to monitor and capture an image of the negotiable instrument in conjunction with monitoring criteria.

[0072] The user may use the camera to obtain an image in the field of view of the camera, and at 830, the image in the field of view of the camera may be monitored with respect to one or more monitoring criteria, such as those described above. The monitoring may be performed by the camera, the mobile device, and/or a computing device associated with the depository, for example. The monitoring may be performed pursuant to instructions received at the camera or mobile device from the deposit system operated by a depository, the server 322, or the server apparatus 570, for example. In an implementation, the results of the monitoring may indicate that the camera and/or the check should be repositioned and/or the light source should be adjusted prior to an image capture in order to capture an image of the check that may be processed properly, e.g., to have the data from the check obtained without error from the image, so that that check can be cleared.

[0073] At 840, feedback based on the results may be generated and provided visually and/or aurally to the user via the camera and/or the mobile device. In an implementation, the feedback may be provided if the image fails to pass the monitoring criteria. The feedback may comprise instructions or guidance for the user to follow to obtain an image of the check in the field of view of the camera that will pass the monitoring criteria. Processing may continue at 830 with the image that is currently in the field of view of the camera (after the user has received and acted on the feedback) being monitored with respect to the monitoring criteria.

[0074] When the image in the field of view passes the monitoring criteria as determined at 830, the image in the field of view may be captured by the camera at 850. This may be accomplished through the software object accessing a camera associated with the mobile device (e.g., either comprised within the mobile device or separate from the mobile device). This may be done through an API exposed by the OS of the mobile device, or may be through software code customized for a specific phone and specific camera. With respect to the former, a developer of the software object may write code to the camera API(s), which may

be specific to the OS and without regard to the camera on the device. The user may initiate the capture of the image (e.g., by pressing a button on the camera or the mobile device) or the image may be captured automatically, without user intervention, as soon as the image in the field of view is determined to have passed the monitoring criteria. In this manner, the occurrence of non-conforming images downstream (e.g., at a depository or financial institution) is reduced, and there is a high confidence that the image will be properly processed downstream.

[0075] In an implementation, when the image in the field of view is determined to pass the monitoring criteria, feedback may be generated and provided to the user indicating so. The feedback may instruct the user to capture the image now (e.g., by pressing a button on the camera or mobile device) or may advise the user that the image has been captured, for example.

[0076] At 860, the captured image may be transmitted to the depository, e.g. as a digital image file. At 870, the depository may receive the image of the check (along with financial information pertaining to the account for depositing funds, for example) and may process the image. Processing of the digital image file may include retrieving financial information regarding the check. The financial information may comprise the MICR number, the routing number, an amount, etc. Any known image processing technology may be used, such as edge detection, filtering to remove imagery except the check image or check data in the received digital image file, image sharpening, and technologies to distinguish between the front and the back sides of the check. The depository may identify and/or remove at least a portion of data that is extraneous to the check, such as background data.

[0077] After retrieving the financial information from the check in an electronic data representation form, the depository may determine whether the financial information such as the amount payable to the user, the account associated with the user to deposit funds, an account associated with a payor to debit funds, and an institution associated with the payor, etc., may be valid. For example, the depository may include electronic devices such as computers, servers, databases, or the like that may be in communication with each other. The electronic devices may receive an electronic data representation and may perform an analysis on the quality of the data representation, the readability of the data representation, or the like.

For example, the electronic devices may determine whether the account number, amount payable, or the like may be readable such that they may be parsed and processed by the depository to credit an account associated with the user.

[0078] If the financial information is determined to be valid, the electronic data representation may be processed by the depository, thereby depositing the money in the user's account. If the financial information is determined to be invalid, then the user may be advised. For example, the depository may transmit an email, a web message, an instant message, or the like to the user indicating that the financial information associated with the electronic data representation may be invalid. The user may determine how to proceed by selecting an option on the web message, replying to the email, or the like.

[0079] Thus, in an implementation, instructions on how the user would like to proceed may be requested from the user, such as whether the user would like to try the deposit again (e.g., make another image of the check that pass the monitoring criteria and send it to the depository) or whether the user would like assistance from a representative, for example. The user may indicate how they would like to proceed. If the user would like assistance, the financial information may be transferred to a representative for further review. The representative may review the financial information associated with the electronic data representation to determine whether to allow the electronic data representation to be processed by the depository. If so, the electronic data representation of the financial information may be processed by the depository, thereby depositing the check in the user's account. The depository may send a notice to the user via email, facsimile, instant message, or mail, for example, that the check has been deposited into the selected account.

[0080] Figure 9 is an operational flow of another implementation of a method 900 that may be used for deposit of a check using image monitoring of the check. A user (e.g., the user 102) may receive and endorse a check (e.g., the check 108) at 910, and open a communication pathway with an institution (e.g., the financial institution 130) at 920. In an implementation, the user may open a communication pathway with the institution by logging into a website of the institution, for example. There may be several ways in which a communication pathway may be established, including, but not limited to, an Internet

connection via a website of the institution. The user may access the website and log into the website using credentials, such as, but not limited to, a username and a password.

[0081] At 930, the user may send a request to deposit the check and may select an account in which to deposit the check. In an implementation, the user may select a "deposit check" option provided on the website, and may enter details such as check amount, date, the account the check funds should be deposited in, comments, etc.

[0082] At 940, an image in the field of view of the camera may be obtained and provided, via the communication pathway, to the institution. A still image may be provided or a video may be provided, such as a video stream generated by the camera.

[0083] At 950, the institution may receive the image or video stream and may analyze the image or a frame of the video stream with respect to one or more monitoring criteria, such as those described above. Feedback pertaining to the image with respect to the monitoring criteria may be generated and provided to the user over the communication pathway. Based on the feedback, the user may adjust the position the camera and/or the check and/or may adjust the light source until the image in the field of view of the camera is determined by the institution to pass the monitoring criteria.

[0084] When the image in the field of view passes the monitoring criteria, the image in the field of view may be captured (e.g., automatically without user intervention or pursuant to the user pressing a button) by the camera at 960, thereby creating a digital image of the check. In an implementation, the user may instruct the camera (e.g., by pressing a button on the camera or the mobile device) to create the digital image. In another implementation, the camera may automatically create the digital image as soon as the image of the check passes the monitoring criteria. In this manner, the user may point the camera at the check such that the image of the check appears in the field of view, and after image has been determined to pass the monitoring criteria, a digital image of the check may be created without further user intervention. Depending on the implementation, one or more digital images of the check (e.g., corresponding to the front and back of the check) may be created using such techniques.

[0085] At 970, the digital image(s) may be uploaded to the institution using any known image upload process. In an implementation, the upload may be augmented by secondary data which may be information relating to the deposit of the check, such as an

account number and a deposit amount, for example. At 980, when the institution has received the digital images (e.g., of the front and back sides of the check), the institution may process the digital images to obtain an image of the check and to deposit the funds of the check in the user's account, as described herein. It is contemplated that processing such as grayscale conversion, image cropping, image compression, edge and/or corner detection, etc. may be implemented in the method 900. Such operations may be performed on one or more digital images created by the camera and may be performed on the image(s) by the mobile device and/or by the institution, as described further above.

[0086] Although the examples described herein may refer to uploading of images of checks to an institution, it is contemplated that any negotiable instrument or image (e.g., vehicle accident pictures provided to an insurance company) may be processed and/or transmitted using the techniques described herein. Additionally, one or more of the techniques described herein may be performed by the institution instead of the mobile device of the user.

[0087] Figure 10 is a block diagram of an example computing environment in which example embodiments and aspects may be implemented. The computing system environment is only one example of a suitable computing environment and is not intended to suggest any limitation as to the scope of use or functionality. Numerous other general purpose or special purpose computing system environments or configurations may be used. Examples of well known computing systems, environments, and/or configurations that may be suitable for use include, but are not limited to, personal computers (PCs), server computers, handheld or laptop devices, multiprocessor systems, microprocessor-based systems, network PCs, minicomputers, mainframe computers, embedded systems, distributed computing environments that include any of the above systems or devices, and the like.

[0088] Computer-executable instructions, such as program modules, being executed by a computer may be used. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Distributed computing environments may be used where tasks are performed by remote processing devices that are linked through a communications network or other data transmission medium. In a distributed computing environment, program modules

FIFTH THIRD EX1033
Page 122 of 959

and other data may be located in both local and remote computer storage media including memory storage devices.

[0089] With reference to Figure 10, a system 1000 includes a computer 1010 connected to a network 1014. The computer 1010 includes a processor 1020, a storage device 1022, an output device 1024, an input device 1026, and a network interface device 1028, all connected via a bus 1030. The processor 1020 represents a central processing unit of any type of architecture, such as a CISC (Complex Instruction Set Computing), RISC (Reduced Instruction Set Computing), VLIW (Very Long Instruction Word), or a hybrid architecture, although any appropriate processor may be used. The processor 1020 executes instructions and includes that portion of the computer 1010 that controls the operation of the entire computer. Although not depicted in Figure 10, the processor 1020 typically includes a control unit that organizes data and program storage in memory and transfers data and other information between the various parts of the computer 1010. The processor 1020 receives input data from the input device 1026 and the network 1014 reads and stores code and data in the storage device 1022 and presents data to the output device 1024. Although the computer 1010 is shown to contain only a single processor 1020 and a single bus 1030, the disclosed embodiment applies equally to computers that may have multiple processors and to computers that may have multiple busses with some or all performing different functions in different ways.

[0090] The storage device 1022 represents one or more mechanisms for storing data. For example, the storage device 1022 may include read-only memory (ROM), RAM, magnetic disk storage media, optical storage media, flash memory devices, and/or other machine-readable media. In other embodiments, any appropriate type of storage device may be used. Although only one storage device 1022 is shown, multiple storage devices and multiple types of storage devices may be present. Further, although the computer 1010 is drawn to contain the storage device 1022, it may be distributed across other computers, for example on a server.

[0091] The storage device 1022 includes a controller (not shown in Figure 10) and data items 1034. The controller includes instructions capable of being executed on the processor 1020 to carry out functions previously described herein with reference to Figures 1-

FIFTH THIRD EX1033
Page 123 of 959

9. In another embodiment, some or all of the functions are carried out via hardware in lieu of a processor-based system. In one embodiment, the controller is a web browser, but in other embodiments the controller may be a database system, a file system, an electronic mail system, a media manager, an image manager, or may include any other functions capable of accessing data items. The storage device 1022 may also contain additional software and data (not shown), which is not necessary to understand the invention. Although the controller and the data items 1034 are shown to be within the storage device 1022 in the computer 1010, some or all of them may be distributed across other systems, for example on a server and accessed via the network 1014.

[0092] The output device 1024 is that part of the computer 1010 that displays output to the user. The output device 1024 may be a liquid crystal display (LCD) well-known in the art of computer hardware. In other embodiments, the output device 1024 may be replaced with a gas or plasma-based flat-panel display or a traditional cathode-ray tube (CRT) display. In still other embodiments, any appropriate display device may be used. Although only one output device 1024 is shown, in other embodiments any number of output devices of different types, or of the same type, may be present. In an embodiment, the output device 1024 displays a user interface. The input device 1026 may be a keyboard, mouse or other pointing device, trackball, touchpad, touch screen, keypad, microphone, voice recognition device, or any other appropriate mechanism for the user to input data to the computer 1010 and manipulate the user interface previously discussed. Although only one input device 1026 is shown, in another embodiment any number and type of input devices may be present.

[0093] The network interface device 1028 provides connectivity from the computer 1010 to the network 1014 through any suitable communications protocol. The network interface device 1028 sends and receives data items from the network 1014. The bus 1030 may represent one or more busses, e.g., USB, PCI, ISA (Industry Standard Architecture), X-Bus, EISA (Extended Industry Standard Architecture), or any other appropriate bus and/or bridge (also called a bus controller).

[0094] The computer 1010 may be implemented using any suitable hardware and/or software, such as a personal computer or other electronic computing device. Portable computers, laptop or notebook computers, PDAs, pocket computers, appliances, telephones,

FIFTH THIRD EX1033
Page 124 of 959

and mainframe computers are examples of other possible configurations of the computer 1010. For example, other peripheral devices such as audio adapters or chip programming devices, such as EPROM (Erasable Programmable Read-Only Memory) programming devices may be used in addition to, or in place of, the hardware already depicted.

[0095] The network 1014 may be any suitable network and may support any appropriate protocol suitable for communication to the computer 1010. In an embodiment, the network 1014 may support wireless communications. In another embodiment, the network 1014 may support hard-wired communications, such as a telephone line or cable. In another embodiment, the network 1014 may support the Ethernet IEEE (Institute of Electrical and Electronics Engineers) 802.3x specification. In another embodiment, the network 1014 may be the Internet and may support IP (Internet Protocol). In another embodiment, the network 1014 may be a LAN or a WAN. In another embodiment, the network 1014 may be a hotspot service provider network. In another embodiment, the network 1014 may be an intranet. In another embodiment, the network 1014 may be a GPRS (General Packet Radio Service) network. In another embodiment, the network 1014 may be any appropriate cellular data network or cell-based radio network technology. In another embodiment, the network 1014 may be an IEEE 802.11 wireless network. In still another embodiment, the network 1014 may be any suitable network or combination of networks. Although one network 1014 is shown, in other embodiments any number of networks (of the same or different types) may be present.

[0096] It should be understood that the various techniques described herein may be implemented in connection with hardware or software or, where appropriate, with a combination of both. Thus, the methods and apparatus of the presently disclosed subject matter, or certain aspects or portions thereof, may take the form of program code (i.e., instructions) embodied in tangible media, such as floppy diskettes, CD-ROMs, hard drives, or any other machine-readable storage medium wherein, when the program code is loaded into and executed by a machine, such as a computer, the machine becomes an apparatus for practicing the presently disclosed subject matter. In the case of program code execution on programmable computers, the computing device generally includes a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage

FIFTH THIRD EX1033
Page 125 of 959

elements), at least one input device, and at least one output device. One or more programs may implement or use the processes described in connection with the presently disclosed subject matter, e.g., through the use of an API, reusable controls, or the like. Such programs may be implemented in a high level procedural or object-oriented programming language to communicate with a computer system. However, the program(s) can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language and it may be combined with hardware implementations.

[0097] Although exemplary embodiments may refer to using aspects of the presently disclosed subject matter in the context of one or more stand-alone computer systems, the subject matter is not so limited, but rather may be implemented in connection with any computing environment, such as a network or distributed computing environment. Still further, aspects of the presently disclosed subject matter may be implemented in or across a plurality of processing chips or devices, and storage may similarly be effected across a plurality of devices. Such devices might include personal computers, network servers, and handheld devices, for example. Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims.

What is claimed:

1. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

2. The method of claim 1, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

3. The method of claim 1, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

4. The method of claim 3, wherein the plurality of monitoring criteria includes a criterion based on magnetic ink character recognition (MICR) line detection.

5. The method of claim 3, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

6. The method of claim 1,

wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user's mobile device, and

wherein the confirming is based on the receiving the indication of the result of the processing the digital image of the check.

7. The method of claim 1, wherein the digital image is a modified version of the captured video frame.

8. The method of claim 1, wherein the wireless network is a cellular network.

9. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

10. The method of claim 9, further comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

11. The method of claim 9, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

12. The method of claim 9, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

13. The method of claim 12, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

14. The method of claim 9, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising the monitoring, the determining, the providing, and the confirming.

15. The method of claim 9, wherein the confirming step is performed before the submitting step and the user's mobile device receives an indication of a result of the processing the digital image of the check before the confirming step.

16. The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

17. The method of claim 9, wherein the wireless network is a cellular network.

18. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

FIFTH THIRD EX1033
Page 133 of 959

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

19. The method of claim 18, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

20. The method of claim 18, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

21. The method of claim 20, wherein the plurality of monitoring criteria being based on magnetic ink character recognition (MICR) line detection and one or both of corner detection and edge detection.

22. The method of claim 20, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

23. The method of claim 18, wherein the confirming that the mobile check deposit can go forward is performed after the transmitting the digital image of the check from the user's mobile device.

24. The method of claim 18, wherein the digital image is a modified version of the captured video frame.

25. The method of claim 18, wherein the wireless network is a cellular network.

26. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the user’s mobile device or is based on the digital image transmitted by the user’s mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

FIFTH THIRD EX1033
Page 137 of 959

27. The method of claim 26, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising:

before determining that the video frame of the live video of the check satisfies the at least one monitoring criterion, determining that a different video frame of the live video of the check does not satisfy the at least one monitoring criterion; and

after determining that the different video frame of the live video of the check does not satisfy the at least one monitoring criterion, providing feedback to the user.

28. The method of claim 26, wherein the at least one monitoring criterion is a plurality of monitoring criteria based on two or more selected from a group consisting of light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and magnetic ink character recognition (MICR) line detection.

29. The method of claim 28, wherein the plurality of monitoring criteria includes a criterion based on magnetic ink character recognition (MICR) line detection.

30. The method of claim 26, wherein the wireless network is a cellular network.

ABSTRACT

An image of a check that is in the field of view of a camera is monitored prior to the image of the check being captured. The camera is associated with a mobile device. When the image of the check in the field of view passes monitoring criteria, an image may be taken by the camera and provided from the mobile device to a financial institution. The image capture may be performed automatically as soon as the image of the check is determined to pass the monitoring criteria. The check may be deposited in a user's bank account based on the image. Any technique for sending the image to the financial institution may be used. Feedback may be provided to the user of the camera regarding the image of the check in the field of view.

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Michael Patrick Bueche Jr.	Nonprovisional Application Number (if known):	
Title of Invention:	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via ~~EFS-Web~~ the USPTO patent electronic filing system.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Christopher R. Abidin/	Date Dec. 2, 2024
Name (Print/Typed) Christopher R. Abidin	Practitioner Registration Number 74742

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☐ *Total of _____ forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**12/02/2024 11:16:11 PM Z ET**	**US-0691.12c | 32-10527US2**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	68191842	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche Jr.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E2024B2N16515015**	**Christopher Abidin**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
504184	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1817	REQUEST FOR PRIORITIZED EXAMINATION	4200.00	1	4200.00
1111	UTILITY PATENT APPL. SEARCH FEE	700.00	1	700.00
1011	BASIC FILING FEE - UTILITY (PAPER FILING ALSO REQUIRES NON-ELECTRONIC FILING FEE UNDER 1.16(T))	320.00	1	320.00
1311	PATENT APPL. EXAMINATION	800.00	1	800.00

	FEE			
1054	Non-DOC-X Filing Surcharge	400.00	1	400.00
1201	EACH INDEPENDENT CLAIM IN EXCESS OF THREE	480.00	1	480.00
			TOTAL AMOUNT:	**$6,900.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

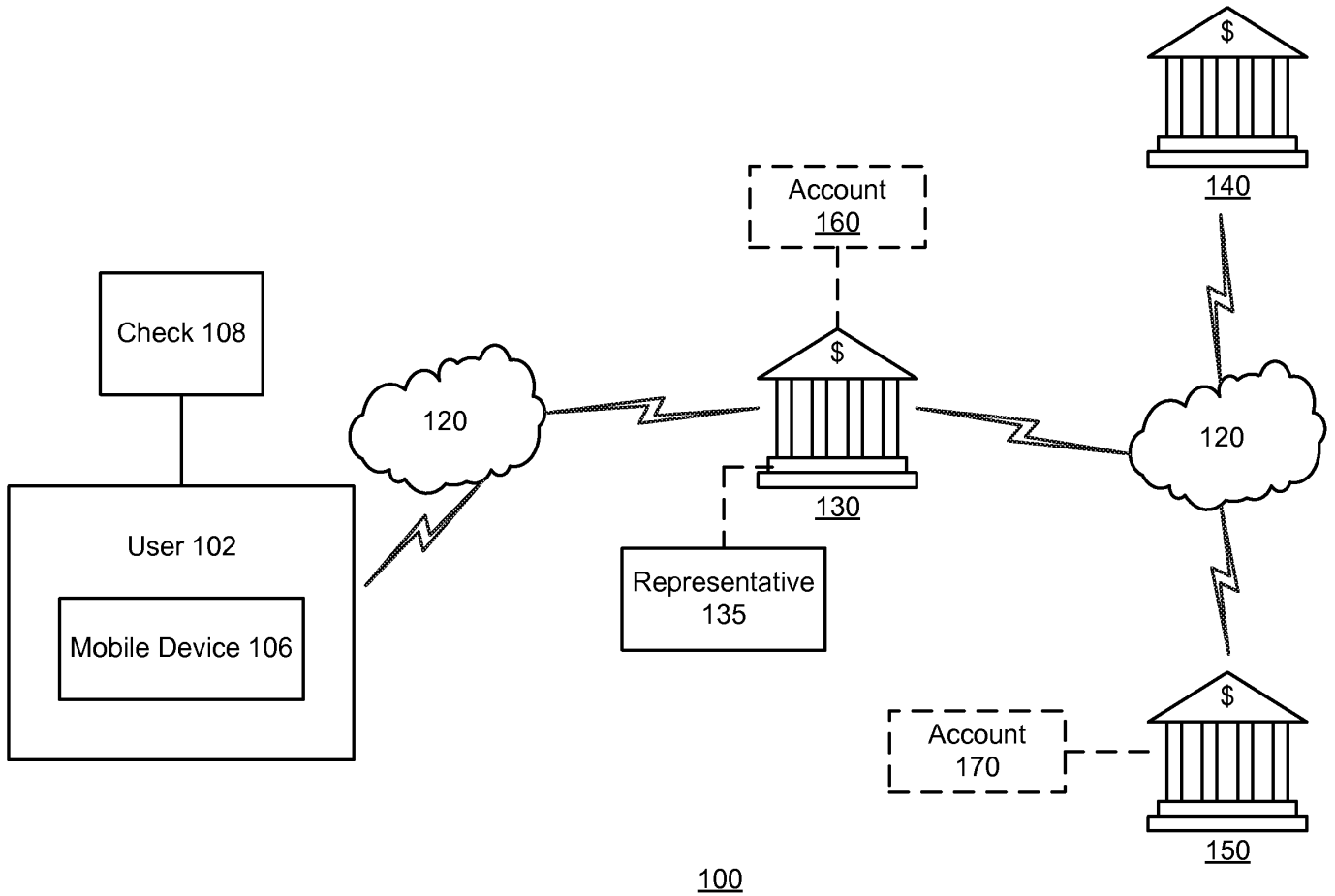


FIG. 1

FIFTH THIRD EX1033
Page 144 of 959

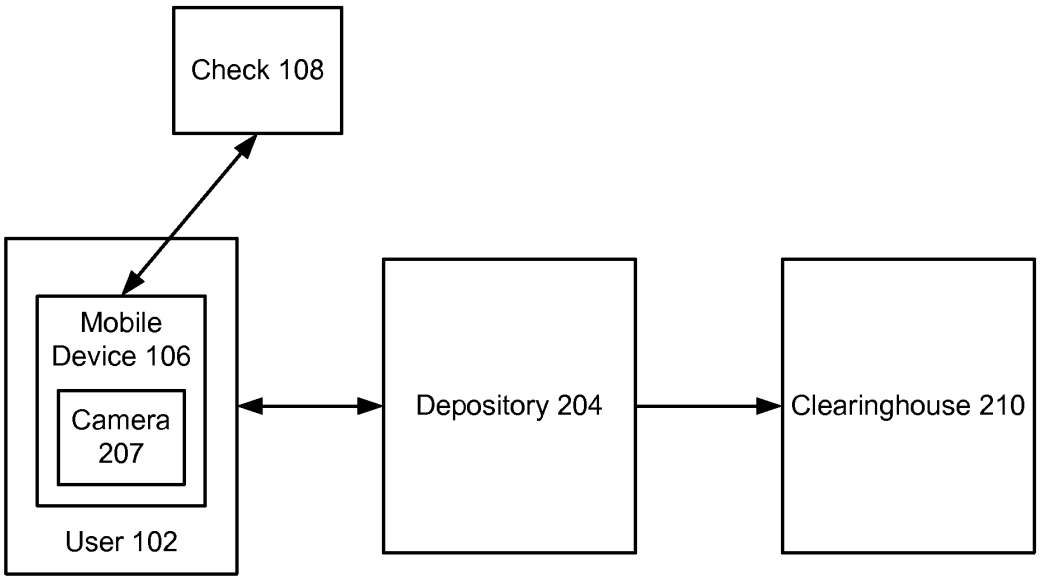

Check 108
Mobile Device 106
Camera 207
User 102
Depository 204
Clearinghouse 210
200

FIG. 2

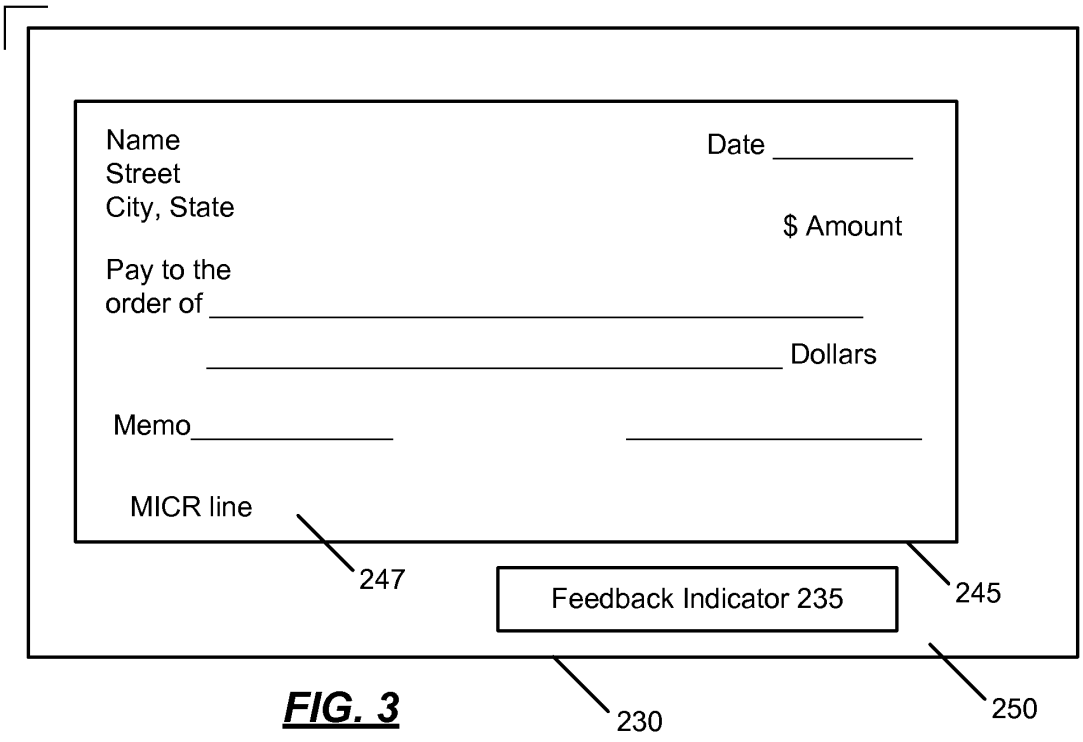

Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
247
Feedback Indicator 235
245
230
250

FIG. 3

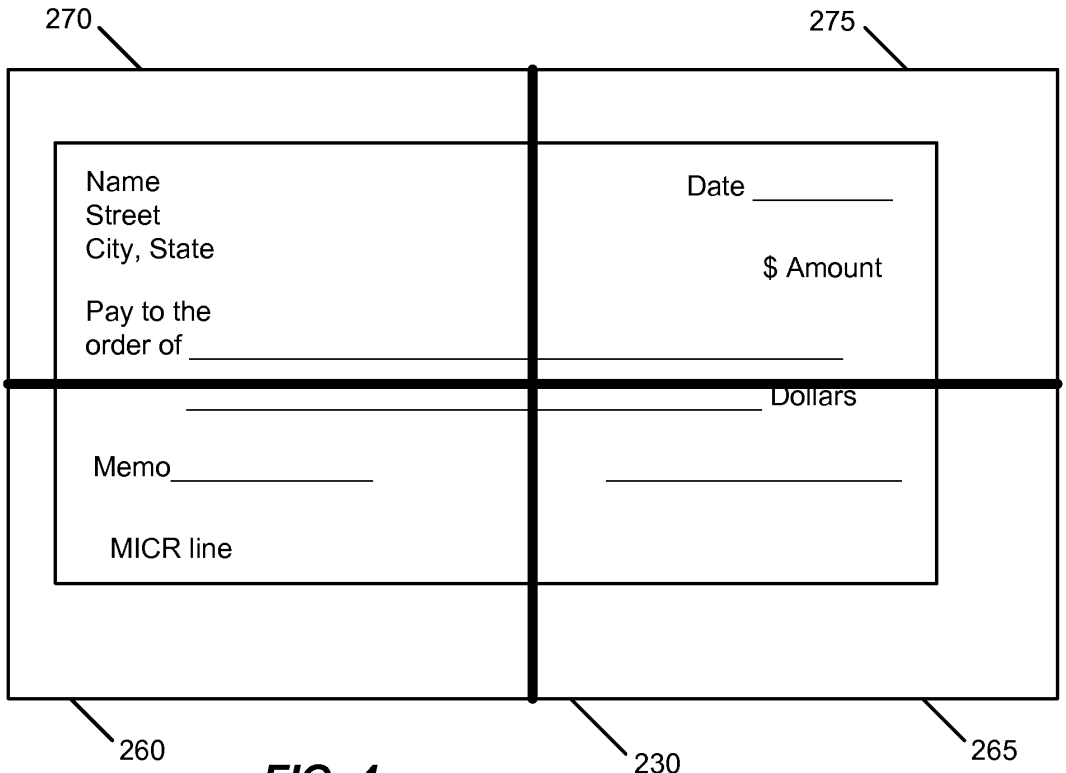
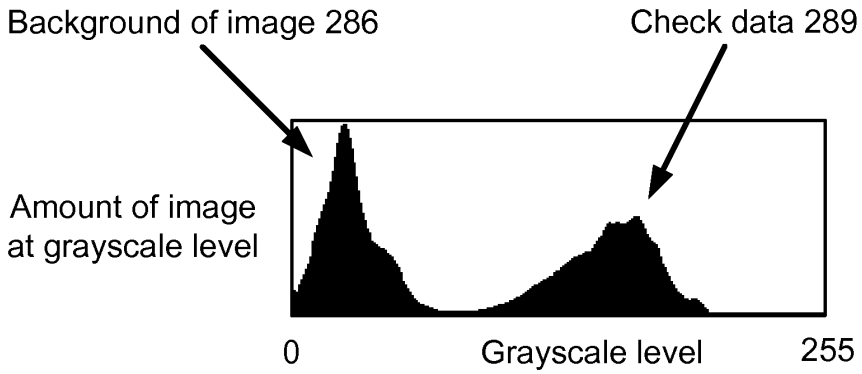
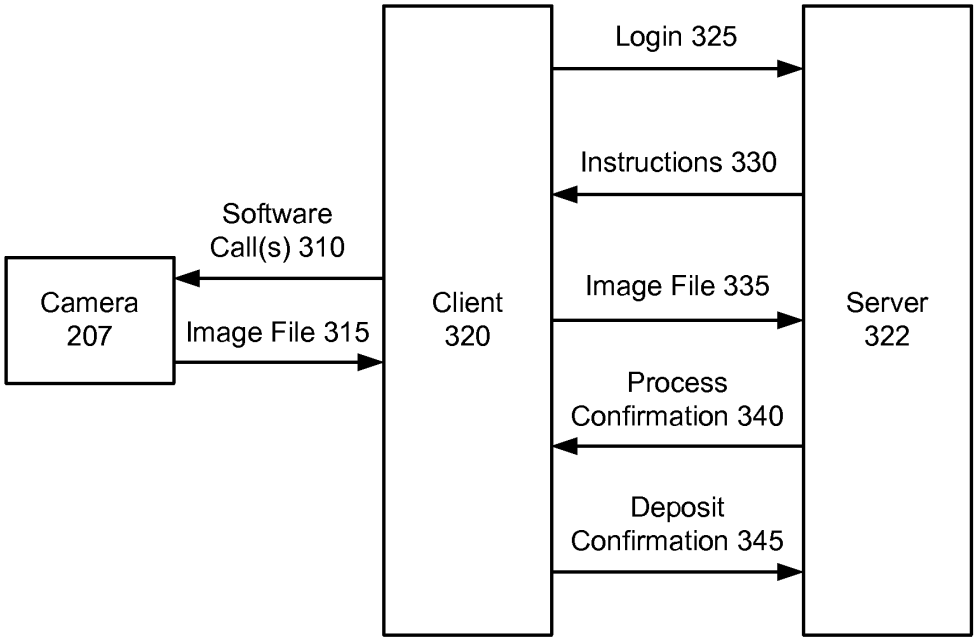

270
275
Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
260
230
265

FIG. 4



280

FIG. 5



300

FIG. 6

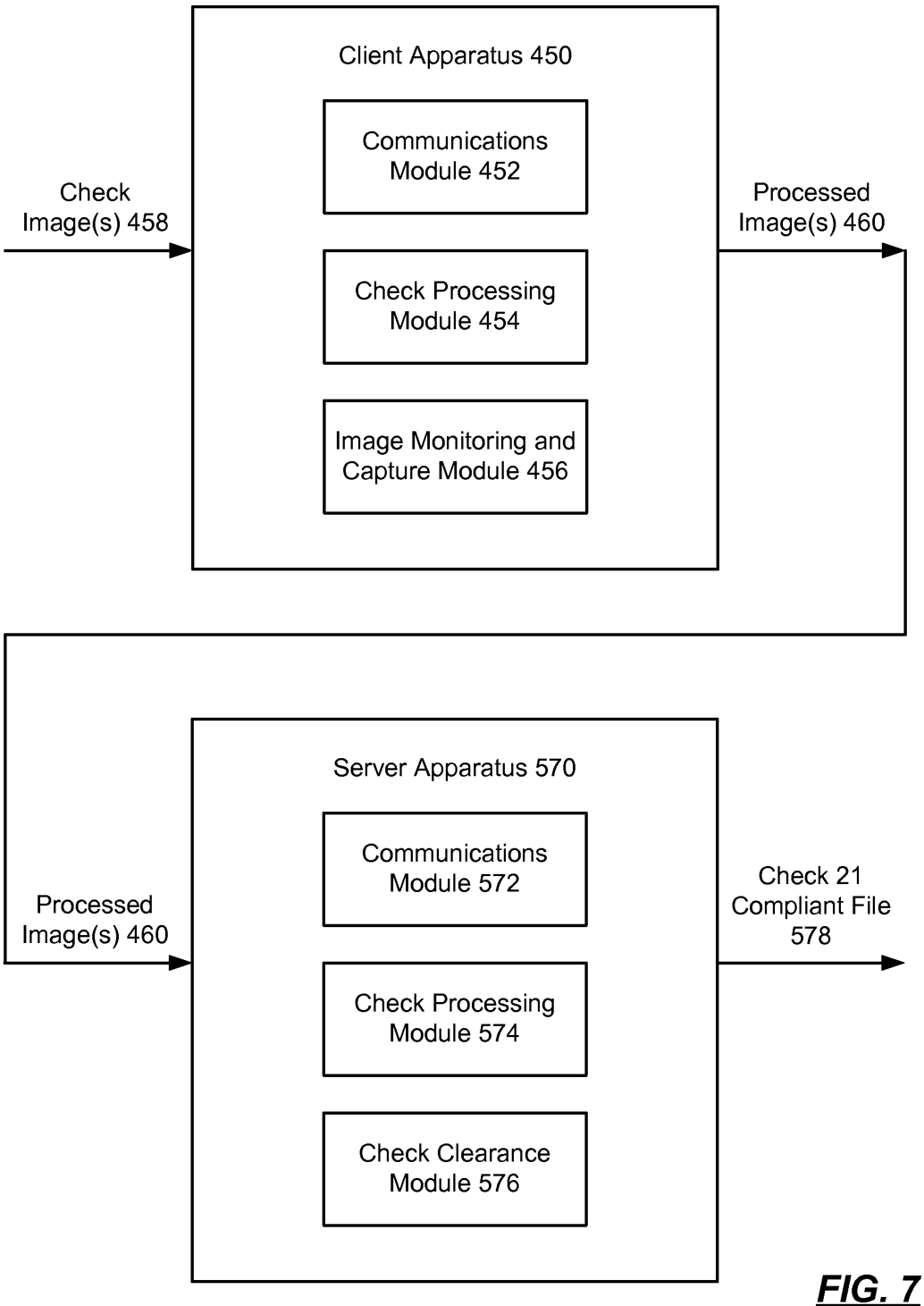

Client Apparatus 450
Communications Module 452
Check Processing Module 454
Image Monitoring and Capture Module 456
Check Image(s) 458
Processed Image(s) 460
Server Apparatus 570
Communications Module 572
Check Processing Module 574
Check Clearance Module 576
Processed Image(s) 460
Check 21 Compliant File 578

FIG. 7

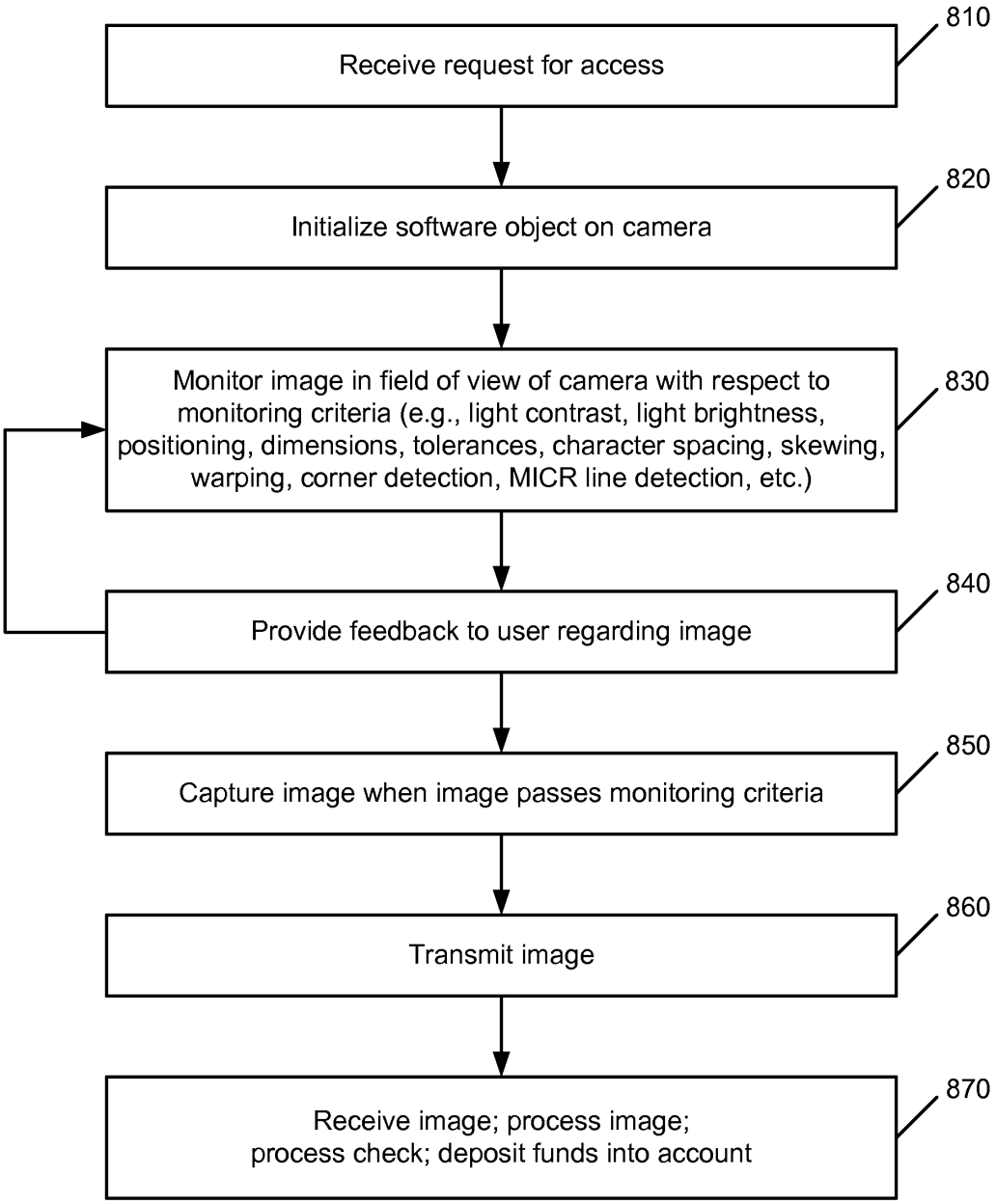

Receive request for access
810
Initialize software object on camera
820
Monitor image in field of view of camera with respect to monitoring criteria (e.g., light contrast, light brightness, positioning, dimensions, tolerances, character spacing, skewing, warping, corner detection, MICR line detection, etc.)
830
Provide feedback to user regarding image
840
Capture image when image passes monitoring criteria
850
Transmit image
860
Receive image; process image; process check; deposit funds into account
870
800

FIG. 8

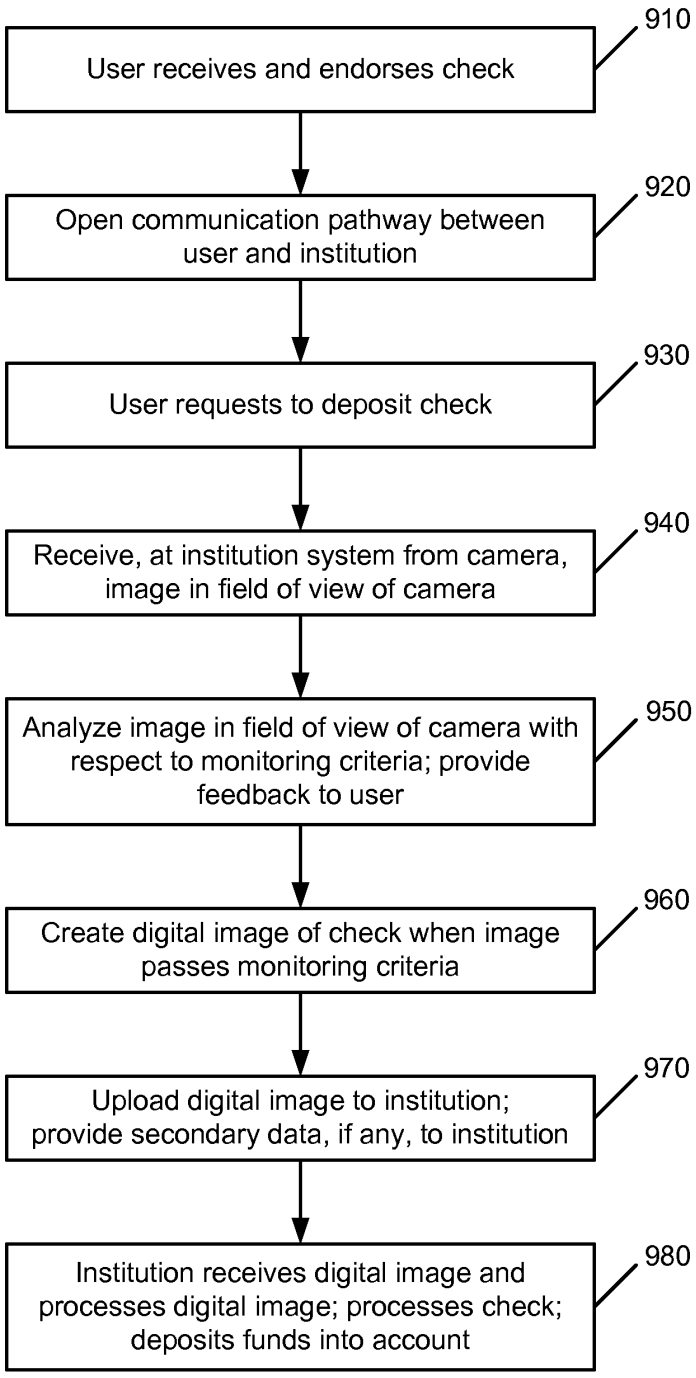

User receives and endorses check
910
Open communication pathway between user and institution
920
User requests to deposit check
930
Receive, at institution system from camera, image in field of view of camera
940
Analyze image in field of view of camera with respect to monitoring criteria; provide feedback to user
950
Create digital image of check when image passes monitoring criteria
960
Upload digital image to institution; provide secondary data, if any, to institution
970
Institution receives digital image and processes digital image; processes check; deposits funds into account
980
900

FIG. 9

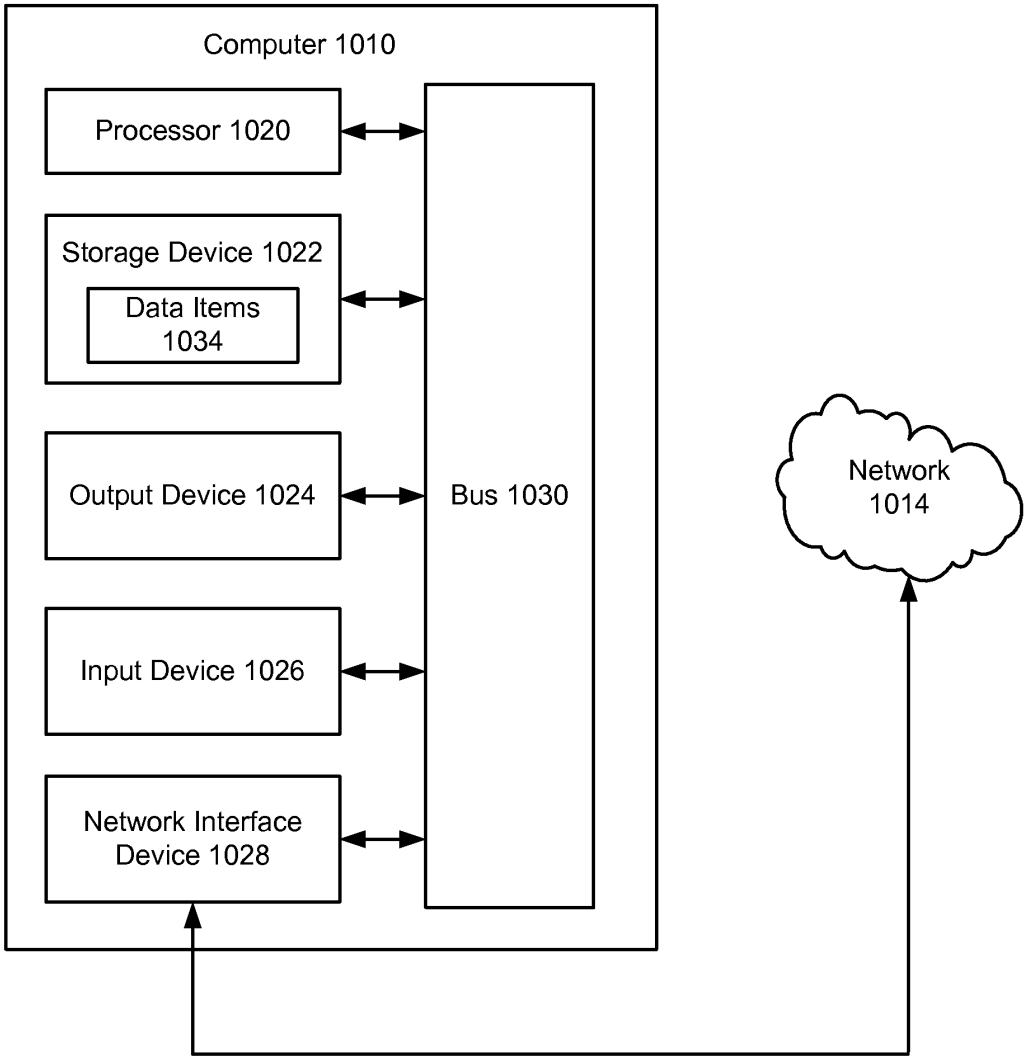

Computer 1010
Processor 1020
Storage Device 1022
Data Items 1034
Output Device 1024
Input Device 1026
Network Interface Device 1028
Bus 1030
Network 1014
1000

FIG. 10

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 09/30/2025. OMB 0651-0035
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Application Number	To be assigned
Filing Date	Herewith
First Named Inventor	Michael Patrick Bueche Jr.
Title	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING
Art Unit	To be assigned
Examiner Name	To be assigned
Attorney Docket Number	US-0691.12c | 32-10527US2

SIGNATURE of Applicant or Patent Practitioner

Signature	/Christopher R. Abidin/	Date (Optional)	
Name	Christopher R. Abidin	Registration Number	74742
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

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Document Description: Power of Attorney

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

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☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 197306

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

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OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

UNITED SERVICES AUTOMOBILE ASSOCIATION (USAA)

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	Charlotte Whitaker	Date (Optional)	December 15, 2023
Name	Charlotte Whitaker		
Title	VP, Intellectual Property Counsel for United Services Automobile Association (USAA)		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/01 (06-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	Systems And Methods For Image Monitoring Of Check During Mobile Deposit

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____

filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Michael Patrick Bueche, Jr. Date (Optional): 6/6/2013

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	Systems And Methods For Image Monitoring Of Check During Mobile Deposit

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

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LEGAL NAME OF INVENTOR

Inventor: Minya Liang Date (Optional) : _____

Signature: Minya Liang

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Reynaldo Medina Date (Optional): May 27 2015

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Charles Lee Oakes, III Date (Optional): 5/30/2013

Signature: Charles Lee Oakes, III

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Bharat Prasad Date (Optional): 05/30/2013

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**12/02/2024 11:16:11 PM Z ET**	**US-0691.12c | 32-10527US2**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	68191842	FILING DATE	-
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche Jr.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 12

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2024-12-02_US-0691-12c_32-10527US2_Method_ADS.pdf	10	Application Data Sheet	2175 KB
2024-12-02_US-0691-12c_32-10527US2_Method_Drawings.pdf	8	Drawings-only black and white line drawings	86 KB
2024-12-02_US-0691-12c_32-10527US2_Method_Nonpublication-Request.pdf	2	Nonpublication request from applicant	226 KB
2024-12-02_US-0691-12c_32-	2	Power of Attorney	358 KB

10527US2_Method_POA.pdf				
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF.pdf		44	-	6814 KB
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF-SPEC.pdf	(1-31)	31	Specification	6387 KB
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF-CLM.pdf	(32-43)	12	Claims	113 KB
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF-ABST.pdf	(44-44)	1	Abstract	315 KB
2024-12-02_US-0691-12c_32-10527US2_Method_TrackOne-Request_chromesavepdf.pdf		2	Track One Request	116 KB
2024-12-02_US-0691-12c_32-10527US2_Declarations.pdf		5	Oath or Declaration filed	324 KB
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment.pdf		13	-	117 KB
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment-A.PE.pdf	(1-1)	1	Preliminary Amendment	66 KB
2024-12-02_US-0691-12c_32-	(2-12)	11	Claims	90 KB

10527US2_Preliminary-Amendment-CLM.pdf				
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment-REM.pdf	(13-13)	1	Applicant Arguments/Remarks Made in an Amendment	46 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2024-12-02_US-0691-12c_32-10527US2_Method_ADS.pdf	CFB13069D22FEB84503E747DC37A600FCA329A1CF3C4B5B86EE67F4CEB86882A1403BF4E8DC50789F072CE3B4E279C4E0FDF61395582C6155852BE2264559431
2024-12-02_US-0691-12c_32-10527US2_Method_Drawings.pdf	C7872C74F779D8A290507E6D0FF9B0FF3AE6BCA1AAA304C4DD3A73D80B8DB926B562236B62F010107A6D214409033EB03EFD73D77B6C80AF25CE2658882D67E7
2024-12-02_US-0691-12c_32-10527US2_Method_Nonpublication-Request.pdf	2A927DB16EC18D721623D02CD14AE1C12CD21CB1F95B83EC9F30CDF454C3F4E657E49A42FD51283E3DAAFFC0460BFDF8109D5D6FE464297FD35314B4EB201018
2024-12-02_US-0691-12c_32-10527US2_Method_POA.pdf	AF1A5B8840DB26A52D0F41A490E7D46208E9B71EDE4EFA6D9CB404F1E798CD5EDB85E70B12BE923024B1F012AC8B11BB1661281CF1E811607F057F14C6A6DE02
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF.pdf	A90D95B2D5175EE8CE7F506AC86F3B3D391B19C6CDCD4E7D5339D948A208ED5238482A3333614F2C473157988D2E75EC7D1FC4EAE0F83FEAB689DA44399DAB92
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF-SPEC.pdf	AD801451F2F2BA41FF8988E8F0EB2036E0223DAD4FAD73E358BB696C6438DC0CE36F97F289EC1EE05DB5608C57A5A50C9A8307B88B138233BD15632EDCC13B6D
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF-CLM.pdf	7AEAA86FE78C76DCA21B68F800DFE9D6E7CE67839D10C0EC449E73617FB4328944A7ABB451EB7848A39EAD149F032E9B7FF6CBEF1D4DAA89301DD22B19618791
2024-12-02_US-0691-12c_32-10527US2_Method_Spec-Claims-Abstract_previewPrintPDF-ABST.pdf	02D1BF41F0A588827F74AB3B423C5961FCB2F51DFF62D7F801A9D17DC6599101FE45F4985EA55D5660DFEF1711F00ACCD1CEA39A1779AB60B1AF68E96D3689E0

2024-12-02_US-0691-12c_32-10527US2_Method_TrackOne-Request_chromesavepdf.pdf	029A4817FBB83757907CE6C966D007287879C4AE77D7F20E3400EC09ECB5D562B89F95BCE549856124B99BB8B192EA3C941A44CB34832CA08D6BE279E2AAAF95
2024-12-02_US-0691-12c_32-10527US2_Declarations.pdf	F22EF34DA35063CEBA35CED3603D608DFD7D461DF8C4951F9D76C7F52B520FFCC752FF0419B6A5BCAB2897538B9E233D2F1C0E84104ACC452D61F2BF5A270122
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment.pdf	E68D1749F3C1A54825B30BC9232595780FDFC87700F523548B086A51AAA78037B966483ED94F7A97EF88D3527A9CD1ECAF236355757D693562463F41FDDDDA06
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment-A.PE.pdf	58B25A76D0F0B4F763E8B7CD5029E2304168EDCEDE6C8C1A552B6D5314FCE4CD1172D5841E569DBEEFFD6EFD86F0EFFB5F5B2B2B419065F95931F5A8614C59F1
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment-CLM.pdf	919C0570A542337EB1CBA9CBB8ABA9F4839E8198718E63A15D898F46CC7B7BEE1EB46F5D65E6B1AF7E205A374A124F778DA98D891B6E786E5EEBF2B5AE9E0C64
2024-12-02_US-0691-12c_32-10527US2_Preliminary-Amendment-REM.pdf	B1DFA2D02C613B6D24813DBFD59CC93A647CAF623CF8EC8D86F674445EFF92A0141C3EB598ABC6D7029FDBC36077C03B5166F08DE0C838D5AC2A468650943808

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
18/966,097	12/02/2024		2700	US-0691.12c | 32-10527US2	14	4

CONFIRMATION NO. 3179

197306
Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

FILING RECEIPT

OC000000081731693

Date Mailed: 12/11/2024

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Michael Patrick Bueche, JR., San Antonio, TX;
Bharat Prasad, San Antonio, TX;
Minya Liang, San Antonio, TX;
Reynaldo Medina, San Antonio, TX;
Charles Lee Oakes, III, Boerne, TX;

Applicant(s)

United Services Automobile Association (USAA), San Antonio, TX;

Assignment For Published Patent Application

United Services Automobile Association (USAA), San Antonio, TX

Power of Attorney: The patent practitioners associated with Customer Number 197306

Domestic Priority data as claimed by applicant

This application is a CON of 18/593,856 03/01/2024 PAT 12,159,310
which is a CON of 17/161,235 01/28/2021 ABN
which is a CON of 16/712,182 12/12/2019 PAT 11,341,465
which is a CON of 16/280,455 02/20/2019 ABN
which is a CON of 15/792,966 10/25/2017 PAT 10,235,660
which is a CON of 15/392,950 12/28/2016 PAT 9,818,090
which is a CON of 13/922,686 06/20/2013 PAT 9,569,756
which is a CON of 12/545,127 08/21/2009 PAT 8,977,571

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 12/10/2024

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/966,097**

Projected Publication Date: Request for Non-Publication Acknowledged

Non-Publication Request: Yes

Early Publication Request: No
Title

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 18/966,097

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	14 minus 20 =	* 0			OR	x =	0
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 480 =	480
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	2300

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 32-10527US2	3179

197306 7590 01/16/2025

Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

EXAMINER	
CENTRAL, DOCKET	

ART UNIT	PAPER NUMBER
OPAP	

NOTIFICATION DATE	DELIVERY MODE
01/16/2025	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chris@carmichaelip.com
jim@carmichaelip.com
susan@carmichaelip.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 18/966,097	**Applicant(s)** Bueche et al.	
	Examiner FIKIRTE A GEREMEW	**Art Unit** OMBL	**AIA (FITF) Status** Yes

1. THE REQUEST FILED 02 December 2024 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to FIKIRTE GEREMEW at (703) 756-1930. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/FIKIRTE A GEREMEW/ PROGRAM SUPPORT SPECIALIST, OMBL	

PTO/SB/08a (01-25)
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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Examiner Name	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☐ No IDS size fee is required under 37 CFR 1.17(v) at this time.

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(1).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).

☒ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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UNITED STATES
PATENT AND TRADEMARK OFFICE

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Alexandria, VA 22313 - 1450
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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**01/23/2025 11:52:50 PM Z ET**	**US-0691.12c | 32-10527US2**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	68890632	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	12/02/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E20251MN53319126**	**Christopher Abidin**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
504184	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1834	FILING AN INFORMATION DISCLOSURE STATEMENT THAT CAUSES THE CUMULATIVE NUMBER OF APPLICANT-PROVIDED ITEMS OF INFORMATION TO EXCEED 200	800.00	1	800.00
			TOTAL AMOUNT:	**$800.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized

by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-25)
Approved for use through 11/30/2027. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	1							☐

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	1	CBM2019-00028, Robinson, Daniel, "Client Week — Handsets advance at 3GSM", Copyright 2004 by VNU Business Publications Ltd., 2 pgs.	☐
	2	CBM2019-00028, Seitz, Patrick "Multifunction Trend Shaking Up The Handheld Device industry; Solid Sales Expected in 2004; PDA, handset, camera — one single, small product can fill a variety of roles", Copyright 2004 Investor's Business Daily, Inc., 3 pgs.	☐
	3	CBM2019-00028, United Services Automobile Association ('USAA')'s Patent Owner Preliminary Response, dated July 8, 2019, 73 pgs.	☐
	4	CBM2019-00028, Wong, May "HP unveils new mobile computers", Copyright 2006 by The Buffalo News, 2 pgs.	☐
	5	CBM2019-00029 Patent No. 10,013,605, Declaration of Peter Alexander, Ph.D., dated March 28, 2019, 76 pgs.	☐
	6	CBM2019-00029 Patent No. 10,013,605, Petition For Covered Business Method Review of Claims 1-3, 5-14, 16-29 of US Patent No, 10,013,605, dated March 28, 2019, 88 pgs.	☐
	7	CBM2019-00029 Patent No. 10,013,605, Plaintiff United Services Automobile Association (USAA) Preliminary Claim Constructions And Extrinsic Evidence, dated March 15, 2019, 74 pgs.	☐
	8	CBM2019-00029, "Dynamism.com: Take tomorrow's tech home today with Dynamism.com: Latest gadgets merge next generation technology with high style design", Copyright 2006 Normans Media Limited, 2 pgs.	☐
	9	CBM2019-00029, Declaration of Matthew A. Calman in Support of Patent Owner Preliminary Response, dated July 17 2019, 29 pgs.	☐
	10	CBM2019-00029, Defendant's Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 31, 2019, 28 pgs.	☐
	11	CBM2019-00029, HP User Guide, Additional Product Information, Copyright 2006 by Hewlett-Packard Development Company, L.P., 204 pgs.	☐

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	12	CBM2019-00029, Palenchar, Joseph, "PDA Phone Adds WiFi VoIP, Turn-By-Turn GPS Navigation", Copyright 2006 by Reed Business Information, 2 pgs.	☐
	13	CBM2019-00029, Pocket PC User Manual, Version 1, dated May 2006 by Microsoft, 225 pgs.	☐
	14	CBM2019-00029, United Services Automobile Association (USAA)'s Patent Owner Preliminary Response, dated July 17, 2019, 76 pgs.	☐
	15	CBR online, "Diebold launches ATM depository technology", October 4, 2007, 5 Pgs.	☐
	16	Century Remote Deposit High-Speed Scanner User's Manual Release 2006, (Century Manual), Century Bank, 2006, (32 pgs).	☐
	17	Certificate of Accuracy related to Article entitled, "Deposit checks by mobile" on webpage: https://www.elmundo.es/navegante/2005/07/21/empresas/1121957427.html signed by Christian Paul Scrogum (translator) on September 9, 2021.	☐
	18	Check Clearing for the 21st Century Act Foundation for Check 21 Compliance Training, Federal Financial Institutions Examination Council, (Oct. 16, 2004), available on the Internet at: https://web.archive.org/web/20041016100648/https://www.ffiec.gov/exam/check21/check21foundationdoc.htm, (excerpts attached as Exhibit 20 from the Defendant Wells Fargo Bank, N.A.'s Answer dated August 14, 2018), 11 pgs.	☐
	19	Check Clearing for the 21st Century Act, H. R. Rep. No. 108-132, June 2, 2003, 20 pgs.	☐
	20	Cheq Information Technology White Paper, "Teller Scanner Performance and Scanner Design: Camera Position Relative to the Feeder", dated 2005, 7 pgs.	☐
	21	Chiang, Chuck, The Bulletin, "Remote banking offered", http://bendbulletin.com/apps/pbcs.dll/article?AID=/20060201/BIZ0102/602010327&templ..., May 23, 2008 (2 pgs).	☐
	22	Claim Construction Memorandum Opinion and Order, filed in Civil Action No. 2:18-CV-245, dated June 13, 2019, 48 pgs.	☐

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	23	Claim Construction Memorandum Opinion and Order, United Services Automobile Association v. Wells Fargo Bank, N. A., Civil Action No. 2:18-cv-366, dated July 29, 2019, 36 pgs.	☐
	24	Claims as filed January 24, 2018 for U.S. Appln No. 15/878,821 (5 pgs).	☐
	25	Claims as filed January 31, 2018 for U.S. Appln No. 15/884,990 (6 pgs).	☐
	26	Claims as filed May 18, 2018 for U.S. Appln No. 15/983,983 (3 pgs).	☐
	27	Claims as filed on April 1, 2013 for U.S. Appln No. 13/854,521 (5 pgs).	☐
	28	Claims as filed on April 3, 2008 for U.S. Appln No. 12/062,163 (3 pgs).	☐
	29	Claims as filed on April 3, 2008 for U.S. Appln No. 12/062,175 (3 pgs).	☐
	30	Claims as filed on April 30, 2013 for U.S. Appln No. 13/874,145 (5 pgs).	☐
	31	Claims as filed on April 9, 2018 for U.S. Appln No. 15/948,510 (5 pgs)	☐
	32	Claims as filed on April 9, 2018 for U.S. Appln No. 15/948,549 (5 pgs)	☐
	33	Claims as filed on August 19, 2010 for U.S. Appln No. 12/859,752 (5 pgs).	☐

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	34	Claims as filed on August 21, 2009 for U.S. Appln No. 12/545,127 (5 pgs).	☐
	35	Claims as filed on December 15, 2011 for U.S. Appln No. 13/327,478 (4 pgs).	☐
	36	Claims as filed on December 20, 2006 for U.S. Appln No. 11/613,671 (3 pgs).	☐
	37	Claims as filed on December 20, 2012 for U.S. Appln No. 13/722,576 (4 pgs).	☐
	38	Claims as filed on December 28, 2016 for U.S. Appln No. 15/392,950 (5 pgs).	☐
	39	Claims as filed on December 29, 2005 for U.S. Appln No. 11/320,998 (3 pgs).	☐
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	41	Claims as filed on December 8, 2010 for U.S. Appln No. 12/963,513 (7 pgs).	☐
	42	Claims as filed on December 9, 2015 for U.S. Appln No. 14/964,279 (5 pgs).	☐
	43	Claims as filed on February 12, 2013 for U.S. Appln No. 13/765,412 (1 pg).	☐
	44	Claims as filed on February 15, 2012 for U.S. Appln No. 13/397,437 (6 pgs).	☐

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	45	Claims as filed on February 16, 2011 for U.S. Appln No. 13/028,477 (3 pgs).	☐
	46	Claims as filed on February 19, 2013 for U.S. Appln No. 13/770,048 (4 pgs).	☐
	47	Claims as filed on February 3, 2016 for U.S. Appln No. 15/014,918 (5 pgs).	☐
	48	Claims as filed on January 20, 2011 for U.S. Appln No. 13/010,644 (9 pgs).	☐
	49	Claims as filed on January 31, 2011 for U.S. Appln No. 13/017,865 (11 pgs).	☐
	50	Claims as filed on July 19, 2017 for U.S. Appln No. 15/654,497 (1 pg).	☐

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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered and whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael P. Bueche, Jr. Art Unit: 3694

Appln. No.: 18/966,097 Examiner: William E. Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Pursuant to 37 C.F.R. § 1.56, and without any assertion as to materiality or prior art effect, the documents listed on the forms PTO/SB/08a submitted herewith are hereby cited. No aspect of this submission constitutes a disclaimer of claim scope. The submission of this information disclosure statement is not an admission that any item cited herein is prior art as to the claimed invention or that any item cited herein is material to patentability.

In accordance with § 1.98(d), copies of documents that were previously submitted to, or cited by, the Office in prior U.S. Appln. Nos. 18/593,856, 17/161,235, 16/712,182, 16/280,455, 15/792,966, 15/392,950, 13/922,686, and 12/545,127, to which the present application claims the benefit under 35 U.S.C. § 120, are not provided herewith.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c | 32-10527US2) any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in

connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: January 23, 2025

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

U.S. PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Inventor of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	7163347	B2	2007-01-16	Lugg	
	2	7178721	B2	2007-02-20	Maloney	
	3	7181430	B1	2007-02-20	Buchanan et al.	
	4	7184980	B2	2007-02-27	Allen-Rouman et al.	
	5	7197173	B2	2007-03-27	Jones et al.	
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	7	7204412	B2	2007-04-17	Foss, Jr.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	10	7219082	B2	2007-05-15	Forte	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	22	7313543	B1	2007-12-25	Crane et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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Application Number	18966097
Filing Date	2024-12-02
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	
Examiner Name	
Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
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PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☐ No IDS size fee is required under 37 CFR 1.17(v) at this time.

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SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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☐ See attached timing statement under 37 CFR 1.97(e).

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☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

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Name/Print	Christopher R. Abidin	Registration Number	74742

PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	18966097
Filing Date	2024-12-02
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	
Examiner Name	
Attorney Docket Number	US-0691.12c | 32-10527US2

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	1	IPR2019-00815, United Services Automobile Association ("USAA")'s Patent Owner Preliminary Response, dated June 27, 2019, 66 pgs.	☐
	2	IPR2019-01081 — US 9,336,517 B1, Decision Granting Institution of Inter Partes Review 35 U.S.C. § 314; 37 C.F.R. § 42.4, dated January 13, 2020, 60 pgs.	☐
	3	IPR2019-01081 Patent No. 9,336,517, Petition for Infer Partes Review of Claims 1, 5-10, 12-14, 17-20 of US Patent No. 9,336,517, dated June 5, 2019, 78 pgs.	☐
	4	IPR2019-01081, Declaration of Peter Alexander, Ph.D, dated June 5, 2019, 135 pgs.	☐
	5	IPR2019-01082 — US 8,977,571 B1, Decision Granting Institution of Inter Partes Review 35 U.S.C. § 314; 37 C.F.R. § 42.4, dated December 13, 2019, 56 pgs.	☐
	6	IPR2019-01082 Patent No. 8,977,571, Petition for Inter Partes Review of Claims 1-13 Patent No. 9,336,517, dated June 5, 2019, 75 pgs.	☐
	7	IPR2019-01083 — US 8,977,571 B1, Decision Granting Institution of Inter Partes Review 35 U.S.C. § 314, dated January 9, 2020, 58 pgs.	☐
	8	IPR2019-01083 Patent No. 8,699,779, Petition for Inter Partes Review of Claims 1-18 Patent No. 8,699,779, dated June 5, 2019, 74 pgs.	☐
	9	IPR2020-00092, US Patent No. 9,569,756, Petition for Inter Parties Review of Claims 1-7, 9-17, 29 and 30 of US Patent No. 9,569,756, dated November 7, 2019, 74 pgs.	☐
	10	IPR2020-00882 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 9,818,090, dated April 30, 2020, 102 pgs.	☐
	11	IPR2020-00975 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 8,977,571 dated May 22, 2020, 96 pgs.	☐

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	12	IPR2020-00976 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 8,699,779, dated May 22, 2020, 87 pgs.	☐
	13	IPR2020-01101 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 9,336,517, dated June 12, 2020, 91 pgs.	☐
	14	IPR2022-00049 filed October 22, 2021 on behalf of PNC Bank N.A., 70 pages	☐
	15	IPR2022-00050 filed October 22, 2021 on behalf of PNC Bank N.A., 126 pages	☐
	16	IPR2022-00075 filed November 5, 2021 on behalf of PNC Bank N.A., 90 pages	☐
	17	IPR2022-00076 filed November 17, 2021 on behalf of PNC Bank N.A., 98 pages	☐
	18	IPR2023-00829 filed April 13, 2023, Truist Bank vs. United Services Automobile Association, 97 pages	☐
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	23	Joinson et al., Olympus E-30 Review (pts.1,4,8), Digital Photography Review, March 24, 2009, located on the Internet at: www.dpreview.com/reviews/olympus30, 6 pgs.	☐
	24	Jung et al, "Rectangle Detection based on a Windowed Hough Transform", IEEE Xplore, 2004, 8 pgs.	☐
	25	Kendrick, Kevin B., "Check Kiting, Float for Purposes of Profit," Bank Security & Fraud Prevention, vol. 1, no. 2, 1994 (3 pgs).	☐
	26	Kiser, Elizabeth K.; "Modeling the Whole Firm: The Effect of Multiple Inputs and Financial Intermediation on Bank Deposit Rates;" FEDS Working Paper No. 2004-07; June 3, 2003; pages 1-46 (46 pgs)	☐
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	29	Knestout, Brian P. et al., "Banking Made Easy" Kiplinger's Personal Finance Washington, July 2003, vol 57, Iss 7 (5 pgs)	☐
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	32	Laine, M. et al., "A Standalone OCR System For Mobile Cameraphones", IEEE, 2006, 5 pgs.	☐
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	34	Lange, Bill, "Combining Remote Capture and IRD Printing, A Check 21 Strategy For Community and Regional Banks", dated 2005, 25 pgs.	☐
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	36	Lee, Jeanne, "Mobile Check Deposits: Pro Tips to Ensure They Go Smoothly", dated February 19, 2016, 6 pgs.	☐
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	38	Levitin, Adam J., Remote Deposit Capture: A Legal and Transactional Overview, Banking Law Journal, p. 115, 2009 (RDC)	☐
	39	Liang, J. et al., "Camera-based analysis of text and documents: a survey", IJDAR, Vol. 7, 2005, pp 84-104, 21, pgs.	☐
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	45	Matthews, Deborah, "Advanced Technology Makes Remote Deposit Capture Less Risky," Indiana Bankers Association, April 2008 (2 pgs).	☐
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	49	Metro 1 Credit Union, "Remote Banking Services," http://www.metro1cu.org/metro1cu/remote.html, downloaded April 17, 2007 (4 pgs).	☐
	50	MICR-Line Issues Associated With The Check 21 Act and the Board's Proposed Rule, Prepared by Federal Reserve Board Staff, April 27, 2004	☐

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TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

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TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

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☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

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Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☐ No IDS size fee is required under 37 CFR 1.17(v) at this time.

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A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Attorney Docket Number	US-0691.12c | 32-10527US2

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**01/23/2025 11:52:50 PM Z ET**	**US-0691.12c | 32-10527US2**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	68890632	FILING DATE	12/02/2024
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 14

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-01-23_US-0691-12c_32-10527US2_IDS-Transmittal.pdf	2	Transmittal Letter	57 KB
2025-01-23_US069112C3210527US2_2_OF_13.pdf	36	Information Disclosure Statement (IDS) Form (SB08)	1341 KB
2025-01-23_US069112C3210527US2_3_OF_13.pdf	37	Information Disclosure Statement (IDS) Form (SB08)	1344 KB
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DOCUMENT	MESSAGE DIGEST(SHA-512)
2025-01-23_US-0691-12c_32-10527US2_IDS-Transmittal.pdf	9C1B989CFF095D70BECF059753558C553A31999FD320CC60FB46005160CF4538BF71CE7F00870AEFE383F110D9381C9FF26D96154E3E7C6E385C71034F852254
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2025-01-23_US069112C3210527US2_5_OF_13.pdf	4F43F2B1E8675DD80292DCF084479DB2D031A11191DFDD7E5F5DC167A450626415B7749F915A4EB4A3BB1A53E0D4E1AAABBCDC8A2293CE278065BCC333D5A43A
2025-01-23_US069112C3210527US2_6_OF_13.pdf	CB7E3A9DC8039C4C5909DBF3D6595B7B0C337DE53A21066CA81D0AF9EA8AF9170A51428E2D3980FFF59630A68D061B6DBD7AC20D0AC0622E55C875CAD62D8E06
2025-01-23_US069112C3210527US2_10_OF_13.pdf	2626C9016B674AB6DF0837E94BB3074162F5A737C8CCD066FCD5A767D89BDBF9E9E8AE66C75BAD215A38CBD08E5D2324832F11B952CC4F6F0907EBF27C8E4C12
2025-01-23_US069112C3210527US2_9_OF_13.pdf	1CD9ED59F69FC829C76BA88BDFA4F456FF2B9D2037F5EFAF5D1D90C35CBF4F2A469AF773B9261A58934FDF94067480C635524183173DF1534420D84E13F3C227
2025-01-23_US069112C3210527US2_12_OF_13.pdf	70983195B45752496E83B5412729D0DB4D507753C2DB8A8B0000C548FAA095430B1F5F148AB31C4448259D9E1ADADB0EBCD142E3E269CCEFCE63268DD66CA036
2025-01-23_US069112C3210527US2_11_OF_13.pdf	B13F82A3BE309DC63970F915975E797480CA4FD09B513B8A81EFCC22F7F6E5FE666C5E256BA093EB3D4D39A710446FBF33ED2F5121AA3F60FB5EF1AAD0CC07FD
2025-01-23_US069112C3210527US2_13_OF_13.pdf	77BEB2A6A221FE39151FDAE15701BC048C2881EA62188FCC181574F0865A1C8DF2BED0F9B975D4F131BFE66701EEBE3A9CB91E380FF9C9343D7A497771C1B173
2025-01-23_US069112C3210527US2_1_OF_13.pdf	C108E707B7AB78EAE77A9B2E97AFC38A12AC29E54FDC3349F7DD42F18CC420ECD41663C6467E20FAEF747115F0D64DFF50267917DA63CA81878D105E085DBFDB

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Application Number	18966097
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First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	
Examiner Name	
Attorney Docket Number	US-0691.12c | 32-10527US2

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Name/Print	Christopher R. Abidin	Registration Number	74742

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	20	Yeo, L.H. et al., "Submission of transaction from mobile workstations in a cooperative multidatabase environment", IEEE, 1994, (cited in IPR2020-00097, US Patent No. 7,885,880), 10 pgs.	☐
	21	Yong Gu Ji et al., "A Usability Checklist for the Usability Evaluation of Mobile Phone User Interface", International Journal of Human-Computer Interaction, 20(3), 207-231 (2006)	☐
	22	Zandifar, A. et al., "A Video Based Interface To Textual Information For The Visually Impaired", IEEE 17th INTERNATIONAL SYMPOSIUM ON PERSONAL, INDOOR AND MOBILE RADIO COMMUNICATIONS, 1-5, 2002, 6 pgs.	☐

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	23	Zandifar, A., "A Video-Based Framework for the Analysis of Presentations/Posters," International Journal on Document Analysis and Recognition, February 2, 2005, 10 pages.	☐
	24	Zaw, Kyi Pyar and Zin Mar Kyu, "Character Extraction and Recognition for Myanmar Script Signboard Images using Block based Pixel Count and Chain Codes" 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (CS), IEEE, 2018.	☐
	25	Zhang, C.Y., "Robust Estimation and Image Combining" Astronomical Data Analysis Software and Systems IV, ASP Conference Series, 1995 (5 pgs)	☐
	26	Zions Bancorporation, "Moneytech, the technology of money in our world: Remote Deposit," http://www.bankjunior.com/pground/moneytech/remote_deposit.jsp, 2007 (2 pgs).	☐

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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TIMING STATEMENT

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OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

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SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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	1	Claims as filed on July 28, 2017 for U.S. Appln No. 15/663,284 (6 pgs).	☐
	2	Claims as filed on July 28, 2017 for U.S. Appln No. 15/663,305 (6 pgs).	☐
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	5	Claims as filed on June 15, 2016 for U.S. Appln No. 15/183,461 (36 pgs).	☐
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	12	Claims as filed on March 25, 2014 for U.S. Appln No. 14/225,090 (1 pg).	☐
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	14	Claims as filed on May 10, 2007 for U.S. Appln No. 11/747,223 (4 pgs).	☐
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	16	Claims as filed on May 2, 2011 for U.S. Appln No. 13/098,566 (10 pgs).	☐
	17	Claims as filed on November 20, 2012 for U.S. Appln No. 13/682,268 (4 pgs).	☐
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	24	Claims as filed on October 16, 2014 for U.S. Appln No. 14/516,364 (4 pgs).	☐
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	40	Claims as filed September 8, 2014 for U.S. Appln No. 14/479,478 (5 pgs).	☐
	41	Clancy, Heather, "Turning cellphones into scanners", The New York Times, Feb 12, 2005; https://www.nytimes.com/2005/02/12/busienss/worldbusiness/turningcellphones-into-scanners.html	☐
	42	CNN.com/technology, "Scan, deposit checks from home", www.cnn.com/2008ITECH/biztech/02/07/check.scanning.ap/index.html, February 7,2008 (3 pgs).	☐
	43	Constanzo, Chris, "Remote Check Deposit: Wells Captures A New Checking Twist", Bank Technology News Article — May 2005, www.americanbanker.com/btn_article.html?id=20050502YQ50FSYG (2 pgs)	☐
	44	Consumer Assistance & Information — Check 21, https://www.fdic.gov/consumers/assistance/protection/check21.html (FDIC)	☐

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	45	Consumer Guide to Check 21 and Substitute Checks, The Federal Reserve Board, The Wayback Machine – October 28, 2004 https://web.archive.org/web/20041102233724/http://www.federalreserve.gov	☐
	46	Craig Varеam, "Image Deposit Solutions" Emerging Solutions for More Efficient Check Processing", November 2005, 16 pages.	☐
	47	Craig, Ben, "Resisting Electronic Payment Systems: Burning Down the House?", Federal Reserve Bank of Cleveland, July 1999 (4 pgs)	☐
	48	Creativepaymentsolutions.com, "Creative Payment Solutions - Websolution," www.creativepaymentsolution.com/cps/financialservices/websolution/default.html, Copyright 2008, Creative Payment Solutions, Inc. (1 pg).	☐
	49	Credit Union Journal, "AFCU Averaging 80 DepositHome Transactions Per Day", Credit Union Journal, August 15, 2005 (1 pg)	☐
	50	Credit Union Journal, "The Ramifications of Remote Deposit Capture Success", www.cuiournal.com/orintthis.html?id=20080411 EODZT57G, April 14, 2008 (1 pg).	☐

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Name/Print	Christopher R. Abidin	Registration Number	74742

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PTO/SB/08a (01-25)
Approved for use through 11/30/2027. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	18966097
Filing Date	2024-12-02
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	
Examiner Name	
Attorney Docket Number	US-0691.12c | 32-10527US2

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	1	Rohs, M. et al., "A Conceptual Framework for Camera Phone-based Interaction Techniques", in PERVASIVE COMPUTING, Berlin Heidelberg, 2005, pp 171-189.	☐
	2	Rose, Sarah et al., "Best of the We: The Top 50 Financial Websites", Money, New York, Dec. 1999, vol. 28, Iss. 12 (8 pgs)	☐
	3	Rowles, Tony, USAA v. Wells Fargo No. 2:16-cv-245-JRGL e-mail correspondence dated January 24, 2019, 2 pgs.	☐
	4	Santomero, The Evolution of Payments in the U.S.: Paper vs. Electronic (2005) retrieved from https://web.archive.org/web/20051210185509/https://www.philadelphiafed.org/publicaffairs/speeches/2005_santomero9.html	☐
	5	SCH-i910 Portable Dualmode Smartphone User Guide by Samsung, Copyright 2009 Samsung Electronics Canada, downloadable from www.manualslib.com, 168 pgs.	☐
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	8	Shah, Moore's Law, Continuous Everywhere But Differentiable Nowhere, February 12, 2009, located on the Internet at: http://samjshah.com/2009/02/24/moores-law/, 5 pgs,	☐
	9	Shelby, Hon. Richard C. (Committee on Banking, Housing and Urban Affairs); "Check Truncation Act of 2003", calendar no. 168, 108th Congress, 1st Session Senate report 108-79, June 2003 (27 pgs)	☐
	10	Shirai, K. et al., "Removal of Background Patterns and Signatures for Magnetic Ink Character Recognition of Checks," 2012 10th IAPR International Workshop on Document Analysis Systems, Gold Coast, QLD. Australia, 2012, pp 190-194	☐
	11	Sing Li & Jonathan Knudsen, Beginning J2ME: From Novice to Professional, Third Edition (2005), ISBN (pbk): 1-59059-479-7, 468 pages	☐

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	12	Smartphone-assisted smooth live video broadcast on wearable cameras; 2016 IEEE/ACM 24th International Symposium on Quality of Service (IWQoS) (2016, Page(s): 1-6); Jiwei Li, Zhe Peng, Bin Xiao; 20-Jun-2016. (Year: 2016).	☐
	13	SONY Digital Camera User's Guide/Trouble Shooting Operating Instructions, copyright 2005, located on the Internet at: https://www.sony.co.uk/electronics/support/res/manuals/2654/26544941M.pdf (attached as Exhibit 3 from the Defendant Wells Fargo Bank N.A.'s Answer dated August 14, 2018), 136 pgs.	☐
	14	Sony Ericsson K800i - Product Overview, 2006, 2 pgs.	☐
	15	Sony Ericsson K800i, User Manual, Part 1, 2006, 98 pgs.	☐
	16	SoyBank Anywhere, "Consumer Internet Banking Service Agreement," December 6, 2004 (6 pgs).	☐
	17	Spencer, Harvey, "Controlling Image Quality at the Point of Capture" Check 21, Digital Check Corporation & HSA 2004	☐
	18	Spenser, Harvey, "White Paper Check 21 Controlling Image Quality At The Point of Capture", dated 2004, 7 pgs.	☐
	19	Sprint PCS Vision Picture Phone, PM-8920 by Audiovox, User's Manual, Part 1, 2004, 103 pgs.	☐
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	21	Sumits, Major Mobile Milestones — The Last 15 Years, and the Next Five, Cisco Blogs, February 3, 2016, located on the Internet at: https://blogs.cisco.com/sp/mobile-vni-major-mobile-milestones-the-last-15-years-and-the-next-five, 12 pgs.	☐
	22	Teixeira, D., "Comment: Time to Overhaul Deposit Processing Systems," American Banker, Dec. 10, 1998, Vol. 163, No. 235, p. 15 (3 pgs).	☐

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	23	Thailandguru.com: How and where to Pay Bills @ www.thailandguru.com/paying-bills.html (2 pgs).	☐
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	25	The Green Sheet 2.0: Newswire, "CO-OP adds home deposit capabilities to suite of check imaging products", www.greensheet.com/newswire.php?newswire_id=8799, March 5, 2008 (2 pgs).	☐
	26	Timothy R. Crews list of Patents, printed from the United States Patent and Trademark Office on Feb. 13, 2019, 7 pgs.	☐
	27	Tiwari, Rajnish et al., "Mobile Banking as Business Strategy", IEEE Xplore, July 2006	☐
	28	Tochip, E. et al., "Camera Phone Color Appearance Utility", Matlab at Stanford University, 2007, 25 pgs.	☐
	29	Tygar, J.D., Atomicity in Electronic Commerce, In ACM Networker, 2:2, April/May 1998 (12 pgs)	☐
	30	U.S. App. No. 13/922,686, Office Action mailed October 16, 2013, 30 pages.	☐
	31	U.S. Patent App. No. 12/545,127, Applicant's Appeal Brief dated November 6, 2012, 21 pages.	☐
	32	U.S. Patent App. No. 12/545,127, Office Action dated April 4, 2012, 21 pages.	☐
	33	U.S. Patent App. No. 12/545,127, Office Action dated November 8, 2011, 7 pages.	☐

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	34	U.S. Patent App. No. 12/545,127, Office Action dated October 9, 2013, 7 pages.	☐
	35	U.S. Patent App. No. 12/549,443, Applicant's Office Action Response dated August 28, 2012, 11 pages.	☐
	36	U.S. Patent App. No. 12/549,443, Office Action dated May 8, 2012, 9 pages.	☐
	37	U.S. Patent App. No. 13/922,686, Office Action dated April 25, 2014, 50 pages.	☐
	38	U.S. Provisional Application No. 61/022,279, dated January 18, 2008, (cited in IPR2020-00090, US Patent No. 9,177,197), 35 pgs.	☐
	39	USAA's Objections to Magistrate Judge Payne's Claim Construction Memorandum Opinion and Order, filed in Civil Action No. 2:18-CV-245, dated June 27, 2019, 6 pgs.	☐
	40	USAA's Objections To Magistrate Judge Payne's Claim Construction Memorandum Opinion and Order, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-366, dated August 12, 2019, 10 pgs.	☐
	41	USAA's Opening Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 17, 2019, 670 pgs.	☐
	42	USAA's Opening Claim Construction Brief, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated April 11, 2019, 32 pgs.	☐
	43	USAA's Reply Claim Construction Brief, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated May 2, 2019, 227 pgs.	☐
	44	USAA's Reply Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated June 7, 2019, 14 pgs.	☐

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	45	USAA's Reply to Claim Construction Brief, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated May 2, 2019, 15 pgs.	☐
	46	V User Guide, https://www.lg.com/us/support/manualsdocuments?customerModelCode=% 20LGVX9800&csSalesCode=LGVX9800, select"VERISON(USA) en"; The V_UG_051125.pdf	☐
	47	Valentine, Lisa, "Remote Deposit Capture Hot Just Got Hotter," ABA Banking Journal, March 2006, pg. 1-9.	☐
	48	Van Dyke, Jim, "2017 Mitek Mobile Deposit Benchmark Report", copyright 2017, 50 pgs.	☐
	49	Varearn, Craig, "Image Deposit Solutions: Emerging Solutions for More Efficient Check Processing," JP Morgan Chase, November 2005 (16 pgs).	☐
	50	Wade, Will, "Early Debate on Remote-Capture Risk," American Banker, New York, NY, May 26, 2004 (3 pgs)	☐

If you wish to add additional non-patent literature document citation information, please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered and whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☐ No IDS size fee is required under 37 CFR 1.17(v) at this time.

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(1).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).

☒ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

PC.1.19.25

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PC.1.19.25

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 32-10527US2	3179

197306 7590 01/27/2025

Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

EXAMINER	
RANKINS, WILLIAM E	

ART UNIT	PAPER NUMBER
3694	

NOTIFICATION DATE	DELIVERY MODE
01/27/2025	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chris@carmichaelip.com
jim@carmichaelip.com
susan@carmichaelip.com

Office Action Summary	**Application No.** 18/966,097	**Applicant(s)** Bueche et al.	
	Examiner WILLIAM E RANKINS	**Art Unit** 3694	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 12/2/24.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-30 is/are pending in the application.

5a) Of the above claim(s) 2-5,10,12-15,19-22 and 27-29 is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,6-9,11,16-18,23-26 and 30 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 12/2/24 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

Status of Claims

Claims 1-30 are pending. Claims 2-5, 10, 12-15, 19-22, and 27-29 are canceled. Claims 1, 6-9, 11, 16-18, 23-26 and 30 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim(s) 1, 7-9, 11, 16-18, 24-26 and 30 is/are rejected under 35 U.S.C. 103 as being unpatentable over Prasad (10,380,562) in view of Buentello (10,504,185).

Prasad discloses:

1. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for

controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising **(Col. 5, ll 56-62, In another example, the instructions 330 may include a wholly self-contained application that when delivered to the client 320 will execute and perform one or more operations described herein. In either example, the software object may be configured to make one or more software calls 310 to a 60 digital camera, such as the camera 207 associated with the mobile device 106., Col. 6, ll 1-3, In an alternate example, the software object may operate through a software abstraction layer, such as an application programming interface (API).)**:

providing instructions to the user for capturing an image of a check **(Col. 9, ll 10-11, While a user may be instructed to place the check on a dark 10 or black background,)**;

overlaying an alignment guide on [the live video of] the check in the field of view of the camera **(Col. 9, ll 12-15, Alternatively or additionally, edge detection may be used to detect the check. Edge detection techniques have been described in other articles and any suitable method may be used herein.)**;

monitoring [the live video of] the check in the field of view of the camera with respect to at least one monitoring criterion **(Col. 9, ll 39-42, Alternatively, a rotating calipers algorithm may be used to determine the tightest fitting rectangle around**

the check boundary, which can then be used to determine the angle of it, with that angle being used to align the check properly.);

determining that a video frame of [the live video of] the check satisfies the at least one monitoring criterion and then automatically capturing the video frame **(Col. 9, ll 39-42, Alternatively, a rotating calipers algorithm may be used to determine the tightest fitting rectangle around the check boundary, which can then be used to determine the angle of it, with that angle being used to align the check properly., Col. 6, ll 17-24, The software object may cause the camera 207 to take a picture or capture one or more images of the check 108 being deposited. These images may be captured sequentially, e.g., pursuant to the user 102 flipping the check 108 over after an image of the front of the check 108 has been captured. However, each side of the check 108 may be captured by the camera 207 using similar API calls. The images may be stored in an image file 315.)**;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame **(Col. 6, ll 64-67 The software object on the client 320 may operate by performing one or more of the operations described herein and then transmitting an image file 335 (e.g., based on image file 315 that has been processed) to the server 322, Col. 3, ll 44-51 For example, after endorsing the check 108, the user 102 may use a mobile device 106 that comprises a camera to convert the check 108 into a digital image by taking a picture of the front and/or back of the check 108. The mobile device 106 may be a**

mobile phone (also known as a wireless phone or a cellular phone), a personal digital assistant (PDA), or any handheld computing device, for example.); and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated **(Col. 6, ll 25-45, Once the images of one or both sides of the check 108 are captured by the camera 207, the image file 315 may be operated on by the software object of the client 320. These operations may include any of the following: …, magnetic ink character recognition (MICR), …, number detection, character recognition, and the like. In an implementation, a software object of the client 320 may optically recognize the characters on the MICR line. Col. 6-7, ll 66-1 then transmitting an image file 335 (e.g., based on image file 315 that has been processed) to the server 322 after the user 102 confirms that they do wish to deposit the check 108.)**;

receiving the digital image of the check transmitted by the user's mobile device **(Col. 7, ll 20-22 The server 322 may confirm (e.g., using a process confirmation 340) with the user 102 the transmission, reception, and processing of each side of the check)**;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to

perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward **(Col. 7, ll 30-33, The operations of detecting and verifying information may be performed by the client 320 before the information is transmitted along with the image in the image file 335 to the server 322.)**; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit **(Col. 13, ll 50-54Additionally, to credit funds to the account, the bank may generate an Automated Clearinghouse (ACH) debit entry, substitute check, and/or electronic image. ACH transactions typically include payment instructions to debit and/or credit an account.**

Buentello discloses live video capture of a check for remote deposit, including:

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured **(Col. 4, ll 43-50, The electronic devices may receive the live video and may perform an initial analysis on the quality of the video, the readability of the data contained therein, or the like. For example, the electronic devices may determine whether the account number, amount payable, and the like may be readable such that it may be parsed or otherwise obtained and processed by the financial institution 130 to credit an**

account. Col. 10, ll 20-21 When the financial institution has captured the needed data, the user may be advised);

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer **(Col. 13, ll 35-39 device. One or more programs may implement or utilize the processes described in connection with the presently disclosed subject matter, e.g., through the use of an application programming interface (API), reusable controls , or the like. Col. 1, ll 50-57 A live video of a negotiable instrument may be provided from a user to a financial institution so that an image of the negotiable instrument may be obtained from the live video, processed, and funds associated with the negotiable instrument may be deposited in an account of the user. In an implementation, after endorsing a check, a user may use a video source such as a video camera, a web camera, or a video-enabled phone)**;

One of ordinary skill would have been motivated to combine Prasad and Buentello as the references are in the same field of remote check deposit and live video is useful when users want to deposit more than one check (Buentello Col. 5, ll 34-38).

Claims 9, 18 and 26 are similarly rejected.

Prasad discloses:

7. The method of claim 1, wherein the digital image is a modified version of the captured video frame **(Col. 6, ll 64-67 The software object on the client 320 may operate by performing one or more of the operations described herein and then transmitting**

an image file 335 (e.g., based on image file 315 that has been processed) to the server 322).

Claim 24 is similarly rejected.

8. The method of claim 1, wherein the wireless network is a cellular network **(Col. 3 ll 20)**.

Claims 17, 25 and 30 are similarly rejected.

Buentello discloses:

11. The method of claim 9, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer **(Col. 8, ll 5-27, payor. In an implementation, the financial institution may check that that the resolution of the image meets at least a predetermined threshold, such as 200 dots per inch (dpi), 400 dpi, 500 dpi, etc.**

One of ordinary skill may modify Prasad with Buentello as the options for monitoring and/or determining are limited.

Prasad discloses:

16. The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional

operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera **(Fig. 7, 720, Buentello discloses live video of check. Similar reasoning for combining references applies)**

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

Claim**s 6 and** 23 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention.

Claim 6 recites "the confirming…is performed after the transmitting from the user's device" while claim 1 recites "transmitting…from the user's mobile device and submitting the check; and before the submitting, confirming that the…deposit can go forward". The two claims appear to contradict each other in regard to when the confirming step takes place and thus claim 6 is unclear. Claim 23 is similarly rejected.

Conclusion

This is a **continuation** of applicant's earlier Application No. **18/593856**. All claims are identical to, patentably indistinct from, or have unity of invention with the invention claimed in the earlier application (that is, restriction (including lack of unity) would not be proper) and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application.

Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any nonprovisional extension fee (37 CFR 1.17(a)) pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM E RANKINS whose telephone number is (571)270-3465. The examiner can normally be reached on 9-530 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bennett Sigmond can be reached on 303-297-4411. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM E RANKINS/
Primary Examiner, Art Unit 3694

Notice of References Cited	Application/Control No. 18/966,097	Applicant(s)/Patent Under Reexamination Bueche et al.	
	Examiner WILLIAM E RANKINS	Art Unit 3694	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-10504185-B1	2019-12-10	Buentello; Andre Rene	G06Q40/06	1/1
*	B	US-20210360149-A1	2021-11-18	Mukul; Saumya	G06F3/165	1/1
*	C	US-10380993-B1	2019-08-13	Clauer Salyers; Harmony Jane	H04N23/633	1/1
*	D	US-10402790-B1	2019-09-03	Clark; Christopher Nephi	G06Q20/0425	1/1
*	E	US-10380562-B1	2019-08-13	Prasad; Bharat	G06Q20/10	1/1
	F					
	G					
	H					
	I					
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	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
*	N	CA-3080523-A1	2020-09-25	CA	MUKUL S	G06F3/016
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06Q40/02	08/27/2024	WR
G06Q40/02	01/22/2025	WR

US Classification - Searched*			
Class	Subclass	Date	Examiner
705	35	08/27/2024	WR
705	35	01/22/2025	WR

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E	05/06/2024	WR
Google	08/27/2024	WR
IP.com	8/12/24	WR
PE2E	01/22/2025	WR

/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
G06Q	40/02	08/27/2024	WR
705	35	08/27/2024	WR
G06Q	40/02	01/22/2025	WR
705	35	01/22/2025	WR

/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	

Bibliographic Data

Application No: 18/966,097

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /WILLIAM E RANKINS/ (Examiner's Signature) | (Initials)

Title: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/02/2024	705	3694	US-0691.12c | 32-10527US2
RULE			

APPLICANTS

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CONTINUING DATA

This application is a CON of 18593856 03/01/2024 PAT 12159310

18593856 is a CON of 17161235 01/28/2021ABN

17161235 is a CON of 16712182 12/12/2019 PAT 11341465

16712182 is a CON of 16280455 02/20/2019ABN

16280455 is a CON of 15792966 10/25/2017 PAT 10235660

15792966 is a CON of 15392950 12/28/2016 PAT 9818090

15392950 is a CON of 13922686 06/20/2013 PAT 9569756

13922686 is a CON of 12545127 08/21/2009 PAT 8977571

FOREIGN APPLICATIONS

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12/10/2024

STATE OR COUNTRY

UNITED STATES

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UNITED STATES

FILING FEE RECEIVED

$6,900

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	19	mobile near3 check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:40 AM
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		"8392332" OR "8401962" OR "8422758" OR "8433127" OR "8433647" OR "8452689" OR "8464933" OR "8483473" OR "8531518" OR "8538124" OR "8542921" OR "8548267" OR "8559766" OR "8582862" OR "8611635" OR "8660952" OR "8708227" OR "8725607" OR "8731321" OR "8732081" OR "8751345" OR "8751356" OR "8751379" OR "8768038" OR "8768836" OR "8799147" OR "8818033" OR "8824772" OR "8837806" OR "8843405" OR "8929640" OR "8950033" OR "8977571" OR "8990862" OR "9009071" OR "9036040" OR "9058512" OR "9064284" OR "9129340" OR "9159101" OR "9177197" OR "9177198" OR "9195986" OR "9224136" OR "9235860" OR "9270804" OR "9286514" OR "9311634" OR "9336517" OR "9384409" OR "9390339" OR "9401011" OR "9424569" OR "9569756" OR "9613467" OR "9613469" OR "9619872" OR "9626183" OR					

		"9626662" OR "9674396" OR "9779392" OR "9779452" OR "9785929" OR "9792654" OR "9818090" OR "9824453" OR "9872454" OR "9886642" OR "9898778" OR "9898808" OR "9904848" OR "9946923" OR "RE31692" OR "RE44274").pn.					
L2	0	smart ADJ phone WITH check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:42 AM
L2	0	L1 AND video near3 (frame portion) near3 (unacceptable unsatisfactory inacceptable inadequate reject$3 declin$3)	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:05 PM
L3	0	L1 AND contrast WITH brightness WITH position$3 WITH dimension$3 WITH spacing WITH skewing WITH warping WITH corner WITH edge WITH micr	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:07 PM
L3	86	mobile WITH check ADJ deposit SAME video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:43 AM
L4	0	L1 AND monitor$3 WITH determin$3 WITH provid$3 WITH confirm$3	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:08 PM
L4	70	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU,	OR	ON	ON	2024/05/06 07:43 AM

			SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	29	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:43 AM
L6	41	mobile WITH check ADJ deposit WITH video NOT L1	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:45 AM
L7	3269	still ADJ image WITH live ADJ video	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:47 AM
L8	4464	still ADJ image WITH live ADJ video	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:47 AM
L9	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:48 AM
L10	35	live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:48 AM
L11	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:48 AM
L12	42	live ADJ video AND remote ADJ deposit NOT L11	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:54 AM
L13	9	((US-10956728-B1 OR US-10552810-B1 OR US-10504185-B1 OR US-10402790-B1 OR US-9779392-B1 OR US-8977571-B1 OR US-8688579-B1 OR US-8542921-B1 OR US-7912785-B1).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:39 AM
L14	7	L13 AND align$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:39 AM

L15	9	remote ADJ deposit AND align$4 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:45 AM
L16	29	remote ADJ deposit AND position$3 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:51 AM
L17	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:30 PM
L18	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:31 PM
L19	12	adjust$$ WITH (joumal ledger) near3 entry WITH common	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:31 PM
L20	0	adjust$4 WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:33 PM
L21	0	reconcil$3 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:34 PM
L22	3	adjust$4 WITH (joumal ledger) near3 entry WITH ordinary	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR,	OR	ON	ON	2024/05/07 07:34 PM

			GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L23	0	adjust$4 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:34 PM
L24	0	reconcil$3 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:35 PM
L25	0	adjust$4 WITH (accounting) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:35 PM
L26	0	adjust$5 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:36 PM
L27	521	adjust$5 WITH (journal ledger) near3 entry	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:36 PM
L28	2	adjust$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:36 PM
L29	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD,	OR	ON	ON	2024/05/07 07:37 PM

			DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L30	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:37 PM
L31	2	adjust$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:37 PM
L32	15	adjust$5 WITH (unmatched unreconciled) near3 transaction	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:44 PM
L33	0	reconcili$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:46 PM
L34	0	adjust$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:47 PM
L35	64	reconcil$3 near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:47 PM
L36	46	reconcil$3 near3 transaction WITH	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:47 PM

		known					
L37	131	adjust$5 WITH exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:48 PM
L38	45	adjust$5 near7 exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:48 PM
L39	2	reconcil$3 near3 exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:54 PM
L40	0	adjust$4 near3 exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:55 PM
L41	5	adjust$4 WITH exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:55 PM
L42	15	accounting WITH exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:56 PM
L43	2	exception WITH transaction WITH known WITH (adjust$4 entry)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:16 PM
L44	1	exception WITH transaction WITH known WITH (ledger journal)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:16 PM
L45	20	exception WITH transaction WITH (adjust$5 reconcil$6) WITH (ledger journal)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:17 PM
L46	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:21 PM
L47	10	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH understood	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2024/05/07 09:22 PM

			IBM_TDB)				
L48	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:22 PM
L49	4	reconcil$6 WITH transaction WITH exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:28 PM
L50	0	reconciliation ADJ exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:31 PM
L51	14	transaction ADJ exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:31 PM
L52	285	adjust$4 near3 (entry transaction) near7 known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:33 PM
L53	285	(adjust$4 near3 (entry transaction)) near7 known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:33 PM
L54	69	(adjust$4 near3 (entry transaction)) near7 known WITH transaction	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2024/05/07 09:34 PM

			JPO; DERWENT; IBM_TDB)				
L55	2	(adjust$4 near3 (entry transaction)) near7 known WITH (joumal ledger)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:36 PM
L56	0	reconcil$6 near7 (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:37 PM
L57	0	reconcil$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:37 PM
L58	0	adjust$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:37 PM
L59	3	(generat$3 creat$3) WITH (unmatched mismatched) WITH transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:38 PM
L60	30	reconcil$6 WITH statement WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:40 PM
L61	255	reconcil$6 WITH account WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU,	OR	ON	ON	2024/05/07 09:42 PM

			SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L62	98	reconcil$6 near7 account near7 known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:42 PM
L63	0	reconcil$6 near7 account near7 known AND peoplesoft	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:51 PM
L64	13	reconcil$6 WITH known AND peoplesoft	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:51 PM
L65	1	reconcil$6 WITH known AND peoplebook	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:56 PM
L66	28	reconcil$6 ADJ processing WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:59 PM
L67	40	account ADJ reconcil$6 WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/08 08:45 AM
L68	0	adjust$4 NEAR transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR,	OR	ON	ON	2024/05/08 09:12 AM

			GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L69	0	adjust$4 near3 transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/08 09:15 AM
L70	7	(generat$3 creat$4) near3 transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/08 09:15 AM
L71	23	remote near3 deposit SAME live near3 video SAME (check cheque instrument)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/08/12 05:41 PM
L72	2	remote near3 deposit SAME live near3 video SAME (check cheque instrument) AND @ay<"2010"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/08/12 05:41 PM
L73	570	device WITH camera AND software ADJ abstraction ADJ layer	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/20 01:22 PM
L74	20	device WITH camera AND software ADJ abstraction ADJ layer AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/20 01:22 PM
L75	1	device WITH camera SAME software ADJ abstraction ADJ layer AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/20 01:24 PM
L76	0	remote ADJ deposit WITH video ADJ capture	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 01:50 PM
L77	16	remote ADJ deposit SAME video ADJ capture	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 01:50 PM
L78	0	remote ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27

		AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND 2					03:21 PM
L79	0	remote ADJ deposit AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 03:21 PM
L80	0	remote ADJ deposit AND accept$4 near3 criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 03:22 PM
L81	16	remote ADJ deposit AND (threshold criter$3) WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 03:22 PM
L82	179669	(G06Q40/02).cpc,ipc,ipcr. 705/35.ccls.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/08/27 04:15 PM
L249	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L250	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L251	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L252	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L253	0	adjust$4 WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT;				

			IBM_TDB)				
L254	0	reconcil$3 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L255	4	adjust$4 WITH (journal ledger) near3 entry WITH ordinary	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L256	0	adjust$4 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L257	0	reconcil$3 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L258	0	adjust$4 WITH (accounting) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L259	0	adjust$5 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L260	4	adjust$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2024/09/10 03:22 PM

			JPO; DERWENT; IBM_TDB)				
L261	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L262	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L263	4	adjust$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L264	0	reconcili$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L265	0	adjust$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L266	133	adjust$5 WITH exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L267	2	reconcil$3 near3 exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L268	0	adjust$4 near3 exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L269	5	adjust$4 WITH exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L270	2	exception WITH transaction WITH	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2024/09/10 03:22 PM

		known WITH (adjust$4 entry)	AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L271	1	exception WITH transaction WITH known WITH (ledger journal)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L272	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L273	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L274	4	reconcil$6 WITH transaction WITH exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L275	0	reconciliation ADJ exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L276	2	(adjust$4 near3 (entry transaction)) near7 known WITH (joumal ledger)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L277	0	reconcil$6 near7	(US-PGPUB; USPAT;	OR	ON	ON	2024/09/10

		(unmatched mismatched) ADJ transaction WITH known	USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				03:22 PM
L278	0	reconcil$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L279	0	adjust$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L280	3	(generat$3 creat$3) WITH (unmatched mismatched) WITH transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L281	0	reconcil$6 near7 account near7 known AND peoplesoft	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L282	1	reconcil$6 WITH known AND peoplebook	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L283	0	adjust$4 NEAR transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM

L284	0	adjust$4 near3 transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L285	2	remote near3 deposit SAME live near3 video SAME (check cheque instrument) AND @ay<"2010"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L286	1	device WITH camera SAME software ADJ abstraction ADJ layer AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L287	0	remote ADJ deposit WITH video ADJ capture	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L288	0	remote ADJ deposit AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND 2	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L289	0	remote ADJ deposit AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L290	0	remote ADJ deposit AND accept$4 near3 criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L291	23	mobile near3 check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L292	176	("7519560" OR "7520420" OR "7520422" OR "7536354" OR "7536440" OR "7539646" OR "7540408" OR "7542598" OR "7545529" OR	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM

		"7548641" OR "7566002" OR "7568615" OR "7571848" OR "7577614" OR "7587066" OR "7587363" OR "7590275" OR "7599543" OR "7599888" OR "7602956" OR "7606762" OR "7609873" OR "7619721" OR "7620231" OR "7620604" OR "7630518" OR "7644037" OR "7644043" OR "7647275" OR "7647897" OR "7668363" OR "7672940" OR "7676409" OR "7680732" OR "7680735" OR "7689482" OR "7697776" OR "7698222" OR "7702588" OR "7734545" OR "7743979" OR "7753268" OR "7761358" OR "7766223" OR "7766244" OR "7769650" OR "7778457" OR "7792752" OR "7792753" OR "7793833" OR "7810714" OR "7812986" OR "7818245" OR "7856402" OR "7865425" OR "7873200" OR "7873556" OR "7876949" OR "7885451" OR "7885880" OR "7894094" OR "7896232" OR "7900822" OR "7903863" OR "7904386" OR "7912785" OR "7935441" OR					

		"7949587" OR "7950698" OR "7953441" OR "7962411" OR "7970677" OR "7974869" OR "7974899" OR "7978900" OR "7987231" OR "7996312" OR "7996314" OR "7996315" OR "7996316" OR "8000514" OR "8001051" OR "8009931" OR "8045784" OR "8046301" OR "8051453" OR "8060442" OR "8064729" OR "8116533" OR "8118654" OR "8131636" OR "8203640" OR "8204293" OR "8235284" OR "8275715" OR "8320657" OR "8341077" OR "8351678" OR "8358826" OR "8369650" OR "8374963" OR "8391599" OR "8392332" OR "8401962" OR "8422758" OR "8433127" OR "8433647" OR "8452689" OR "8464933" OR "8483473" OR "8531518" OR "8538124" OR "8542921" OR "8548267" OR "8559766" OR "8582862" OR "8611635" OR "8660952" OR "8708227" OR "8725607" OR "8731321" OR "8732081" OR "8751345" OR "8751356" OR "8751379" OR					

		"8768038" OR "8768836" OR "8799147" OR "8818033" OR "8824772" OR "8837806" OR "8843405" OR "8929640" OR "8950033" OR "8977571" OR "8990862" OR "9009071" OR "9036040" OR "9058512" OR "9064284" OR "9129340" OR "9159101" OR "9177197" OR "9177198" OR "9195986" OR "9224136" OR "9235860" OR "9270804" OR "9286514" OR "9311634" OR "9336517" OR "9384409" OR "9390339" OR "9401011" OR "9424569" OR "9569756" OR "9613467" OR "9613469" OR "9619872" OR "9626183" OR "9626662" OR "9674396" OR "9779392" OR "9779452" OR "9785929" OR "9792654" OR "9818090" OR "9824453" OR "9872454" OR "9886642" OR "9898778" OR "9898808" OR "9904848" OR "9946923" OR "RE31692" OR "RE44274").pn.					
L293	0	smart ADJ phone WITH check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2025/01/22 11:03 AM

			JPO; DERWENT; IBM_TDB)				
L294	0	L1 AND video near3 (frame portion) near3 (unacceptable unsatisfactory inacceptable inadequate reject$3 declin$3)	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L295	105	mobile WITH check ADJ deposit SAME video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L296	0	L1 AND contrast WITH brightness WITH position$3 WITH dimension$3 WITH spacing WITH skewing WITH warping WITH corner WITH edge WITH micr	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L297	74	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L298	0	L1 AND monitor$3 WITH determin$3 WITH provid$3 WITH confirm$3	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L299	30	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L300	44	mobile WITH check ADJ deposit WITH video NOT L1	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L301	3636	still ADJ image WITH live ADJ video	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L302	4742	still ADJ image WITH live ADJ video	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM

L303	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L304	40	live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L305	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L306	47	live ADJ video AND remote ADJ deposit NOT L11	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L307	9	((US-10956728-B1 OR US-10552810-B1 OR US-10504185-B1 OR US-10402790-B1 OR US-9779392-B1 OR US-8977571-B1 OR US-8688579-B1 OR US-8542921-B1 OR US-7912785-B1).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L308	7	L13 AND align$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L309	13	remote ADJ deposit AND align$4 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L310	33	remote ADJ deposit AND position$3 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp

N1	32863	(G06Q40/02).cpc,ipc,ipcr. 705/35.ccls.	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:15 PM
N2	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N3	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N4	23	L82 AND L62	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N5	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N6	67	L82 AND L27	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N7	0	L82 AND L18	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N8	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N17	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N18	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N19	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N20	0	L82 AND L18	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N21	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N22	33312	(G06Q40/02).cpc,ipc,ipcr. 705/35.ccls.	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N23	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N24	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N25	23	L82 AND L62	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N26	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N27	67	L82 AND L27	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N28	0	L82 AND L18	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N29	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N30	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N31	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N32	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N33	0	L82 AND L18	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM

N34	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/966,097	Filing Date 12/02/2024	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	06/30/2025	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0		x $200 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $600 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/NICOLE L NICHOLSON/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael Patrick Bueche JR. Art Unit: 3694

Appln. No.: 18/966,097 Examiner: William E Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

AMENDMENT AFTER FINAL REJECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the final Office Action of January 27, 2025, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 12 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is

configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

Claims 2-6 (Cancelled).

7. (Original) The method of claim 1, wherein the digital image is a modified version of the captured video frame.

8. (Original) The method of claim 1, wherein the wireless network is a cellular network.

9. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app

associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the

check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

10. (Cancelled).

11. (Original) The method of claim 9, wherein one or more of one or more computers, remote from the user’s mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

Claims 12-15 (Cancelled).

16. (Original) The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

17. (Original) The method of claim 9, wherein the wireless network is a cellular network.

18. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

Claims 19-23 (Cancelled).

24. (Original) The method of claim 18, wherein the digital image is a modified version of the captured video frame.

25. (Original) The method of claim 18, wherein the wireless network is a cellular network.

26. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the

user’s mobile device or is based on the digital image transmitted by the user’s mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

Claims 27-29 (Cancelled).

30. (Original) The method of claim 26, wherein the wireless network is a cellular network.

REMARKS

Reconsideration of this application, as amended, is respectfully requested in view of the following remarks.

By this amendment, without acceding to the rejections, claims 6 and 23 have been cancelled without prejudice or disclaimer. Accordingly, claims 1, 7-9, 11, 16-18, 24-26, and 30 are pending.

In the Office Action, claims 1, 7-9, 11, 16-18, 24-26, and 30 were rejected under 35 U.S.C. § 103 over Prasad et al. (US 10,380,562) (hereinafter "Prasad") in view of Buentello (US 10,504,185); and claims 6 and 23 were rejected under § 112(b) or § 112 (pre-AIA), second paragraph, as being indefinite.

Rejection under § 112

The cancellation of claims 6 and 23 moots the rejection under § 112(b) or § 112 (pre-AIA), second paragraph. Accordingly, the rejection under § 112(b) or § 112 (pre-AIA), second paragraph, should be withdrawn.

Rejection under § 103

Withdrawal of the rejections under § 103 is respectfully requested because Prasad is not prior art for the following reasons[1]:

(1) Prasad is not available as prior art under § 102(a)(1); and

(2) with respect to § 102(a)(2), Prasad is disqualified as prior art under § 102(b)(2)(C).

Prasad is Not Available as Prior Art under § 102(a)(1)

Prasad is not available as prior art under § 102(a)(1) because Prasad issued after the effective filing date of the present application. Prasad issued on August 13, 2019, and the effective filing date of the present application is August 21, 2009. Accordingly, Prasad is not available as prior art under § 102(a)(1).

[1] Applicant notes that Prasad is also not prior art under pre-AIA § 103(c) based on common ownership for reasons comparable to those provided herein with respect to common ownership under § 102(b)(2)(C). Accordingly, regardless of whether AIA or pre-AIA §§ 102, 103 apply to the present application, Prasad is not prior art.

Prasad is Disqualified as Prior Art with respect to § 102(a)(2)

With respect to § 102(a)(2), Prasad is disqualified as prior art under § 102(b)(2)(C). Applicant has submitted herewith a statement concerning common ownership of Prasad and the present application in accordance with M.P.E.P. § 717.02(a)(I)(B). As set forth in the M.P.E.P., such a "statement alone is sufficient to invoke the prior art exception under 35 U.S.C. 102(b)(2)(C). Once common ownership is established, the subject matter disclosed in [the commonly owned reference] may not be used in a rejection under 35 U.S.C. 102 or 35 U.S.C. 103." *M.P.E.P.* § 717.02(a)(I)(B).

Accordingly, Prasad is disqualified as prior art under § 102(b)(2)(C).

Because each of the rejections under § 103 relies on Prasad, they should now be withdrawn.

Entitled to Consideration After Final

The M.P.E.P. explains that this paper is entitled to consideration after final rejection, and further explains that because the only rejection of claims 1, 7-9, 11, 16-18, 24-26, and 30 is an obviousness rejection which has been obviated by the disqualification of Prasad as prior art, "the Office should indicate that the claims are allowable, or prosecution should be reopened":

> Applicant's submissions concerning the prior art exception under 35 U.S.C. 102(b)(2)(C) or prior art disqualification under pre-AIA 35 U.S.C. 103(c) are entitled to being considered even after a final rejection has been made. If a final rejection of certain claims is obviated by a timely reply based on a proper claim of entitlement to the prior art exception or disqualification, then the Office should acknowledge the reply by modifying the status of the claims. For example, if the only rejection in the final rejection is obviated by a submission demonstrating entitlement to except or exclude prior art in the after-final reply, the Office should indicate that the claims are allowable, or prosecution should be reopened should the claims be considered unpatentable in view of newly applied prior art.

M.P.E.P. § 714.12 (emphasis added).

Concluding remarks

Should the Examiner believe that any further action is necessary to place this application in better form for allowance, the Examiner is invited to contact Applicant's representative at the telephone number listed below.

The absence of arguments addressing specific allegations in the outstanding Office Action is not intended to be an admission of the accuracy or appropriateness of such allegations.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c) any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: June 30, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

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Reg. No. 43,097

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Atty. Docket No. US-0691.12c

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael Patrick Bueche JR. Art Unit: 3694

Appln. No.: 18/966,097 Examiner: William E Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

STATEMENT UNDER 35 U.S.C. § 102(b)(2)(C)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In accordance with M.P.E.P. § 717.02(a)(I)(B), Applicant hereby states that the present application and U.S. Pat. Appln. No. 12/195,723 issued as U.S. Pat. No. 10,380,562 were, not later than the effective filing date of the claimed invention in the present application, owned by or subject to an obligation of assignment to United Services Automobile Association (USAA).

Respectfully submitted,

Date: June 30, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

Stephen T. Schreiner
Reg. No. 43,097

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UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**06/30/2025 11:29:31 PM Z ET**	**US-0691.12c |32-10527US02**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	71159010	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	12/02/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E20256TN31125704**	**Christopher Abidin**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
504184	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1253	EXTENSION FOR RESPONSE WITHIN THIRD MONTH, EXCEPT PROVISIONAL APPLICATIONS	1590.00	1	1590.00
			TOTAL AMOUNT:	**$1,590.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael Patrick Bueche JR. Art Unit: 3694

Appln. No.: 18/966,097 Examiner: William E Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

AMENDMENT AFTER FINAL REJECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the final Office Action of January 27, 2025, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 12 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is

configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

Claims 2-6 (Cancelled).

7. (Original) The method of claim 1, wherein the digital image is a modified version of the captured video frame.

8. (Original) The method of claim 1, wherein the wireless network is a cellular network.

9. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app

associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the

check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

10. (Cancelled).

11. (Original) The method of claim 9, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

Claims 12-15 (Cancelled).

16. (Original) The method of claim 11, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

17. (Original) The method of claim 9, wherein the wireless network is a cellular network.

18. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

Claims 19-23 (Cancelled).

24. (Original) The method of claim 18, wherein the digital image is a modified version of the captured video frame.

25. (Original) The method of claim 18, wherein the wireless network is a cellular network.

26. (Original) A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the

user's mobile device or is based on the digital image transmitted by the user's mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

Claims 27-29 (Cancelled).

30. (Original) The method of claim 26, wherein the wireless network is a cellular network.

REMARKS

Reconsideration of this application, as amended, is respectfully requested in view of the following remarks.

By this amendment, without acceding to the rejections, claims 6 and 23 have been cancelled without prejudice or disclaimer. Accordingly, claims 1, 7-9, 11, 16-18, 24-26, and 30 are pending.

In the Office Action, claims 1, 7-9, 11, 16-18, 24-26, and 30 were rejected under 35 U.S.C. § 103 over Prasad et al. (US 10,380,562) (hereinafter "Prasad") in view of Buentello (US 10,504,185); and claims 6 and 23 were rejected under § 112(b) or § 112 (pre-AIA), second paragraph, as being indefinite.

Rejection under § 112

The cancellation of claims 6 and 23 moots the rejection under § 112(b) or § 112 (pre-AIA), second paragraph. Accordingly, the rejection under § 112(b) or § 112 (pre-AIA), second paragraph, should be withdrawn.

Rejection under § 103

Withdrawal of the rejections under § 103 is respectfully requested because Prasad is not prior art for the following reasons[1]:

(1) Prasad is not available as prior art under § 102(a)(1); and

(2) with respect to § 102(a)(2), Prasad is disqualified as prior art under § 102(b)(2)(C).

Prasad is Not Available as Prior Art under § 102(a)(1)

Prasad is not available as prior art under § 102(a)(1) because Prasad issued after the effective filing date of the present application. Prasad issued on August 13, 2019, and the effective filing date of the present application is August 21, 2009. Accordingly, Prasad is not available as prior art under § 102(a)(1).

[1] Applicant notes that Prasad is also not prior art under pre-AIA § 103(c) based on common ownership for reasons comparable to those provided herein with respect to common ownership under § 102(b)(2)(C). Accordingly, regardless of whether AIA or pre-AIA §§ 102, 103 apply to the present application, Prasad is not prior art.

Prasad is Disqualified as Prior Art with respect to § 102(a)(2)

With respect to § 102(a)(2), Prasad is disqualified as prior art under § 102(b)(2)(C). Applicant has submitted herewith a statement concerning common ownership of Prasad and the present application in accordance with M.P.E.P. § 717.02(a)(I)(B). As set forth in the M.P.E.P., such a "statement alone is sufficient to invoke the prior art exception under 35 U.S.C. 102(b)(2)(C). Once common ownership is established, the subject matter disclosed in [the commonly owned reference] may not be used in a rejection under 35 U.S.C. 102 or 35 U.S.C. 103." *M.P.E.P.* § 717.02(a)(I)(B).

Accordingly, Prasad is disqualified as prior art under § 102(b)(2)(C).

Because each of the rejections under § 103 relies on Prasad, they should now be withdrawn.

Entitled to Consideration After Final

The M.P.E.P. explains that this paper is entitled to consideration after final rejection, and further explains that because the only rejection of claims 1, 7-9, 11, 16-18, 24-26, and 30 is an obviousness rejection which has been obviated by the disqualification of Prasad as prior art, "the Office should indicate that the claims are allowable, or prosecution should be reopened":

> Applicant's submissions concerning the prior art exception under 35 U.S.C. 102(b)(2)(C) or prior art disqualification under pre-AIA 35 U.S.C. 103(c) are entitled to being considered even after a final rejection has been made. If a final rejection of certain claims is obviated by a timely reply based on a proper claim of entitlement to the prior art exception or disqualification, then the Office should acknowledge the reply by modifying the status of the claims. For example, if the only rejection in the final rejection is obviated by a submission demonstrating entitlement to except or exclude prior art in the after-final reply, the Office should indicate that the claims are allowable, or prosecution should be reopened should the claims be considered unpatentable in view of newly applied prior art.

M.P.E.P. § 714.12 (emphasis added).

Concluding remarks

Should the Examiner believe that any further action is necessary to place this application in better form for allowance, the Examiner is invited to contact Applicant's representative at the telephone number listed below.

The absence of arguments addressing specific allegations in the outstanding Office Action is not intended to be an admission of the accuracy or appropriateness of such allegations.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c) any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: June 30, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

Stephen T. Schreiner
Reg. No. 43,097

Carmichael IP, PLLC
Customer No. 135533

chris@carmichaelip.com
703-646-9251

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**06/30/2025 11:29:31 PM Z ET**	**US-0691.12c |32-10527US02**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	71159010	FILING DATE	12/02/2024
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 4

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
2025-06-27_US-0691.12c_Amd-FOA.pdf		14	-	140 KB
2025-06-27_US-0691.12c_Amd-FOA-A.NE.pdf	(1-1)	1	Response After Final Action	72 KB
2025-06-27_US-0691.12c_Amd-FOA-CLM.pdf	(2-11)	10	Claims	94 KB
2025-06-27_US-0691.12c_Amd-FOA-REM.pdf	(12-14)	3	Applicant Arguments/Remarks Made in an Amendment	70 KB
2025-06-27_US-0691.12c_Statement-under-		1	Miscellaneous Incoming Letter	57 KB

102b2C.pdf

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2025-06-27_US-0691.12c_Amd-FOA.pdf	9C79E6A966457252F93F4D5AA61F8155818D5E051F2B0A73299971D9482E0C36A0F1E74F1BB729D10A706C2997FF976F7B29D1C65943E477AA5413A9AF57BFDD
2025-06-27_US-0691.12c_Amd-FOA-A.NE.pdf	A81FD37939189FF372FA5D04836F31E18E95BBEE7F89F3071922FBB252267C0C3741D69E779BF4E4085E13BBF6494D7311367F588F69D43CEE03201E67ABBAAF
2025-06-27_US-0691.12c_Amd-FOA-CLM.pdf	459C5F399A4627A645F3E79A29FD495CC331875BAB8AA09500016F11BE24D549567EC31642EE57C2575D3136F9DFF6D31EF3370854B4447A634C8924E8735065
2025-06-27_US-0691.12c_Amd-FOA-REM.pdf	218179E5E71E08FE2A4DA4410C240CF42506A65FF46A4CA110B1935A00B2F382A57DBAF5CF19D7E40ACD151172E2BA3FB93F2D6EAB9844152926B2501605DD21
2025-06-27_US-0691.12c_Statement-under-102b2C.pdf	19C67053BE2DF0B6FE39C43089C45FA9BC9A9B37CA80C12AB1FE352BB0E98AB35FE211BAC66FA8D2905C8D120DFCE7777A90359D27EF9BE737A1FAC1900751A4

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

197306 7590 07/17/2025

Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

EXAMINER	
RANKINS, WILLIAM E	
ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 07/17/2025

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 32-10527US02	3179

TITLE OF INVENTION: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1290	$0.00	$0.00	$1290	10/17/2025

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PTOL-85 (Rev. 11/23)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

197306 7590 07/17/2025
Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 32-10527US02	3179

TITLE OF INVENTION: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1290	$0.00	$0.00	$1290	10/17/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
RANKINS, WILLIAM E	3694	705-035000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

FIFTH THIRD EX1033
Page 483 of 959

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 32-10527US02	3179

197306 7590 07/17/2025

Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

EXAMINER	
RANKINS, WILLIAM E	

ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 07/17/2025

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 11/23)

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	**Application No.** 18/966,097	**Applicant(s)** Bueche et al.	
	Examiner WILLIAM E RANKINS	**Art Unit** 3694	**AIA (First Inventor to File) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 6/30/25.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are See Continuation Sheet . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/WILLIAM E RANKINS/
Primary Examiner, Art Unit 3694

Continuation of 3. The allowed claim(s) is/are: 1,7-9,11,16-18,24-26 and 30

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

Status of Claims

Claims 6 and 23 are canceled. Claims 1, 7-9, 11, 16-18, 24-26 and 30 are pending.

Response to Arguments

Applicant's arguments regarding the 103 rejections of the claims have been considered and are persuasive. Prasad does not qualify as prior art under 102(b)(2)(c).

The 112 rejection is withdrawn in view of the canceled claims.

Allowable Subject Matter

Claims 1, 7-9, 11, 16-18, 24-26 and 30 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art does not disclose, either alone or in combination, the elements of the independent claims.

The prior art does not disclose, either alone or in combination, the elements of the independent claims including a remote deposit application for a mobile device capturing a live video of a check, presenting an alignment guide to the user, monitoring acceptable criteria for the user of the video/image of the check, transmitting the image for processing, confirming the deposit can go forward after OCR processes further confirm the image and financial information of the check are acceptable, processing the image with OCR and further verifying acceptability of the image, processing the deposit and updating an account balance of the user. Although each element of the claims may exist in the prior art the claim elements as a whole are not found in the prior art in such a manner that would not constitute improper hindsight upon the part of the Office.

The closest prior art is:

Buentello - Systems And Methods For Live Video Financial Deposit – 10,504,185

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM E RANKINS whose telephone number is (571)270-3465. The examiner can normally be reached on 9-530 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bennett Sigmond can be reached on 303-297-4411. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM E RANKINS/
Primary Examiner, Art Unit 3694

Notice of References Cited	Application/Control No. 18/966,097	Applicant(s)/Patent Under Reexamination Bueche et al.	
	Examiner WILLIAM E RANKINS	Art Unit 3694	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-10504185-B1	2019-12-10	Buentello; Andre Rene	G06Q40/06	1/1
*	B	US-20210360149-A1	2021-11-18	Mukul; Saumya	G06F3/165	1/1
*	C	US-10380993-B1	2019-08-13	Clauer Salyers; Harmony Jane	H04N23/633	1/1
*	D	US-10402790-B1	2019-09-03	Clark; Christopher Nephi	G06Q20/0425	1/1
*	E	US-10380562-B1	2019-08-13	Prasad; Bharat	G06Q20/10	1/1
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
*	N	CA-3080523-A1	2020-09-25	CA	MUKUL S	G06F3/016
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	**Art Unit**
	WILLIAM E RANKINS	3694

CPC							
Symbol						**Type**	**Version**
G06Q	/	20	/	042		F	2013-01-01
G06Q	/	20	/	3223		I	2013-01-01
G06Q	/	40	/	02		I	2013-01-01
G06V	/	30	/	2253		I	2022-01-01
G06Q	/	20	/	108		I	2013-01-01
H04N	/	7	/	183		I	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	14 July 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20250714

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	**Art Unit**
	WILLIAM E RANKINS	3694

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06Q	/	20	/	42	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
705	35

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 12	
/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694 (Primary Examiner)	14 July 2025 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

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	18/966,097	Bueche et al.
	Examiner	**Art Unit**
	WILLIAM E RANKINS	3694

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		10		19		28								
	2	5	11		20		29								
	3		12		21	12	30								
	4		13		22										
	5		14		23										
	6		15	9	24										
2	7	6	16	10	25										
3	8	7	17	11	26										
4	9	8	18		27										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	12	
/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	14 July 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office Part of Paper No.: 20250714

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	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06Q40/02	08/27/2024	WR
G06Q40/02	01/22/2025	WR

US Classification - Searched*			
Class	Subclass	Date	Examiner
705	35	08/27/2024	WR
705	35	01/22/2025	WR

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E	05/06/2024	WR
Google	08/27/2024	WR
IP.com	8/12/24	WR
PE2E	01/22/2025	WR

/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
G06Q	40/02	08/27/2024	WR
705	35	08/27/2024	WR
G06Q	40/02	01/22/2025	WR
705	35	01/22/2025	WR

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-25)
Approved for use through 11/30/2027. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	14	Sony Ericsson K800i - Product Overview, 2006, 2 pgs.	☐
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	Attorney Docket Number	US-0691.12c | 32-10527US2

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	39	USAA's Objections to Magistrate Judge Payne's Claim Construction Memorandum Opinion and Order, filed in Civil Action No. 2:18-CV-245, dated June 27, 2019, 6 pgs.	☐
	40	USAA's Objections To Magistrate Judge Payne's Claim Construction Memorandum Opinion and Order, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-366, dated August 12, 2019, 10 pgs.	☐
	41	USAA's Opening Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 17, 2019, 670 pgs.	☐
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	43	USAA's Reply Claim Construction Brief, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated May 2, 2019, 227 pgs.	☐
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	45	USAA's Reply to Claim Construction Brief, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated May 2, 2019, 15 pgs.	☐
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EXAMINER SIGNATURE

Examiner Signature	/WILLIAM E RANKINS/	Date Considered	07/14/2025

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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Art Unit	
Examiner Name	
Attorney Docket Number	US-0691.12c | 32-10527US2

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

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A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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L1	176	("7519560" OR "7520420" OR "7520422" OR "7536354" OR "7536440" OR "7539646" OR "7540408" OR "7542598" OR "7545529" OR "7548641" OR "7566002" OR "7568615" OR "7571848" OR "7577614" OR "7587066" OR "7587363" OR "7590275" OR "7599543" OR "7599888" OR "7602956" OR "7606762" OR "7609873" OR "7619721" OR "7620231" OR "7620604" OR "7630518" OR "7644037" OR "7644043" OR "7647275" OR "7647897" OR "7668363" OR "7672940" OR "7676409" OR "7680732" OR "7680735" OR "7689482" OR "7697776" OR "7698222" OR "7702588" OR "7734545" OR "7743979" OR "7753268" OR "7761358" OR "7766223" OR	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 02:58 PM

		"7766244" OR "7769650" OR "7778457" OR "7792752" OR "7792753" OR "7793833" OR "7810714" OR "7812986" OR "7818245" OR "7856402" OR "7865425" OR "7873200" OR "7873556" OR "7876949" OR "7885451" OR "7885880" OR "7894094" OR "7896232" OR "7900822" OR "7903863" OR "7904386" OR "7912785" OR "7935441" OR "7949587" OR "7950698" OR "7953441" OR "7962411" OR "7970677" OR "7974869" OR "7974899" OR "7978900" OR "7987231" OR "7996312" OR "7996314" OR "7996315" OR "7996316" OR "8000514" OR "8001051" OR "8009931" OR "8045784" OR "8046301" OR "8051453" OR "8060442" OR "8064729" OR "8116533" OR "8118654" OR "8131636" OR "8203640" OR "8204293" OR "8235284" OR "8275715" OR "8320657" OR "8341077" OR "8351678" OR "8358826" OR "8369650" OR "8374963" OR "8391599" OR					

		"8392332" OR "8401962" OR "8422758" OR "8433127" OR "8433647" OR "8452689" OR "8464933" OR "8483473" OR "8531518" OR "8538124" OR "8542921" OR "8548267" OR "8559766" OR "8582862" OR "8611635" OR "8660952" OR "8708227" OR "8725607" OR "8731321" OR "8732081" OR "8751345" OR "8751356" OR "8751379" OR "8768038" OR "8768836" OR "8799147" OR "8818033" OR "8824772" OR "8837806" OR "8843405" OR "8929640" OR "8950033" OR "8977571" OR "8990862" OR "9009071" OR "9036040" OR "9058512" OR "9064284" OR "9129340" OR "9159101" OR "9177197" OR "9177198" OR "9195986" OR "9224136" OR "9235860" OR "9270804" OR "9286514" OR "9311634" OR "9336517" OR "9384409" OR "9390339" OR "9401011" OR "9424569" OR "9569756" OR "9613467" OR "9613469" OR "9619872" OR "9626183" OR					

		"9626662" OR "9674396" OR "9779392" OR "9779452" OR "9785929" OR "9792654" OR "9818090" OR "9824453" OR "9872454" OR "9886642" OR "9898778" OR "9898808" OR "9904848" OR "9946923" OR "RE31692" OR "RE44274").pn.					
L2	0	smart ADJ phone WITH check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:42 AM
L2	0	L1 AND video near3 (frame portion) near3 (unacceptable unsatisfactory inacceptable inadequate reject$3 declin$3)	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:05 PM
L3	86	mobile WITH check ADJ deposit SAME video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:43 AM
L3	0	L1 AND contrast WITH brightness WITH position$3 WITH dimension$3 WITH spacing WITH skewing WITH warping WITH corner WITH edge WITH micr	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:07 PM
L4	0	L1 AND monitor$3 WITH determin$3 WITH provid$3 WITH confirm$3	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:08 PM
L4	70	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU,	OR	ON	ON	2024/05/06 07:43 AM

			SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L5	29	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:43 AM
L6	41	mobile WITH check ADJ deposit WITH video NOT L1	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:45 AM
L7	3269	still ADJ image WITH live ADJ video	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:47 AM
L8	4464	still ADJ image WITH live ADJ video	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:47 AM
L9	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:48 AM
L10	35	live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:48 AM
L11	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 07:48 AM
L12	42	live ADJ video AND remote ADJ deposit NOT L11	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/06 07:54 AM
L13	9	((US-10956728-B1 OR US-10552810-B1 OR US-10504185-B1 OR US-10402790-B1 OR US-9779392-B1 OR US-8977571-B1 OR US-8688579-B1 OR US-8542921-B1 OR US-7912785-B1).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:39 AM
L14	7	L13 AND align$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:39 AM

L15	9	remote ADJ deposit AND align$4 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:45 AM
L16	29	remote ADJ deposit AND position$3 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/06 10:51 AM
L17	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:30 PM
L18	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:31 PM
L19	12	adjust$$ WITH (joumal ledger) near3 entry WITH common	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:31 PM
L20	0	adjust$4 WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:33 PM
L21	0	reconcil$3 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:34 PM
L22	3	adjust$4 WITH (joumal ledger) near3 entry WITH ordinary	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR,	OR	ON	ON	2024/05/07 07:34 PM

			GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L23	0	adjust$4 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:34 PM
L24	0	reconcil$3 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:35 PM
L25	0	adjust$4 WITH (accounting) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:35 PM
L26	0	adjust$5 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:36 PM
L27	521	adjust$5 WITH (journal ledger) near3 entry	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:36 PM
L28	2	adjust$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:36 PM
L29	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD,	OR	ON	ON	2024/05/07 07:37 PM

			DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L30	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:37 PM
L31	2	adjust$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:37 PM
L32	15	adjust$5 WITH (unmatched unreconciled) near3 transaction	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:44 PM
L33	0	reconcili$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:46 PM
L34	0	adjust$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:47 PM
L35	64	reconcil$3 near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 07:47 PM
L36	46	reconcil$3 near3 transaction WITH	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:47 PM

		known					
L37	131	adjust$5 WITH exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:48 PM
L38	45	adjust$5 near7 exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:48 PM
L39	2	reconcil$3 near3 exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:54 PM
L40	0	adjust$4 near3 exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:55 PM
L41	5	adjust$4 WITH exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:55 PM
L42	15	accounting WITH exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/05/07 07:56 PM
L43	2	exception WITH transaction WITH known WITH (adjust$4 entry)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:16 PM
L44	1	exception WITH transaction WITH known WITH (ledger journal)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:16 PM
L45	20	exception WITH transaction WITH (adjust$5 reconcil$6) WITH (ledger journal)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:17 PM
L46	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:21 PM
L47	10	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH understood	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2024/05/07 09:22 PM

			IBM_TDB)				
L48	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:22 PM
L49	4	reconcil$6 WITH transaction WITH exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:28 PM
L50	0	reconciliation ADJ exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:31 PM
L51	14	transaction ADJ exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:31 PM
L52	285	adjust$4 near3 (entry transaction) near7 known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:33 PM
L53	285	(adjust$4 near3 (entry transaction)) near7 known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:33 PM
L54	69	(adjust$4 near3 (entry transaction)) near7 known WITH transaction	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2024/05/07 09:34 PM

			JPO; DERWENT; IBM_TDB)				
L55	2	(adjust$4 near3 (entry transaction)) near7 known WITH (joumal ledger)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:36 PM
L56	0	reconcil$6 near7 (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:37 PM
L57	0	reconcil$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:37 PM
L58	0	adjust$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:37 PM
L59	3	(generat$3 creat$3) WITH (unmatched mismatched) WITH transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:38 PM
L60	30	reconcil$6 WITH statement WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:40 PM
L61	255	reconcil$6 WITH account WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU,	OR	ON	ON	2024/05/07 09:42 PM

			SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L62	98	reconcil$6 near7 account near7 known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:42 PM
L63	0	reconcil$6 near7 account near7 known AND peoplesoft	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:51 PM
L64	13	reconcil$6 WITH known AND peoplesoft	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:51 PM
L65	1	reconcil$6 WITH known AND peoplebook	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:56 PM
L66	28	reconcil$6 ADJ processing WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/07 09:59 PM
L67	40	account ADJ reconcil$6 WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/08 08:45 AM
L68	0	adjust$4 NEAR transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR,	OR	ON	ON	2024/05/08 09:12 AM

			GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L69	0	adjust$4 near3 transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/08 09:15 AM
L70	7	(generat$3 creat$4) near3 transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/08 09:15 AM
L71	23	remote near3 deposit SAME live near3 video SAME (check cheque instrument)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/08/12 05:41 PM
L72	2	remote near3 deposit SAME live near3 video SAME (check cheque instrument) AND @ay<"2010"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/08/12 05:41 PM
L73	570	device WITH camera AND software ADJ abstraction ADJ layer	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/20 01:22 PM
L74	20	device WITH camera AND software ADJ abstraction ADJ layer AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/20 01:22 PM
L75	1	device WITH camera SAME software ADJ abstraction ADJ layer AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/20 01:24 PM
L76	0	remote ADJ deposit WITH video ADJ capture	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 01:50 PM
L77	16	remote ADJ deposit SAME video ADJ capture	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 01:50 PM
L78	0	remote ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27

		AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND 2					03:21 PM
L79	0	remote ADJ deposit AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 03:21 PM
L80	0	remote ADJ deposit AND accept$4 near3 criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 03:22 PM
L81	16	remote ADJ deposit AND (threshold criter$3) WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 03:22 PM
L82	179669	(G06Q40/02).cpc,ipc,ipcr. 705/35.ccls.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/08/27 04:15 PM
L249	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L250	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L251	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L252	0	adjust$$ WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L253	0	adjust$4 WITH (joumal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT;				

			IBM_TDB)				
L254	0	reconcil$3 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L255	4	adjust$4 WITH (journal ledger) near3 entry WITH ordinary	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L256	0	adjust$4 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L257	0	reconcil$3 WITH (journal ledger) near3 entry WITH skill	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L258	0	adjust$4 WITH (accounting) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L259	0	adjust$5 WITH (journal ledger) near3 entry WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L260	4	adjust$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2024/09/10 03:22 PM

			JPO; DERWENT; IBM_TDB)				
L261	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$3	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L262	0	reconcil$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L263	4	adjust$5 WITH (journal ledger) near3 entry WITH underst$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L264	0	reconcili$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L265	0	adjust$5 WITH (unmatched unreconciled) near3 transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L266	133	adjust$5 WITH exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L267	2	reconcil$3 near3 exception WITH known	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L268	0	adjust$4 near3 exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L269	5	adjust$4 WITH exception WITH known WITH account	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L270	2	exception WITH transaction WITH	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2024/09/10 03:22 PM

		known WITH (adjust$4 entry)	AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L271	1	exception WITH transaction WITH known WITH (ledger journal)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L272	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L273	4	(exception mismatched unmatched unreconciled) WITH transaction WITH (adjust$5 reconcil$6) WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L274	4	reconcil$6 WITH transaction WITH exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L275	0	reconciliation ADJ exception WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L276	2	(adjust$4 near3 (entry transaction)) near7 known WITH (joumal ledger)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L277	0	reconcil$6 near7	(US-PGPUB; USPAT;	OR	ON	ON	2024/09/10

		(unmatched mismatched) ADJ transaction WITH known	USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				03:22 PM
L278	0	reconcil$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L279	0	adjust$6 WITH (unmatched mismatched) ADJ transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L280	3	(generat$3 creat$3) WITH (unmatched mismatched) WITH transaction WITH known	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L281	0	reconcil$6 near7 account near7 known AND peoplesoft	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L282	1	reconcil$6 WITH known AND peoplebook	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L283	0	adjust$4 NEAR transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM

L284	0	adjust$4 near3 transaction WITH reconcil$3 WITH exception	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L285	2	remote near3 deposit SAME live near3 video SAME (check cheque instrument) AND @ay<"2010"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/09/10 03:22 PM
L286	1	device WITH camera SAME software ADJ abstraction ADJ layer AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L287	0	remote ADJ deposit WITH video ADJ capture	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L288	0	remote ADJ deposit AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND 2	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L289	0	remote ADJ deposit AND accept$4 WITH criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L290	0	remote ADJ deposit AND accept$4 near3 criter$3 WITH (bank financial ADJ institution) AND @ay<"2009"	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
L291	23	mobile near3 check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L292	176	("7519560" OR "7520420" OR "7520422" OR "7536354" OR "7536440" OR "7539646" OR "7540408" OR "7542598" OR "7545529" OR	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM

		"7548641" OR "7566002" OR "7568615" OR "7571848" OR "7577614" OR "7587066" OR "7587363" OR "7590275" OR "7599543" OR "7599888" OR "7602956" OR "7606762" OR "7609873" OR "7619721" OR "7620231" OR "7620604" OR "7630518" OR "7644037" OR "7644043" OR "7647275" OR "7647897" OR "7668363" OR "7672940" OR "7676409" OR "7680732" OR "7680735" OR "7689482" OR "7697776" OR "7698222" OR "7702588" OR "7734545" OR "7743979" OR "7753268" OR "7761358" OR "7766223" OR "7766244" OR "7769650" OR "7778457" OR "7792752" OR "7792753" OR "7793833" OR "7810714" OR "7812986" OR "7818245" OR "7856402" OR "7865425" OR "7873200" OR "7873556" OR "7876949" OR "7885451" OR "7885880" OR "7894094" OR "7896232" OR "7900822" OR "7903863" OR "7904386" OR "7912785" OR "7935441" OR					

		"7949587" OR "7950698" OR "7953441" OR "7962411" OR "7970677" OR "7974869" OR "7974899" OR "7978900" OR "7987231" OR "7996312" OR "7996314" OR "7996315" OR "7996316" OR "8000514" OR "8001051" OR "8009931" OR "8045784" OR "8046301" OR "8051453" OR "8060442" OR "8064729" OR "8116533" OR "8118654" OR "8131636" OR "8203640" OR "8204293" OR "8235284" OR "8275715" OR "8320657" OR "8341077" OR "8351678" OR "8358826" OR "8369650" OR "8374963" OR "8391599" OR "8392332" OR "8401962" OR "8422758" OR "8433127" OR "8433647" OR "8452689" OR "8464933" OR "8483473" OR "8531518" OR "8538124" OR "8542921" OR "8548267" OR "8559766" OR "8582862" OR "8611635" OR "8660952" OR "8708227" OR "8725607" OR "8731321" OR "8732081" OR "8751345" OR "8751356" OR "8751379" OR					

		"8768038" OR "8768836" OR "8799147" OR "8818033" OR "8824772" OR "8837806" OR "8843405" OR "8929640" OR "8950033" OR "8977571" OR "8990862" OR "9009071" OR "9036040" OR "9058512" OR "9064284" OR "9129340" OR "9159101" OR "9177197" OR "9177198" OR "9195986" OR "9224136" OR "9235860" OR "9270804" OR "9286514" OR "9311634" OR "9336517" OR "9384409" OR "9390339" OR "9401011" OR "9424569" OR "9569756" OR "9613467" OR "9613469" OR "9619872" OR "9626183" OR "9626662" OR "9674396" OR "9779392" OR "9779452" OR "9785929" OR "9792654" OR "9818090" OR "9824453" OR "9872454" OR "9886642" OR "9898778" OR "9898808" OR "9904848" OR "9946923" OR "RE31692" OR "RE44274").pn.					
L293	0	smart ADJ phone WITH check ADJ deposit SAME video	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2025/01/22 11:03 AM

			JPO; DERWENT; IBM_TDB)				
L294	0	L1 AND video near3 (frame portion) near3 (unacceptable unsatisfactory inacceptable inadequate reject$3 declin$3)	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L295	105	mobile WITH check ADJ deposit SAME video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L296	0	L1 AND contrast WITH brightness WITH position$3 WITH dimension$3 WITH spacing WITH skewing WITH warping WITH corner WITH edge WITH micr	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L297	74	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L298	0	L1 AND monitor$3 WITH determin$3 WITH provid$3 WITH confirm$3	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L299	30	mobile WITH check ADJ deposit WITH video NOT L1	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L300	44	mobile WITH check ADJ deposit WITH video NOT L1	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L301	3636	still ADJ image WITH live ADJ video	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L302	4742	still ADJ image WITH live ADJ video	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM

L303	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L304	40	live ADJ video AND mobile near3 check ADJ deposit	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L305	0	still ADJ image WITH live ADJ video AND mobile near3 check ADJ deposit	(FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L306	47	live ADJ video AND remote ADJ deposit NOT L11	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 11:03 AM
L307	9	((US-10956728-B1 OR US-10552810-B1 OR US-10504185-B1 OR US-10402790-B1 OR US-9779392-B1 OR US-8977571-B1 OR US-8688579-B1 OR US-8542921-B1 OR US-7912785-B1).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L308	7	L13 AND align$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L309	13	remote ADJ deposit AND align$4 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L310	33	remote ADJ deposit AND position$3 WITH (video live ADJ video) WITH (check instrument)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/01/22 11:03 AM
L311	250	("10013605" OR "10013681" OR "10157326" OR "10181087" OR "10210767" OR	(US-PGPUB; USPAT)	OR	ON	ON	2025/07/14 11:37 AM

		"10217375" OR "10235660" OR "10325420" OR "10354235" OR "10360448" OR "10373136" OR "10380559" OR "10380562" OR "10380565" OR "10380683" OR "10380993" OR "10402638" OR "10402790" OR "10460295" OR "10482432" OR "10504185" OR "10574879" OR "10621559" OR "10621660" OR "10706466" OR "10713629" OR "10719815" OR "10769598" OR "10818282" OR "10846667" OR "10956879" OR "11030752" OR "11042940" OR "11042941" OR "11062130" OR "11062131" OR "11062283" OR "11064111" OR "11068976" OR "11070868" OR "11121989" OR "11182753" OR "11222315" OR "11232517" OR "11288898" OR "11328267" OR "11398215" OR "1748489" OR "20010004235" OR "20010014881" OR "20010016084" OR "20010018739" OR "20010020949" OR "20010027994" OR "20010030695" OR "20010037299" OR "20010042171" OR "20010042785" OR "20010043748" OR "20010047330" OR "20010051965" OR "20010054020" OR "20020001393" OR					

		"20020013767" OR "20020016763" OR "20020016769" OR "20020023055" OR "20020032656" OR "20020038289" OR "20020052841" OR "20020052853" OR "20020065786" OR "20020072974" OR "20020075380" OR "20020075524" OR "20020084321" OR "20020087467" OR "20020107809" OR "20020116329" OR "20020116335" OR "20020118891" OR "20020120562" OR "20020129249" OR "20020133409" OR "20020138445" OR "20020138522" OR "20020145035" OR "20020147798" OR "20020150279" OR "20020152160" OR "20020152161" OR "20020152164" OR "20020152165" OR "20020152169" OR "20020152170" OR "20020153414" OR "20020154815" OR "20020159648" OR "20020169715" OR "20020171820" OR "20020172516" OR "20020178112" OR "20020186881" OR "20020188564" OR "20020195485" OR "20030005326" OR "20030018897" OR "20030023557" OR "20030026609" OR "20030038227" OR "20030046223" OR "20030051138" OR "20030055756" OR "20030055776" OR "20030056104" OR "20030072568" OR "20030074315" OR "20030075596" OR "20030075916" OR "20030078883" OR "20030081824" OR					

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		"20040133511" OR "20040136586" OR "20040138974" OR "20040148235" OR "20040158549" OR "20040165096" OR "20040170259" OR "20040171371" OR "20040193878" OR "20040201695" OR "20040201741" OR "20040202349" OR "20040205459" OR "20040210515" OR "20040210523" OR "20040217170" OR "20040228277" OR "20040236647" OR "20040236688" OR "20040238619" OR "20040240722" OR "20040245324" OR "20040247199" OR "20040248600" OR "20040252679" OR "20040260636" OR "20040267665" OR "20040267666" OR "20050001421" OR "20050001924" OR "20050010108" OR "20050015341" OR "20050015342" OR "20050021466" OR "20050030388" OR "20050033645" OR "20050033685" OR "20050033690" OR "20050033695" OR "20050034046" OR "20050035193" OR "20050038746" OR "20050038754" OR "20050044042" OR "20050044577" OR "20050049950" OR "20050071283" OR "20050075969" OR "20050075974" OR "20050078192" OR "20050078336" OR "20050080725" OR "20050082364" OR "20050086140" OR "20050086168" OR "20050087594" OR "20050091117" OR "20050091132" OR					

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		"20060023930" OR "20060025697" OR "20060026140" OR "20060039628" OR "20060039629" OR "20060041506" OR "20060045321" OR "20060045374" OR "20060045379" OR "20060047593" OR "20060053056" OR "20060059085" OR "20060064368" OR "20060071950" OR "20060077941" OR "20060080245" OR "20060085357" OR "20060085516" OR "20060102704" OR "20060103893" OR "20060106691" OR "20060106717" OR "20060110063" OR "20060112013" OR "20060115110" OR "20060115141" OR "20060118613" OR "20060124728" OR "20060124730" OR "20060144924" OR "20060144950" OR "20060152576" OR "20060161501" OR "20060164682" OR "20060166178" OR "20060167818" OR "20060171697" OR "20060182331" OR "20060182332" OR "20060186194" OR "20060202014" OR "20060202468" OR "20060206506" OR "20060208059" OR "20060210138" OR "20060212391" OR "20060212393" OR "20060214940" OR "20060215204" OR "20060215230" OR "20060221198" OR "20060222260" OR "20060229976" OR "20060229986" OR "20060229987" OR "20060238503" OR "20060242062" OR "20060242063" OR					

		"20060248009" OR "20060249567" OR "20060255124" OR "20060270421" OR "20060274164" OR "20060279628" OR "20060280360" OR "20060282383" OR "20060291744" OR "20070002157" OR "20070005467" OR "20070016796" OR "20070019243" OR "20070022053" OR "20070027802" OR "20070030357" OR "20070030363" OR "20070031022" OR "20070038561" OR "20070041629" OR "20070050292" OR "20070053574" OR "20070058851" OR "20070058874" OR "20070063016" OR "20070064991" OR "20070065143" OR "20070075772" OR "20070076940" OR "20070076941" OR "20070077921" OR "20070080207" OR "20070082700" OR "20070084911" OR "20070086642" OR "20070086643" OR "20070094088" OR "20070094140" OR "20070095909" OR "20070100748" OR "20070110277" OR "20070116364" OR "20070118472" OR "20070118747" OR "20070122024" OR "20070127805" OR "20070129955" OR "20070130063" OR "20070136198" OR "20070138255" OR "20070140545" OR "20070140594" OR "20070143208" OR "20070150337" OR "20070156438" OR "20070168265" OR "20070171288" OR "20070172107" OR					

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		"20090284637" OR "20090313167" OR "20100007899" OR "20100008579" OR "20100016016" OR "20100027679" OR "20100038839" OR "20100047000" OR "20100057578" OR "20100061446" OR "20100069093" OR "20100069155" OR "20100076890" OR "20100078472" OR "20100082470" OR "20100112975" OR "20100128131" OR "20100150424" OR "20100161408" OR "20100165015" OR "20100201711" OR "20100225773" OR "20100226559" OR "20100260408" OR "20100262522" OR "20100262607" OR "20100287250" OR "20100312705" OR "20110015963" OR "20110016084" OR "20110016109" OR "20110054780" OR "20110082747" OR "20110083101" OR "20110105092" OR "20110112967" OR "20110112985" OR "20110166976" OR "20110276483" OR "20110310442" OR "20120036014" OR "20120045112" OR "20120052874" OR "20120098705" OR "20120099792" OR "20120109793" OR "20120113489" OR "20120150767" OR "20120185383" OR "20120229872" OR "20120230577" OR "20120296768" OR "20130021651" OR "20130097076" OR "20130120595" OR "20130155474" OR "20130191261" OR "20130198071" OR					

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		"4060711" OR "4070649" OR "4128202" OR "4136471" OR "4205780" OR "4264808" OR "4305216" OR "4321672" OR "4346442" OR "4417136" OR "4433436" OR "4454610" OR "4523330" OR "4636099" OR "4640413" OR "4644144" OR "4722444" OR "4722544" OR "4727435" OR "4737911" OR "4774663" OR "4790475" OR "4806780" OR "4837693" OR "4890228" OR "4896363" OR "4927071" OR "4934587" OR "4960981" OR "4975735" OR "5022683" OR "5053607" OR "5077805" OR "5091968" OR "5122950" OR "5134564" OR "5146606" OR "5157620" OR "5159548" OR "5164833" OR "5175682" OR "5187750" OR "5191525" OR "5193121" OR "5220501" OR "5227863" OR "5229589" OR "5233547" OR "5237158" OR "5237159" OR "5237620" OR "5257320" OR "5265008" OR "5268968" OR "5283829" OR "5321816" OR "5345090" OR "5347302" OR					

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L314	250	("5903878" OR "5903881" OR "5903904" OR "5910988" OR "5917931" OR "5924737" OR	(US-PGPUB; USPAT)	OR	ON	ON	2025/07/14 11:38 AM

		"5926548" OR "5930501" OR "5930778" OR "5937396" OR "5940844" OR "5982918" OR "5987439" OR "6005623" OR "6012048" OR "6014454" OR "6021202" OR "6021397" OR "6023705" OR "6029887" OR "6030000" OR "6032137" OR "6038553" OR "6044883" OR "6053405" OR "6059185" OR "6064753" OR "6072941" OR "6073119" OR "6085168" OR "6097834" OR "6097845" OR "6097885" OR "6105865" OR "6128603" OR "6141339" OR "6145738" OR "6148102" OR "6149056" OR "6151409" OR "6151423" OR "6151426" OR "6159585" OR "6170744" OR "6178270" OR "6181837" OR "6188506" OR "6189785" OR "6192165" OR "6195452" OR "6195694" OR "6199055" OR "6236009" OR "6243689" OR "6278983" OR "6282826" OR "6293469" OR "6304860" OR "6310647" OR "6314452" OR "6315195" OR "6317727" OR "6328207" OR "6330546" OR					

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		"7761358" OR "7766223" OR "7766244" OR "7769650" OR "7778457" OR "7792752" OR "7792753" OR "7793833" OR "7810714" OR "7812986" OR "7818245" OR "7856402" OR "7865425" OR "7873200" OR "7873556" OR "7876949" OR "7885451" OR "7885880" OR "7894094" OR "7896232" OR "7900822" OR "7903863" OR "7904386" OR "7912785" OR "7935441" OR "7949587" OR "7950698" OR "7953441" OR "7962411" OR "7970677" OR "7974869" OR "7974899" OR "7978900" OR "7987231" OR "7996312" OR "7996314" OR "7996315" OR "7996316" OR "8000514" OR "8001051" OR "8009931" OR "8045784" OR "8046301" OR "8051453" OR "8060442" OR "8064729" OR "8116533" OR "8118654" OR "8131636" OR "8203640" OR "8204293" OR "8235284" OR "8275715" OR "8320657" OR "8341077" OR "8351678" OR "8358826" OR "8369650" OR					

		"8374963" OR "8391599" OR "8392332" OR "8401962" OR "8422758" OR "8433127" OR "8433647" OR "8452689" OR "8464933" OR "8483473" OR "8531518" OR "8538124" OR "8542921" OR "8548267" OR "8559766" OR "8582862" OR "8611635" OR "8660952" OR "8708227" OR "8725607" OR "8731321" OR "8732081" OR "8751345" OR "8751356" OR "8751379" OR "8768038" OR "8768836" OR "8799147" OR "8818033" OR "8824772" OR "8837806" OR "8843405" OR "8929640" OR "8950033" OR "8977571" OR "8990862" OR "9009071" OR "9036040" OR "9058512" OR "9064284" OR "9129340" OR "9159101" OR "9177197" OR "9177198" OR "9195986" OR "9224136" OR "9235860" OR "9270804" OR "9286514" OR "9311634" OR "9336517" OR "9384409" OR "9390339" OR "9401011" OR "9424569" OR "9569756" OR "9613467" OR "9613469" OR					

		"9619872" OR "9626183" OR "9626662" OR "9674396" OR "9779392" OR "9779452" OR "9785929" OR "9792654" OR "9818090" OR "9824453" OR "9872454" OR "9886642" OR "9898778" OR "9898808" OR "9904848" OR "9946923" OR "RE31692" OR "RE44274").pn.					
L316	183	(mobile remote) ADJ deposit AND (L311 L312 L313 L314 l315)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/14 11:40 AM
L317	21	(mobile remote) ADJ deposit SAME video AND (L311 L312 L313 L314 L315)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/14 11:41 AM
L318	1	(mobile remote) ADJ deposit SAME video SAME align$4 AND (L311 L312 L313 L314 L315)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/14 11:42 AM
L319	4	(mobile remote) ADJ deposit SAME video SAME guid$4 AND (L311 L312 L313 L314 L315)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/14 11:43 AM
L320	9	(mobile remote) ADJ deposit SAME video SAME position$4 AND (L311 L312 L313 L314 L315)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO;	OR	ON	ON	2025/07/14 11:44 AM

			JPO; DERWENT; IBM_TDB)				
L321	9	(mobile remote) ADJ deposit SAME video SAME (align$4 guid$4 position$4) AND (L311 L312 L313 L314 L315)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/14 12:01 PM
L322	0	(mobile remote) ADJ deposit SAME video SAME (align$4 guid$4 position$4) AND @ay<"2009"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, CA, CH, CN, DD, DE, EA, EP, ES, FR, GB, JP, KR, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/07/14 12:01 PM

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	32863	(G06Q40/02).cpc,ipc,ipcr. 705/35.ccls.	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:15 PM
N2	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N3	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N4	23	L82 AND L62	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N5	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N6	67	L82 AND L27	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N7	0	L82 AND L18	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N8	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2024/08/27 04:16 PM
N17	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N18	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N19	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N20	0	L82 AND L18	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N21	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 03:22 PM
N22	33312	(G06Q40/02).cpc,ipc,ipcr. 705/35.ccls.	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N23	0	L82 AND L78	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22

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N24	0	L82 AND L65	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N25	23	L82 AND L62	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
N26	0	L82 AND L43	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM
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N34	0	L82 AND L9	(US-PGPUB; USPAT)	OR	ON	ON	2025/01/22 10:57 AM

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First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	
Examiner Name	
Attorney Docket Number	US-0691.12c | 32-10527US2

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	1	Credit Union Management, "When You wish Upon an Imaging System...the Right Selection Process can be the Shining Star," Credit Union Management, August 1993, printed from the internet at , on October 19, 2013 (11 pgs).	☐
	2	Curtin, Denis P., A Short Course in Digital Photography Chapter 7 Graphic File Formats	☐
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☐ See attached timing statement under 37 CFR 1.97(e).

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☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
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	Filing Date	2024-12-02
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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	1	IPR2019-00815, United Services Automobile Association ("USAA")'s Patent Owner Preliminary Response, dated June 27, 2019, 66 pgs.	☐
	2	IPR2019-01081 — US 9,336,517 B1, Decision Granting Institution of Inter Partes Review 35 U.S.C. § 314; 37 C.F.R. § 42.4, dated January 13, 2020, 60 pgs.	☐
	3	IPR2019-01081 Patent No. 9,336,517, Petition for Infer Partes Review of Claims 1, 5-10, 12-14, 17-20 of US Patent No. 9,336,517, dated June 5, 2019, 78 pgs.	☐
	4	IPR2019-01081, Declaration of Peter Alexander, Ph.D, dated June 5, 2019, 135 pgs.	☐
	5	IPR2019-01082 — US 8,977,571 B1, Decision Granting Institution of Inter Partes Review 35 U.S.C. § 314; 37 C.F.R. § 42.4, dated December 13, 2019, 56 pgs.	☐
	6	IPR2019-01082 Patent No. 8,977,571, Petition for Inter Partes Review of Claims 1-13 Patent No. 9,336,517, dated June 5, 2019, 75 pgs.	☐
	7	IPR2019-01083 — US 8,977,571 B1, Decision Granting Institution of Inter Partes Review 35 U.S.C. § 314, dated January 9, 2020, 58 pgs.	☐
	8	IPR2019-01083 Patent No. 8,699,779, Petition for Inter Partes Review of Claims 1-18 Patent No. 8,699,779, dated June 5, 2019, 74 pgs.	☐
	9	IPR2020-00092, US Patent No. 9,569,756, Petition for Inter Parties Review of Claims 1-7, 9-17, 29 and 30 of US Patent No. 9,569,756, dated November 7, 2019, 74 pgs.	☐
	10	IPR2020-00882 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 9,818,090, dated April 30, 2020, 102 pgs.	☐
	11	IPR2020-00975 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 8,977,571 dated May 22, 2020, 96 pgs.	☐

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	12	IPR2020-00976 - Mitek Systems, Inc. v United Services Automobile Association, Petition for inter Partes Review of US Patent No. 8,699,779, dated May 22, 2020, 87 pgs.	☐
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	14	IPR2022-00049 filed October 22, 2021 on behalf of PNC Bank N.A., 70 pages	☐
	15	IPR2022-00050 filed October 22, 2021 on behalf of PNC Bank N.A., 126 pages	☐
	16	IPR2022-00075 filed November 5, 2021 on behalf of PNC Bank N.A., 90 pages	☐
	17	IPR2022-00076 filed November 17, 2021 on behalf of PNC Bank N.A., 98 pages	☐
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	20	JBC, "What is a MICR Line?," eHow.com, retrieved from http://www.ehow.com/about_4684793_what-micr-line.html on May 4, 2009 (2 pgs).	☐
	21	Jeffrey M. Lacker, Payment System Disruptions and the Federal Reserve Following September 11, 2001, The Federal Reserve Bank of Richmond, (Dec. 23, 2003) (attached as Exhibit 19 from the Defendant Wells Fargo Bank, N.A.'s Answer dated August 14, 2018), 55 pgs.	☐
	22	Johnson, Jennifer J., Secretary of the Board; Federal Reserve System, 12 CFR Part 229, Regulation CC; Docket No. R 1176, "Availability of Funds and Collection of Checks". Cited in patent no. 7,900,822, as dated 2009, (89 pgs)	☐

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	23	Joinson et al., Olympus E-30 Review (pts.1,4,8), Digital Photography Review, March 24, 2009, located on the Internet at: www.dpreview.com/reviews/olympus30, 6 pgs.	☐
	24	Jung et al, "Rectangle Detection based on a Windowed Hough Transform", IEEE Xplore, 2004, 8 pgs.	☐
	25	Kendrick, Kevin B., "Check Kiting, Float for Purposes of Profit," Bank Security & Fraud Prevention, vol. 1, no. 2, 1994 (3 pgs).	☐
	26	Kiser, Elizabeth K.; "Modeling the Whole Firm: The Effect of Multiple Inputs and Financial Intermediation on Bank Deposit Rates;" FEDS Working Paper No. 2004-07; June 3, 2003; pages 1-46 (46 pgs)	☐
	27	Klein, Robert, Financial Services Technology, "Image Quality and Usability Assurance: Phase 1 Project", dated July 23, 2004, 67 pgs.	☐
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	29	Knestout, Brian P. et al., "Banking Made Easy" Kiplinger's Personal Finance Washington, July 2003, vol 57, Iss 7 (5 pgs)	☐
	30	Koga, M. et al., "Camera-based Kanji OCR for Mobile-phones: Practical Issues, IEEE, 2005, 5 pgs.	☐
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	32	Laine, M. et al., "A Standalone OCR System For Mobile Cameraphones", IEEE, 2006, 5 pgs.	☐
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	35	Leach, et al., A Universally Unique Identifier (UUID) URN Namespace, (July 2005) retrieved from https://www.ietf.org/rfc/rfc4122.txt	☐
	36	Lee, Jeanne, "Mobile Check Deposits: Pro Tips to Ensure They Go Smoothly", dated February 19, 2016, 6 pgs.	☐
	37	LEICA DIGILUX 2 Instructions located on the Internet: http://www.overgaard.dk/pdf/d2_manual.pdf (attached as Exhibit 2 from the Defendant Wells Fargo Bank N.A.'s Answer dated August 14, 2018), 95 pgs.	☐
	38	Levitin, Adam J., Remote Deposit Capture: A Legal and Transactional Overview, Banking Law Journal, p. 115, 2009 (RDC)	☐
	39	Liang, J. et al., "Camera-based analysis of text and documents: a survey", IJDAR, Vol. 7, 2005, pp 84-104, 21, pgs.	☐
	40	Liang, Jian et al., Camera-Based Analysis of Text and Documents: A Survey, International Journal on Document Analysis and Recongition, June 21, 2005, 21 pages.	☐
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	48	Meara, Bob, "USAA's Mobile Remote Deposit Capture", Dated June 26, 2009, 2 pgs.	☐
	49	Metro 1 Credit Union, "Remote Banking Services," http://www.metro1cu.org/metro1cu/remote.html, downloaded April 17, 2007 (4 pgs).	☐
	50	MICR-Line Issues Associated With The Check 21 Act and the Board's Proposed Rule, Prepared by Federal Reserve Board Staff, April 27, 2004	☐

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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Search History

Report Run Date: 2025-07-14 UTC
Searches: 6
Markers: 0

Search #	Timestamp	Results	Page
1	2025-07-14 16:21 UTC	59,644	3
2	2025-07-14 16:22 UTC	11,089	3
3	2025-07-14 16:23 UTC	0	3
4	2025-07-14 16:23 UTC	0	3
5	2025-07-14 16:23 UTC	0	4
6	2025-07-14 16:24 UTC	0	4

Content: Non-Patent Literature (26)

IEEE Xplore Publications: IEEE Periodicals | IEEE Xplore Publications: IEEE Conferences | IEEE Xplore Publications: IEEE Standards | IEEE Xplore Publications: IEEE Early Access | IEEE Xplore Publications: SMPTE Periodicals | IEEE Xplore Publications: SMPTE Conferences | IEEE Xplore Publications: SMPTE Standards | IEEE Xplore Publications: MIT Press eBooks | IEEE Xplore Publications: Wiley-IEEE eBooks | IEEE Xplore Publications: IBM Periodicals | IEEE Xplore Publications: URSI Periodicals | IEEE Xplore Publications: VDE Conferences | IEEE Xplore Publications: Periodicals from China | IEEE Xplore Publications: Ericsson Technology Review | IEEE Xplore Publications: Manning Books | IEEE Xplore Publications: Packt Books | IP.com Prior Art Database: The IP.com Journal | IP.com Prior Art Database: Internet Society RFC | IP.com Prior Art Database: IBM TDB Archive | IP.com Prior Art Database: Legacy Journals | IP.com Prior Art Database: Software Patent Institute | OnePetro.org: Periodicals at OnePetro.org | OnePetro.org: Conferences at OnePetro.org | Other Literature: IBM Redbooks | Other Literature: PubMed Central | Other Literature: arXiv.org

1 **2025-07-14 16:21 UTC | 59,644 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Text
remote deposit

Concept Modifiers: None

Filters: None

2 **2025-07-14 16:22 UTC | 11,089 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 1

Concept Modifiers: None

Filters (1):
Publication Date: To 2009-08-21

3 **2025-07-14 16:23 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 1

Concept Modifiers: None

Filters (2):
Publication Date: To 2009-08-21
Classic Syntax limited to: (mobile OR remote) near2 deposit near50 video near50 (align* OR guid* OR position*)

4 **2025-07-14 16:23 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 1

Concept Modifiers: None

Filters (2):
Publication Date: To 2009-08-21
Classic Syntax limited to: (mobile OR remote) near2 deposit near50 video near99 (align* OR guid* OR position*)

5 **2025-07-14 16:23 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 1

Concept Modifiers: None

Filters (2):
Publication Date: To 2009-08-21
Classic Syntax limited to: (mobile OR remote) near2 deposit near99 video near99 (align* OR guid* OR position*)

6 **2025-07-14 16:24 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 1

Concept Modifiers: None

Filters (2):
Publication Date: To 2009-08-21
Classic Syntax limited to: (mobile OR remote) near5 deposit near99 video near99 (align* OR guid* OR position*)

PTO/SB/08a (01-25)
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

U.S. PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Inventor of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	1748489	A	1930-02-25	LEWIS MCCARTHY GEORGE et al.	
	2	2292825	A	1942-08-11	DILKS JR JAMES J	
	3	3005282	A	1961-10-24	KIRK CHRISTIANSEN GODTFRED	
	4	3341820	A	1967-09-12	GRILLMEIER JR EARL J et al.	
	5	3576972	A	1971-05-04	Wood et al.	
	6	3593913	A	1971-07-20	Bremer	
	7	3620553	A	1971-11-16	Marion Donovan, 418 Harbor Road	
	8	3648242	A	1972-03-07	Grosbard	

PC.1.19.25

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	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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PC.1.19.25

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	175	6243689	B1	2001-06-05	Norton	
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PC.1.19.25

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	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
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	Filing Date	2024-12-02
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	Art Unit	
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	Application Number	18966097
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	Art Unit	
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	Application Number	18966097
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	Art Unit	
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	Application Number	18966097
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	Application Number	18966097
	Filing Date	2024-12-02
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	Filing Date	2024-12-02
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	Filing Date	2024-12-02
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	49	149 Cong. Rec. H9289, October 8, 2003, 6 pgs.	☐
	50	ABA Routing System Transit Number, Wikipedia, dated Sept. 27, 2006, 3pgs.	☐

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Examiner Signature	/WILLIAM E RANKINS/	Date Considered	07/14/2025

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	1	Fisher, Dan M., "Home Banking in the 21st Century: Remote Capture Has Gone Retail", May 2008 (4 pgs).	☐
	2	Fletcher, Lloyd A., and Rangachar Kasturi, "A robust algorithm for text string separation from mixed text/graphics images", IEEE transactions on pattern analysis and machine inteligence 10.6 (1998), 910-918 (1988)	☐
	3	Fujisawa, H. et al., "Information Capturing Camera and Developmental Issues", IEEE Xplore, downloaded on Aug. 18, 2020, 4 pgs.	☐
	4	Furst, Karen et al., "Internet Banking: Developments and Prospects", Economic and Policy Analysis Working Paper 2000-9, September 2000 (60 pgs)	☐
	5	Garry, M., "Checking Options: Retailers face an evolving landscape for electronic check processing that will require them to choose among several scenarios," Supermarket News, Vol. 53, No. 49, 2005 (3 pgs).	☐
	6	Gates, A History of Wireless Standards, Wi-Fi Back to Basics, Areohive Blog, July 2015, located on the Internet at: http://blog.aerohine.com/a-history-of-wireless-standards, 5 pgs.	☐
	7	German Shegalov, Diplom-Informatiker, "Integrated Data, Message, and Process Recovery for Failure Masking in Web Services", Dissertation July 2005 (146 pgs)	☐
	8	Google Patent Translation of Luo et al. CN1897644A - Method and system for catching pictures (Year: 2005)	☐
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	10	Gupta, Maya R. et al., "OCR binarization and image pre-processing for searching historical documents," Pattern Recognition, Vol. 40, No. 2, February 2007, pp. 389-397.	☐
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	12	Hale, J., "Picture this: Check 21 uses digital technology to speed check processing and shorten lag time," Columbus Business First, http://columbus.bizjournals.com/columbus/stories/2005/03/14focus1.html, downloaded 2007 (3 pgs).	☐
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	15	Haskell, B.G. et al, "Image and video coding-emerging standards and beyond," in IEEE Transactions on Circuits and Systems for Video Technology, Vol. 8 No. 7, pp 814-837, Nov. 1998	☐
	16	Heckenberg, D. "Using Mac OS X for Reai-Time Image Processing" 10/08/2003 (15 pgs)	☐
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	18	Henkel, Joseph et al., "Remote Deposit Capture in the Consumer's Hands", Downloaded on June 19, 2010 at 18:46: UTC from IEEE Xplore	☐
	19	Herley, Cormac, "Recursive Method To Extract Rectangular Objects From Scans", Microsoft Research, October 2003, 4 pgs.	☐
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	21	Higgins, Ray et al., "Working With Image Cash Letters (ISLs) X9.37, 180 or 187 files", All My Papers, 2009, 36 pgs.	☐
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	23	Hill, S., "From J-Phone to Lumina 1020: A complete history of the camera phone", Digital Trends, 2020, 9 pgs.	☐
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	37	iPhone Store Downloads Top 10 Million in First Weekend, July 14, 2008, located on the Internet at: http://www.apple.com/newsroom/2008/07/14iPhone-App-Stire-Downloads-Top-10 Million-in-First-Weekend, 3 pgs.	☐
	38	IPR Petition 2022-01593, Truist Bank v. United Services Automobile Association filed October 11, 2022	☐
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	40	IPR2019-00815 Patent No. 9,818,090, Declaration of Peter Alexander, PhD. as filed in the IPR on March 20, 2019, 99 pgs.	☐
	41	IPR2019-00815 Patent No. 9,818,090, Exhibit B Proposed Claim Constructions for the '571, '090, '779 and '517 Patents, filed on 2/28/19, 10 pgs,	☐
	42	IPR2019-00815 Patent No. 9,818,090, Notice of Filing Date Accorded to Petition and Time for Filing Patent Owner Preliminary Response, dated March 27, 2019, 5 pgs.	☐
	43	IPR2019-00815 Patent No. 9,818,090, Petition For Inter Parties Review of Claims 1-19 of U.S. Patent No. 9,818,090, dated March 20, 2019, 56 pgs.	☐
	44	IPR2019-00815 Patent No. 9,818,090, Petitioner's Reply Brief to Patent Owner Preliminary Response Pursuant To Authorization Provided In Paper No. 13, dated August 1, 2019, 9 pgs.	☐

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	45	IPR2019-00815 Patent No. 9,818,090, Petitioner's Supplementai Exhibit List, dated August 1, 2019, 5 pgs.	☐
	46	IPR2019-00815 Patent No. 9,818,090, United Services Automobile Association ('USAA')'s Sur-Reply In Support of Patent Owner Preliminary Response, dated August 8, 2019, 8 pgs.	☐
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	48	IPR2019-00815, Federal Reserve Financial Services Retired: DSTU X9.37-2003, Specifications for Electronic Exchange of Check and Image Data, Copyright 2006 by Accredited Standards Committee X9, Inc., dated March 31, 2003, 157 pgs.	☐
	49	IPR2019-00815, Invalidity Chart, uploaded on June 27, 2019, 94 pgs.	☐
	50	IPR2019-00815, Supplemental Invalidity Chart, dated on June 27, 2019, 16 pgs.	☐

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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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	2	Microsoft Mobile Devices Buyer's Guide, 2002, 4 pgs.	☐
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	15	MOTOMANUAL for MOTORAZR, located on the Internet at: https://www.cellphones.ca/downloads/phones/manuals/motorola-razr-v3xx-manual.pdf (excerpts attached as Exhibit 8 from the Defendant Wells Fargo Bank, N.A.'s Answer dated August 14, 2018), 34 pgs.	☐
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	17	Motorola RAZR MAXX V6 User Manual, located on the Internet at: https://www.phonearena.com/phones/Motorola-RAZR-MAXX-V6_id1680 (attached as Exhibit 7 from the Defendant Wells Fargo Bank, N.A.'s Answer dated August 14, 2018), 36 pgs.	☐
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	24	Nikon Digital Camera D300 User's Manual, located on the Internet at: http://download.nikonimglib.com/archive2/iBuJv00Aj97i01y8BrK49XX0Ts69/D300_EU(En)04.pdf (attached as Exhibit 5 from the Defendant Wells Fargo Bank, N. A.'s Answer dated August 14, 2018), 195 pgs.	☐
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	34	Non-Final Office Action issue on U.S. Application 17/511,822 on September 16, 2022 (14538-731)	☐
	35	Non-Final Office Action issued on U.S. Application 14/293,159 on August 11, 2022 (14538-335)	☐
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	37	Non-Final Office Action issued on U.S. Application 17/071,678 on September 14, 2022 (14538-705)	☐
	38	Non-Final Office Action issued on U.S. Application 17/180,075 on October 4, 2022 (14538-715)	☐
	39	Non-Final Office Action issued on U.S. Application 17/568,849 on October 4, 2022 (14538-736)	☐
	40	Notice of Allowance from corresponding U.S. Appln No. 12/545,127 dated January 17, 2013 (7 pgs).	☐
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	48	P.R. 4-3 Joint Claim Construction and Pre-Hearing Statement, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-366, dated April 5, 2019, 190 pgs.	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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Examiner Signature	/WILLIAM E RANKINS/	Date Considered	07/14/2025

*EXAMINER: Initial if reference considered and whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

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Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

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A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	Application Number	18966097
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Inventor of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	7163347	B2	2007-01-16	Lugg	
	2	7178721	B2	2007-02-20	Maloney	
	3	7181430	B1	2007-02-20	Buchanan et al.	
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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	131	7873200	B1	2011-01-18	Oakes, III et al.	
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PC.1.19.25

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
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PC.1.19.25

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Application Number	18966097
	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
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PC.1.19.25

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

	44	Application as filed on March 4, 2009 for U.S. Appln No. 12/397,930 (37 pgs).	☐
	45	Application as filed on May 10, 2007 for U.S. Appln No. 11/747,222 (35 pgs).	☐
	46	Application as filed on October 17, 2008 for U.S. Appln No. 12/253,278 (42 pgs).	☐
	47	Application as filed on October 23, 2007 for U.S. Appln No. 11/876,925 (36 pgs).	☐
	48	Application as filed on October 23, 2007 for U.S. Appln No. 11/877,335 (29 pgs).	☐
	49	Application as filed on October 25, 2007 for U.S. Appln No. 11/923,839 (22 pgs).	☐
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Examiner Signature	/WILLIAM E RANKINS/	Date Considered	07/14/2025

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Bibliographic Data

Application No: 18/966,097

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /WILLIAM E RANKINS/ (Examiner's Signature) | (Initials)

Title: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/02/2024	705	3694	US-0691.12c |32-10527US02
RULE			

APPLICANTS

United Services Automobile Association (USAA), San Antonio, TX, UNITED STATES

INVENTORS

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Bharat Prasad, San Antonio, TX, UNITED STATES

Minya Liang, San Antonio, TX, UNITED STATES

Reynaldo Medina, San Antonio, TX, UNITED STATES

Charles Lee Oakes III, Boerne, TX, UNITED STATES

CONTINUING DATA

This application is a CON of 18593856 03/01/2024 PAT 12159310

18593856 is a CON of 17161235 01/28/2021ABN

17161235 is a CON of 16712182 12/12/2019 PAT 11341465

16712182 is a CON of 16280455 02/20/2019ABN

16280455 is a CON of 15792966 10/25/2017 PAT 10235660

15792966 is a CON of 15392950 12/28/2016 PAT 9818090

15392950 is a CON of 13922686 06/20/2013 PAT 9569756

13922686 is a CON of 12545127 08/21/2009 PAT 8977571

FOREIGN APPLICATIONS

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12/10/2024

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	1	Claims as filed on July 28, 2017 for U.S. Appln No. 15/663,284 (6 pgs).	☐
	2	Claims as filed on July 28, 2017 for U.S. Appln No. 15/663,305 (6 pgs).	☐
	3	Claims as filed on June 12, 2015 for U.S. Appln No. 14/738,340 (4 pgs).	☐
	4	Claims as filed on June 13, 2012 for U.S. Appln No. 13/495,971 (36 pgs).	☐
	5	Claims as filed on June 15, 2016 for U.S. Appln No. 15/183,461 (36 pgs).	☐
	6	Claims as filed on June 20, 2013 for U.S. Appln No. 13/922,686 (7 pgs).	☐
	7	Claims as filed on June 9, 2014 for U.S. Appln No. 14/299,456 (36 pgs).	☐
	8	Claims as filed on March 15, 2007 for U.S. Appln No. 11/686,925 (5 pgs).	☐
	9	Claims as filed on March 20, 2014 for U.S. Appln No. 14/220,799 (1 pg).	☐
	10	Claims as filed on March 23, 2017 for U.S. Appln No. 15/467,167 (4 pgs).	☐
	11	Claims as filed on March 25, 2014 for U.S. Appln No. 14/224,944 (4 pgs).	☐

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	Attorney Docket Number	US-0691.12c | 32-10527US2

	12	Claims as filed on March 25, 2014 for U.S. Appln No. 14/225,090 (1 pg).	☐
	13	Claims as filed on March 3, 2014 for U.S. Appln No. 14/195,482 (4 pgs).	☐
	14	Claims as filed on May 10, 2007 for U.S. Appln No. 11/747,223 (4 pgs).	☐
	15	Claims as filed on May 18, 2011 for U.S. Appln No. 13/110,077 (9 pgs).	☐
	16	Claims as filed on May 2, 2011 for U.S. Appln No. 13/098,566 (10 pgs).	☐
	17	Claims as filed on November 20, 2012 for U.S. Appln No. 13/682,268 (4 pgs).	☐
	18	Claims as filed on November 23, 2016 for U.S. Appln No. 15/360,738 (3 pgs).	☐
	19	Claims as filed on November 25, 2015 for U.S. Appln No. 14/952,625 (1 pg).	☐
	20	Claims as filed on November 7, 2016 for U.S. Appln No. 15/345,190 (5 pgs).	☐
	21	Claims as filed on October 09, 2015 for U.S. Appln No. 14/879,868 (4 pgs).	☐
	22	Claims as filed on October 16, 2014 for U.S. Appln No. 14/516,335 (4 pgs).	☐

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	23	Claims as filed on October 16, 2014 for U.S. Appln No. 14/516,350 (4 pgs).	☐
	24	Claims as filed on October 16, 2014 for U.S. Appln No. 14/516,364 (4 pgs).	☐
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	29	Claims as filed on October 31, 2006 for U.S. Appln No. 11/590,995 (3 pgs).	☐
	30	Claims as filed on October 31, 2006 for U.S. Appln No. 11/590,998 (4 pgs).	☐
	31	Claims as filed on October 31, 2007 for U.S. Appln No. 11/931,804 (4 pgs).	☐
	32	Claims as filed on October 8, 2007 for U.S. Appln No. 11/868,878 (4 pgs).	☐
	33	Claims as filed on September 14, 2012 for U.S. Appln No. 13/619,026 (3 pgs).	☐

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	34	Claims as filed on September 2, 2008 for U.S. Appln No. 12/202,781 (4 pgs).	☐
	35	Claims as filed on September 8, 2008 for U.S. Appln No. 12/206,001 (3 pgs).	☐
	36	Claims as filed on September 8, 2008 for U.S. Appln No. 12/206,007 (3 pgs).	☐
	37	Claims as filed September 19, 2017 for U.S. Appln No. 15/709,071 (1 pgs).	☐
	38	Claims as filed September 19, 2017 for U.S. Appln No. 15/709,126 (1 pgs).	☐
	39	Claims as filed September 19, 2017 for U.S. Appln No. 15/709,143 (1 pgs).	☐
	40	Claims as filed September 8, 2014 for U.S. Appln No. 14/479,478 (5 pgs).	☐
	41	Clancy, Heather, "Turning cellphones into scanners", The New York Times, Feb 12, 2005; https://www.nytimes.com/2005/02/12/busienss/worldbusiness/turningcellphones-into-scanners.html	☐
	42	CNN.com/technology, "Scan, deposit checks from home", www.cnn.com/2008ITECH/biztech/02/07/check.scanning.ap/index.html, February 7,2008 (3 pgs).	☐
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	45	Consumer Guide to Check 21 and Substitute Checks, The Federal Reserve Board, The Wayback Machine – October 28, 2004 https://web.archive.org/web/20041102233724/http://www.federalreserve.gov	☐
	46	Craig Varеam, "Image Deposit Solutions" Emerging Solutions for More Efficient Check Processing", November 2005, 16 pages.	☐
	47	Craig, Ben, "Resisting Electronic Payment Systems: Burning Down the House?", Federal Reserve Bank of Cleveland, July 1999 (4 pgs)	☐
	48	Creativepaymentsolutions.com, "Creative Payment Solutions - Websolution," www.creativepaymentsolution.com/cps/financialservices/websolution/default.html, Copyright 2008, Creative Payment Solutions, Inc. (1 pg).	☐
	49	Credit Union Journal, "AFCU Averaging 80 DepositHome Transactions Per Day", Credit Union Journal, August 15, 2005 (1 pg)	☐
	50	Credit Union Journal, "The Ramifications of Remote Deposit Capture Success", www.cuiournal.com/orintthis.html?id=20080411 EODZT57G, April 14, 2008 (1 pg).	☐

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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/WILLIAM E RANKINS/
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Atty. Docket No. US-0691.12c

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael Patrick Bueche JR. Art Unit: 3694

Appln. No.: 18/966,097 Examiner: William E Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

AMENDMENT AFTER FINAL REJECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the final Office Action of January 27, 2025, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 12 of this paper.

PTO/SB/08a (01-25)
Approved for use through 11/30/2027. OMB 0651-0031
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Examiner Name	
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	1	Panini My Vision X Operator Manual, Panini, 2004, (cited in IPR2020-00093, US Patent No. 9,892,454), 51 pgs.	☐
	2	Pappas, A., "Taking Sharper Pictures Is Now a Snap as Sprint Launches First 1.3-Megapixal Camera Phone in the United States", 2004, 2 pgs.	☐
	3	Parikh, T., "Mobile Phones and Paper Documents: Evaluating a New Approach for Capturing Microfinance Data in Rural India", CHI 2006 Proceedings, 2006, 10 pgs.	☐
	4	Parikh, T., "Using Mobile Phones for Secure, Distributed Document Processing in the Developing World", IEE Persuasive Computing, Vol. 4, No. 2, 2005, 9 pgs.	☐
	5	Parties' P.R.4-5(D) Joint Claim Construction Chart, filed in Civil Action No. 2:18-CV-245, dated June 14, 2019, 28 pgs.	☐
	6	Parties' P.R. 4-5(D) Joint Claim Construction Chart, filed in Civil Action No. 2.18-CV-366, dated June 18, 2019, 27 pgs.	☐
	7	Parties' P.R. 4-5(D) Joint Claim Construction Chart, United Services Automobile Association v. Wells Fargo Bank, N. A., Civil Action No. 2:18-cv-245, dated May 9, 2019, 25 pgs.	☐
	8	Patel, Kunur, "How Mobile Technology is Changing Banking's Future" AdAge, September 21, 2009, 4 pages	☐
	9	Patel, Kunur, Ad Age, "How Mobile Technology Ils Changing Banking's Future", dated September 21, 2009, 3 pgs.	☐
	10	Patent Disclaimer for US Patent No, 8,699,779, filed on March 4, 2019, 2 pgs.	☐
	11	Patent Disclaimer for US Patent No, 8,977,571, filed on February 20, 2019, 2 pgs.	☐

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	12	Patent Disclaimer for US Patent No, 9,336,517, filed on March 4, 2019, 2 pgs.	☐
	13	Patent Disclaimer for US Patent No, 9,818,090, filed on February 20, 2019, 2 pgs.	☐
	14	Patterson, Scott "USAA Deposit@Home — Another WOW moment for Net Banking", NextCU.com, 1/26/2007 (5 pgs)	☐
	15	Pbmplus — image file format conversion package, retrieved from https://web.archive.org/web/20040202224728/https://www.acme.com/software/pbmplus/	☐
	16	Petition filed by PNC Bank N.A. for Inter Partes Review of Claims 1-18 of Patent 10,621,559, dated July 21, 2021, IPR2021-01076, 111 pages	☐
	17	Petition filed by PNC Bank N.A. for Inter Partes Review of Claims 1-18 of Patent 10,621,559, filed July 21, 2021, IPR2021-01077; 100 pages	☐
	18	Petition filed by PNC Bank N.A. for Inter Partes Review of Claims 1-23 of Patent 10,482,432, dated July 14, 2021, IPR2021-01071, 106 pages	☐
	19	Petition filed by PNC Bank N.A. for Inter Partes Review of Claims 1-30 of Patent 10,013,681, filed August 27, 2021, IPR2021-01381, 127 pages	☐
	20	Petition filed by PNC Bank N.A. for Inter Partes Review of Claims 1-7, 10-21 and 23 of Patent 10,482,432, dated July 14, 2021, IPR2021-01074	☐
	21	Petition filed by PNC Bank N.A. for Inter Partes Review of Patent 10,013,605, filed August 27, 2021, IPR2021-01399, 113 pages	☐
	22	Petition filed by Wells Fargo Bank, N.A. for Covered Business Method Review of Claims 1-20 of US Patent No. 8,977,571, dated November 8, 2018, 95 pgs.	☐

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	23	Petition filed by Wells Fargo Bank, N.A. for Covered Business Method Review of Claims 1-20 of US Patent No. 9,336,517, dated November 8, 2018, 98 pgs.	☐
	24	Petition filed by Wells Fargo Bank, N.A. for Covered Business Method Review of Claims 1-20 of US Patent No. 9,818,090, dated November 8, 2018, 90 pgs.	☐
	25	Petition filed by Wells Fargo Bank, N.A. for Covered Business Method Review of Claims 1-23 of US Patent No. 8,699,779, dated November 8, 2018, 101 pgs.	☐
	26	Plaintiff and Counterclaim Defendant's Answer to Defendant and Counterclaims Plaintiff's Amended Answer, Affirmative Defenses, & Counterclaims, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-366, dated April 26, 2019, 18 pgs.	☐
	27	Plaintiff and Counterclaim Defendant's Answer to Defendant and Counterclaims Plaintiff's Amended Answer, Affirmative Defenses, & Counterclaims, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated March 21, 2019, 36 pgs.	☐
	28	Plaintiff's Notice of Decision Denying Institution of Covered Business Method Patent Review, filed in Civil Action No. 2:18-CV-245, dated May 15, 2019, 36 pgs.	☐
	29	Plaintiff's Notice of Decisions Denying Institution of Covered Business Method Patent Review, filed in Civil Action No. 2:18-CV-245, dated June 6, 2019, 61 pgs.	☐
	30	Plaintiff's Notice of Filing Claim Construction Presentation, filed in Civil Action No. 2:18-CV-245, dated May 23, 2019, 106 pgs.	☐
	31	PNC Bank to Offer Ease of Online Deposit Service Integrated QuickBooks to Small Business", RemoteDepositCapture.com, July 24, 2006, 2 pgs.	☐
	32	POP, ARC and BOC-A Comparison, Federal Reserve Banks, at 1 (Jan. 7, 2009) available on the Internet at: https://web.archive.org/web/20090107101808/https://www.frbservices.org/files/eventseducation/pdf/pop_arc_boc_comparison.pdf (attached as Exhibit 13 from the Defendant Wells Fargo Bank, N.A.'s Answer dated August 14, 2018), 3 pgs.	☐
	33	Printout of news article dated February 13, 2008, announcing a Nokia phone providing audio cues for capturing a document image	☐

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	34	Provisional patent application filed by Wells Fargo Bank, dated January 29, 2008, 134 pgs.	☐
	35	Public Law 108-100, 108 Congress; "An Act Check Clearing For the 21st Century Act", October 28, 2003, 117 STAT. 1177 (18 pgs)	☐
	36	Quinn and Roberds, The Evolution of the Check as a Means of Payment: A Historical Survey, Federal Reserve Bank of Atlanta, Economic Review, 2008, 30 pgs.	☐
	37	Ranjan, Amit, "Using a Camera with Windows Mobile 5", July 21, 2006	☐
	38	Rao, Bharat; "The Internet And The Revolution in Distribution: A Cross-industry Examination"; Technology in Society; 1999; pages 287-306; Vol. 21, No. 3 (20 pgs)	☐
	39	Readdle, Why Scanner Pro is Way Better Than Your Camera? (June 27, 2016) retrieved from https://readdle.com/blog/why-scanner-pro-is-way-better-than-your-camera	☐
	40	Reed, John, "FT.com site: Mobile users branch out", ProQuest, Trade Journal, October 6, 2005	☐
	41	Remote Deposit Capture Basic Requirements, dated August 22, 2009, 1 pg.	☐
	42	Remote Deposit Capture.com Scanner Matrix, dated October 21, 2011, 3 pgs.	☐
	43	Remotedepositcapture, URL:www.remotedepositcapture.com, Cited in patent no. 7,900,822, as dated 2006 (5 pgs)	☐
	44	RemoteDepositCapture.com, "PNC Bank to Offer Ease of Online Deposit Service Integrated with QuickBooks to Small Businesses", Remote Deposit Capture News Articles from July 24, 2006, (2 pgs)	☐

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	45	RemoteDepositCapture.com, Remote Deposit Capture News Articles from July 6, 2006, "BankServ Announces New Remote Deposit Product Integrated with QuickBooks" (3 pgs)	☐
	46	Remotedepsitcapture.com, LLC, "Remote Deposit Capture Overview," ROC Overview, http://remotedepositcapture.com/overview/RDC_overview.htm, Cited in patent no. 7,900,822, as dated 3/12/2007 (4 pgs)	☐
	47	Richey, J. C. et al., "EE 4530 Check Imaging," Nov. 18, 2008 (10 pgs).	☐
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TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

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☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

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Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	1	CBM2019-00028, Robinson, Daniel, "Client Week — Handsets advance at 3GSM", Copyright 2004 by VNU Business Publications Ltd., 2 pgs.	☐
	2	CBM2019-00028, Seitz, Patrick "Multifunction Trend Shaking Up The Handheld Device industry; Solid Sales Expected in 2004; PDA, handset, camera — one single, small product can fill a variety of roles", Copyright 2004 Investor's Business Daily, Inc., 3 pgs.	☐
	3	CBM2019-00028, United Services Automobile Association ('USAA')'s Patent Owner Preliminary Response, dated July 8, 2019, 73 pgs.	☐
	4	CBM2019-00028, Wong, May "HP unveils new mobile computers", Copyright 2006 by The Buffalo News, 2 pgs.	☐
	5	CBM2019-00029 Patent No. 10,013,605, Declaration of Peter Alexander, Ph.D., dated March 28, 2019, 76 pgs.	☐
	6	CBM2019-00029 Patent No. 10,013,605, Petition For Covered Business Method Review of Claims 1-3, 5-14, 16-29 of US Patent No, 10,013,605, dated March 28, 2019, 88 pgs.	☐
	7	CBM2019-00029 Patent No. 10,013,605, Plaintiff United Services Automobile Association (USAA) Preliminary Claim Constructions And Extrinsic Evidence, dated March 15, 2019, 74 pgs.	☐
	8	CBM2019-00029, "Dynamism.com: Take tomorrow's tech home today with Dynamism.com: Latest gadgets merge next generation technology with high style design", Copyright 2006 Normans Media Limited, 2 pgs.	☐
	9	CBM2019-00029, Declaration of Matthew A. Calman in Support of Patent Owner Preliminary Response, dated July 17 2019, 29 pgs.	☐
	10	CBM2019-00029, Defendant's Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 31, 2019, 28 pgs.	☐
	11	CBM2019-00029, HP User Guide, Additional Product Information, Copyright 2006 by Hewlett-Packard Development Company, L.P., 204 pgs.	☐

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	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Attorney Docket Number	US-0691.12c | 32-10527US2

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

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☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

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Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

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A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Art Unit	
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	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Examiner Name	
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Art Unit	
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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
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PC.1.19.25

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
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PC.1.19.25

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	Application Number	18966097
	Filing Date	2024-12-02
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
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	Attorney Docket Number	US-0691.12c | 32-10527US2

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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PC.1.19.25

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	19	CBM2019-00005 Patent No. 8,699,779, Decision Denying Institution of Covered Business Method Patent Review 37 C.F.R. § 42.208, dated June 3, 2019, 27 pgs.	☐
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

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	25	CBM2019-00027 Patent No. 9,224,136, Declaration of Peter Alexander, Ph.D., dated March 28, 2019, 147 pgs.	☐
	26	CBM2019-00027 Patent No. 9,224,136, Notice of Filing Date Accorded to Petition and Time for Filing Patent Owner Preliminary Response, dated April 8, 2019, 3 pgs.	☐
	27	CBM2019-00027 Patent No. 9,224,136, Petition For Covered Business Method Review of Claims 1-3, 5-9, 11-16 and 18 of US Patent No, 9,224,136, dated March 28, 2019, 93 pgs.	☐
	28	CBM2019-00027, Declaration of Bharat Prasad, dated July 8, 2019, 32 pgs.	☐
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	Application Number	18966097
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

	34	CBM2019-00028 Patent No. 10,013,681, Plaintiff United Services Automobile Association (USAA) Preliminary Claim Constructions And Extrinsic Evidence, dated March 15, 2019, 74 pgs.	☐
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Examiner Signature	/WILLIAM E RANKINS/	Date Considered	07/14/2025

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	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☒ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☐ No IDS size fee is required under 37 CFR 1.17(v) at this time.

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(1).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).

☒ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-01-23
Name/Print	Christopher R. Abidin	Registration Number	74742

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	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	US-0691.12c | 32-10527US2

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael Patrick Bueche Jr. Art Unit: 3692

Appln. No.: 18/966,097 Examiner: William E. Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Pursuant to 37 C.F.R. § 1.56, and without any assertion as to materiality or prior art effect, the documents listed on the forms PTO/SB/08a submitted herewith are hereby cited. No aspect of this submission constitutes a disclaimer of claim scope. The submission of this information disclosure statement is not an admission that any item cited herein is prior art as to the claimed invention or that any item cited herein is material to patentability.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c | 56-10664) any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: October 17, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

Carmichael IP, PLLC
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**10/17/2025 06:40:07 PM Z ET**	**US-0691.12c | 56-10664**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	72757799	FILING DATE	12/02/2024
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 86

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-10-17_US-0691.12c_RCE.pdf	3	Request for Continued Examination (RCE)	1628 KB
2025-10-17_US-0691.12c_IDS-Transmittal.pdf	1	Transmittal Letter	53 KB
2025-10-17_US-0691-12c_IDS_1_OF_2.pdf	12	Information Disclosure Statement (IDS) Form (SB08)	1336 KB
2025-10-17_US-0691-12c_IDS_2_OF_2.pdf	7	Information Disclosure Statement (IDS) Form (SB08)	1334 KB
23-1639.OPINION.6-12-2025_2529490.pdf	13	Non Patent Literature	136 KB
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Digest

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CBM2019-00002 Termination Dismissal Adobe-print-pdf.pdf	20A72373681F2BB61D1DD975D73E28EE0EFF228DDC2EB48016B73A2ECD5933AA5ED540AB34450B63965899C6AA0DE28DBBF1A24AF22D88FC160612D08EDA0408
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23-1687.OPINION.6-12-2025_2529482.pdf	088098840E65DEF84B2090AEF57EC424C5AEF01C40C5D95FA573DAF81D7709EEB5DF530569651059F33599DA3D1BA84A3525E5C49B31960592C8CCF92FFD08ED
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23-1778.OPINION.6-12-2025_2529517.pdf	8A5A8934151AC28415F6A4511CF1A0064F2DCEBBAEA3B93459B9AD814CE9F94CA0DC9A771C5B3F8F28AE9E8EAC778E499D0AE15DE7E3DBA1545DB46D4DEEE7C2
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/30EFS (01-22)
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	18/966,097	Filing Date	2024-12-02	Docket Number (if applicable)	US-0691.12c | 56-10664	Art Unit	3694
First Named Inventor	Michael Patrick Bueche JR.			Examiner Name	WILLIAM E. RANKINS		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☐ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504184

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (01-22)
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Signature of Registered U.S. Patent Practitioner			
Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-10-17
Name	Christopher R. Abidin	Registration Number	74,742

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Inventor of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6145738	A	2000-11-14	Stinson et al.	
	2	6149056	A	2000-11-21	Stinson et al.	
	3	6697091	B1	2004-02-24	Rzepkowski et al.	
	4	6931255	B2	2005-08-16	Mekuria	
	5	6944773	B1	2005-09-13	Abrahams	
	6	7027171	B1	2006-04-11	Watanabe	
	7	7120461	B2	2006-10-10	Cho	
	8	7156311	B2	2007-01-02	Attia et al.	

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	9	7792753	B1	2010-09-07	Slater et al.	
	10	7873200	B1	2011-01-18	Oakes, III et al.	
	11	12159310	B1	2024-12-03	Bueche, Jr. et al.	
	12	12211095	B1	2025-01-28	Bueche, Jr. et al.	

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	1	20040205459	A1	2004-10-14	Green, Brett A.	
	2	20050036665	A1	2005-02-17	Higuchi, Teruyuki	
	3	20050097046	A1	2005-05-05	Singfield, Joy Shantia	
	4	20050100216	A1	2005-05-12	Myers, Gregory et al.	
	5	20050216410	A1	2005-09-29	Davis, Steven et al.	

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	6	20050281450	A1	2005-12-22	Richardson, Joseph L.	
	7	20060026140	A1	2006-02-02	King et al.	
	8	20060106717	A1	2006-05-18	Randle et al.	
	9	20060152576	A1	2006-07-13	Kiessling et al.	
	10	20060242062	A1	2006-10-26	Peterson et al.	
	11	20070118747	A1	2007-05-24	Pintsov et al.	
	12	20070194102	A1	2007-08-23	Cohen et al.	
	13	20070262148	A1	2007-11-15	Yoon et al.	
	14	20090114716	A1	2009-05-07	Ramachandran	
	15	20090185241	A1	2009-07-23	Nepomniachtchi	
	16	20090185737	A1	2009-07-23	Nepomniachtchi	

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	17	20100078472	A1	2010-04-01	Lin et al.	
	18	20100128131	A1	2010-05-27	Tenchio et al.	

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	1	0984410	EP	A1	2000-03-08	Slater et al.		☐
	2	2004023158	JP	A	2004-01-22	Takehara	(Translation)	☒
	3	2006174105	JP	A	2006-06-29	Miyata	(Translation)	☒
	4	0161436	WO	A2	2001-08-23	Acharya et al.		☐
	5	2005043857	WO	A1	2005-05-12	Garcia et al.	(Translation)	☒
	6	2006086768	WO	A2	2006-08-17	Byrne et al.		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	A. Adams, N. Felfand, and K. Pulli, "Viewfinder Alignment," Computer Graphics Forum (Eurographics 2008), vol. 27, no. 2, pp. 597-606 (April 2008)	☐
	2	CBM2019-00002, Dismissal and Termination (April 26, 2019)	☐
	3	CBM2019-00002, Petition (November 8, 2018)	☐
	4	CBM2019-00003, Decision Denying Institution (June 3, 2019)	☐
	5	CBM2019-00004, Decision Denying Institution (May 15, 2019)	☐
	6	CBM2019-00005, Decision Denying Institution (June 3, 2019)	☐
	7	CBM2019-00027, Decision Denying Institution (October 1, 2019)	☐
	8	CBM2019-00029, Decision Denying Institution (October 1, 2019)	☐
	9	DCT, MITEK SYSTEMS, INC. v. UNITED SERVICES AUTOMOBILE ASSOCIATION, No. 21-1989 (Fed. Cir. 2022) (slip op.)	☐
	10	DCT, MITEK SYSTEMS, INC. v. UNITED SERVICES AUTOMOBILE ASSOCIATION, No. 23-1687 (Fed. Cir. 2025) (slip op.)	☐

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	11	DCT, United Services Automobile Association v. PNC Bank N.A., No. 23-1639 (Fed. Cir. 2025) (slip op.)	☐
	12	DCT, United Services Automobile Association v. PNC Bank N.A., No. 23-1778 (Fed. Cir. 2025) (slip op.)	☐
	13	De Jesus et al., Distributed Check Processing in a Check 21 Environment: An educational overview of the opportunities and challenges associated with implementing distributed check imaging and processing solutions, 2004 Panini North America, Nov. 2004 ("Panini")	☐
	14	IPR2019-00815, Decision Denying Institution (August 26, 2019)	☐
	15	IPR2019-01081, Final Written Decision (January 11, 2021)	☐
	16	IPR2019-01082, Final Written Decision (November 24, 2020)	☐
	17	IPR2019-01083, Final Written Decision (November 24, 2021)	☐
	18	IPR2020-00090, Institution Decision (May 11, 2020)	☐
	19	IPR2020-00090, Termination Settlement (February 12, 2021)	☐
	20	IPR2020-00091, Institution Decision (May 11, 2020)	☐
	21	IPR2020-00091, Termination Settlement (February 12, 2021)	☐

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	Attorney Docket Number	US-0691.12c | 56-10664

	22	IPR2020-00092, Institution Decision (May 11, 2020)	☐
	23	IPR2020-00092, Termination-Settlement (February 12, 2021)	☐
	24	IPR2020-00093, Decision Denying Institution (May 13, 2020)	☐
	25	IPR2020-00094, Decision Denying Institution (May 13, 2020)	☐
	26	IPR2020-00095, Institution Decision (June 2, 2020)	☐
	27	IPR2020-00095, Termination-Settlement (February 12, 2021)	☐
	28	IPR2020-00096, Institution Decision (June 2, 2020)	☐
	29	IPR2020-00096, Termination-Settlement (February 12, 2021)	☐
	30	IPR2020-00097, Institution Decision (June 2, 2020)	☐
	31	IPR2020-00097, Termination-Settlement (February 12, 2021)	☐
	32	IPR2020-00882, Decision Denying Institution (November 6, 2020)	☐

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	33	IPR2020-00975, Decision Denying Institution (November 17, 2020)	☐
	34	IPR2020-00976, Decision Denying Institution (November 24, 2000)	☐
	35	IPR2020-01101, Decision Denying Institution (January 26, 2021)	☐
	36	IPR2020-01516, Petition (August 25, 2020)	☐
	37	IPR2020-01516, Termination Settlement Pre-Institution (February 12, 2021)	☐
	38	IPR2020-01650, Decision Denying Institution (March 9, 2021)	☐
	39	IPR2020-01742, Decision Denying Institution (March 22, 2021)	☐
	40	IPR2021-01070, Final Written Decision (January 19, 2023)	☐
	41	IPR2021-01070, USAA v. PNC, Nos. 2023-2124, 2023-2125 (Fed. Cir. 2025) (slip op.)	☐
	42	IPR2021-01071, Decision Denying Institution (January 20, 2022)	☐
	43	IPR2021-01073, Final Written Decision (January 19, 2023)	☐

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	44	IPR2021-01073, USAA v. PNC, Nos. 2023-2124, 2023-2125 (Fed. Cir. 2025) (slip op.)	☐
	45	IPR2021-01074, Decision Denying Institution (January 20, 2022)	☐
	46	IPR2021-01076, Decision Denying Institution (January 24, 2022)	☐
	47	IPR2021-01077, Final Written Decision (January 20, 2023)	☐
	48	IPR2021-01077, USAA v. PNC, No. 2023-1920 (Fed. Cir. 2025) (slip op.)	☐
	49	IPR2021-01381, Decision Denying Institution (March 2, 2022)	☐
	50	IPR2021-01399, Decision Denying Institution (March 7, 2022)	☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☐ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

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SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-10-17
Name/Print	Christopher R. Abidin	Registration Number	74742

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	1	IPR2022-00049, Decision Denying Institution (April 27, 2022)	☐
	2	IPR2022-00050, Decision Denying Institution (May 11, 2022)	☐
	3	IPR2022-00075, Final Written Decision (June 9, 2023)	☐
	4	IPR2022-00075, USAA v. PNC, No. 2023-2244 (Fed. Cir. 2025) (slip op.)	☐
	5	IPR2022-00076, Final Written Decision (May 10, 2023)	☐
	6	IPR2022-00076, USAA v. PNC, Nos. 2023-2171, 2023-2172 (Fed. Cir. 2025) (slip op.)	☐
	7	IPR2022-01593, Institution Decision (June 14, 2023)	☐
	8	IPR2022-01593, Termination-Settlement (October 11, 2023)	☐
	9	IPR2023-00143, Decision Denying Institution (May 16, 2023)	☐
	10	IPR2023-00144, Decision Denying Institution (May 16, 2023)	☐
	11	IPR2023-00183, Institution Decision (May 18, 2023)	☐

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	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	12	IPR2023-00183, Termination-Settlement (October 13, 2023)	☐
	13	IPR2023-00184, Decision Denying Institution (May 18, 2023)	☐
	14	IPR2023-00829, Petition (April 13, 2023)	☐
	15	IPR2023-00829, Termination Settlement Pre-Institution (October 12, 2023)	☐
	16	IPR2023-01326, Petition (August 16, 2023)	☐
	17	IPR2023-01326, Terminated Settlement Pre-Institution (October 13, 2023)	☐
	18	IPR2025-01326, Petition (July 30, 2025)	☐
	19	IPR2025-01356, Petition (August 5, 2025)	☐
	20	L. H. Yeo & A. Zaslavsky, Submission of Transactions from Mobile Workstations in a Cooperative Multidatabase Processing Environment, 14th International Conference on Distributed Computing Systems, 372–379 (1994)	☐
	21	Patel, Kunur, "How Mobile Technology is Changing Banking's Future", AdAge (September 21, 2009)	☐
	22	Reto Meier, Professional AndroidTM Application Development, Wiley Publishing (June 25, 2008)	☒

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	Attorney Docket Number	US-0691.12c | 56-10664

	23	Specifications for Electronic Exchange of Check and Image Data, DSTU X9.37 (Mar. 31, 2003)	☐
	24	Stellin, Susan, "Bank Will Allow Customers to Deposit Checks by iPhone", New York Times (August 9, 2009)	☐
	25	Vikram Goyal, Pro Java ME MMAPI: Mobile Media API for Java Micro Edition, Apress (June 14, 2006)	☒

If you wish to add additional non-patent literature document citation information, please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered and whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☐ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☒ No IDS size fee is required under 37 CFR 1.17(v) at this time.

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(1).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-10-17
Name/Print	Christopher R. Abidin	Registration Number	74742

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

DECLARATION OF SIMON CRITCHLEY

I, Simon Critchley, pursuant to 28 U.S.C. § 1746, hereby declare as follows:

1. I am a Translator at TransPerfect, Inc.

2. I submit this declaration to certify the accuracy of the English translation of WO 2005/043857 A1.

3. My statements are based on personal knowledge and my review of WO 2005/043857 A1 and its Spanish to English translation. If called as a witness about the facts contained in these statements, I could testify competently based on such personal knowledge and the investigation I have conducted.

4. Attached as Exhibit A is a true and accurate copy of WO 2005/043857 A1.

5. Attached as Exhibit B is a true and accurate copy of an English translation of WO 2005/043857 A1 ("WO 2005/043857 A1 Translation").

6. WO 2005/043857 A1 Translation is a true and accurate translation of WO 2005/043857 A1 from Spanish to English.

7. All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true. Further, I am aware that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001. I declare under penalty of perjury that the foregoing is true and correct.

8. I also understand that by submitting this declaration I may be asked to appear for a deposition asking me questions limited to the material in my declaration. With my signature below, I agree to make reasonable efforts to make myself available for such a deposition at a reasonable place and time of my choosing.

* * *

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on May 5, 2021, at Puerto Escondido, Oaxaca, Mexico.



Simon Critchley

EXHIBIT A

(12) SOLICITUD INTERNACIONAL PUBLICADA EN VIRTUD DEL TRATADO DE COOPERACIÓN EN MATERIA DE PATENTES (PCT)

(19) Organización Mundial de la Propiedad Intelectual
Oficina internacional

(43) Fecha de publicación internacional
12 de Mayo de 2005 (12.05.2005)

PCT

(10) Número de Publicación Internacional
WO 2005/043857 A1

(51) Clasificación Internacional de Patentes[7]: H04L 29/00

(21) Número de la solicitud internacional:
PCT/ES2003/000558

(22) Fecha de presentación internacional:
30 de Octubre de 2003 (30.10.2003)

(25) Idioma de presentación: español

(26) Idioma de publicación: español

(71) Solicitantes *(para todos los Estados designados salvo US)*: **BANKINTER S.A.** [ES/ES]; P°de la Castellana, 29, E-28032 Madrid (ES). **RETEVISION MOVIL, S.A.** [ES/ES]; Avda. de Bruselas 26, E-28100 Alcobendas (ES).

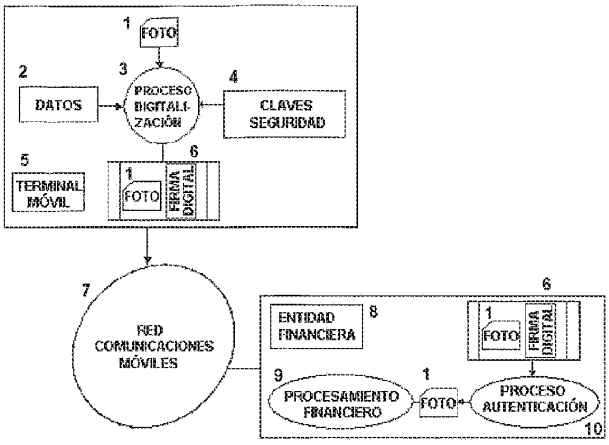
(72) Inventores; e

(75) Inventores/Solicitantes *(para US solamente)*: **RAMOS GARCIA-VERDUGO, Macarena** [ES/ES]; Castellana, 29, E-28032 Madrid (ES). **FERNANDEZ HERMOSILLA, Pilar** [ES/ES]; Castellana, 29, E-28032 Madrid (ES). **OLSON MAICAS, Carlos Alexis** [ES/ES]; Castellana, 29, E-28032 MADRID (ES). **BLANCO BEZANILLA, Olga** [ES/ES]; Avda. de Bruselas, 26, E-28100 Alcobendas (ES). **RODRIGUEZ DIAZ-PAVON, Luis** [ES/ES]; Avda. de Bruselas, 26, E-28100 ALCOBENDAS (ES). **MASO BESGA, Alvaro** [ES/ES]; Avda.de Bruselas, 26, E-28100 ALCOBENDAS (ES).

[Continúa en la página siguiente]

(54) Title: METHOD FOR THE TRANSMISSION, AUTHENTICATION AND AUTOMATIC PROCESSING OF DIGITISED DOCUMENTS

(54) Título: MÉTODO DE TRANSMISIÓN, AUTENTICACIÓN Y PROCESAMIENTO AUTÓMATICO DE DOCUMENTOS DIGITALIZADOS



1 PHOTO
2 DATA
3 DIGITISATION PROCESS
4 SECURITY KEYS
5 MOBILE TERMINAL
6 DIGITAL SIGNATURE
7 MOBILE COMMUNICATION NETWORK
8 FINANCIAL INSTITUTION
9 FINANCIAL PROCESSING
10 AUTHENTICATION PROCESS

(57) Abstract: The invention relates to a method for the transmission, authentication and automatic processing of digitised documents in a single session, using a mobile device which is provided with the technological characteristics necessary for the aforementioned processes to be performed. The inventive method also comprises the recognition, verification and electronic processing of the information received by the receiving entity, which is incorporated automatically into the standard processing applied to the above-mentioned document(s). The method is particularly suitable for authenticating, transmitting and automatically processing financial and non-financial documents, such as bank cheques.

(57) Resumen: Método de transmisión, autenticación y procesamiento automático de documentos digitalizados, en una sóla sesión, por medio de un dispositivo móvil dotado de las características tecnológicas necesarias para el desarrollo de los procesos anteriormente referidos. Este método incluye asimismo el reconocimiento, verificación y tratamiento electrónico de la información recibida por parte de la entidad receptora a la que se incorpora de manera automática al procesamiento habitual

[Continúa en la página siguiente]

WO 2005/043857 A1

(74) **Mandatario: URIZAR ANASAGASTI, Jesús, Mª**; Pº de la Castellana, 72-1º, E-28046 Madrid (ES).

(81) **Estados designados** *(nacional)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Estados designados** *(regional)*: patente ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), patente euroasiática (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), patente europea (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), patente OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaración según la Regla 4.17:

— *sobre la calidad de inventor (Regla 4.17(iv)) sólo para US*

Publicada:

— *con informe de búsqueda internacional*

Para códigos de dos letras y otras abreviaturas, véase la sección "Guidance Notes on Codes and Abbreviations" que aparece al principio de cada número regular de la Gaceta del PCT.

que sea objeto el/los documentos referidos. Este método se aplica particularmente para autenticar, transmitir y procesar automáticamente documentos financieros y no financieros, como por ejemplo cheques bancarios.

DESCRIPCIÓN

Método de transmisión, autenticación y procesamiento automático de documentos digitalizados.

Campo de la invención.

La presente invención, como su propio título indica, se refiere a un método para el procesamiento y la admisión de documentos, como por ejemplo cheques bancarios, con garantía de la autenticación del emisor y del propio documento, utilizando para su desarrollo medios electrónicos, a través de un dispositivo móvil capaz de capturar y enviar imágenes a través de una conexión a Internet.

Antecedentes de la invención.

Los procesos de banca electrónica conllevan el empleo de técnicas de transmisión de datos digitales por medios electrónicos y su tratamiento por parte de la entidad financiera. En algunos casos, como puede ser la emisión y cobro de recibos a través de Internet se han establecido estándares que tipifican

y normalizan los ficheros a enviar por el usuario a dicha entidad. No obstante no se ha avanzado en aquellos supuestos en los que las remesas son de, por ejemplo, cheques bancarios, siendo en estos casos necesaria la presencia o el envío de los documentos físicos a la oficina bancaria correspondiente para su proceso, ya sea de forma manual o a través de terminales lectores que capturan ciertos datos de los documentos reales. No se tiene constancia de un sistema de teleproceso que evite la presencia y guarda del documento en la entidad receptora, de forma tal que permita acelerar sustancialmente el proceso de validación del documento y también su almacenamiento por medios electrónicos, con las consiguientes ventajas de rapidez en el proceso y capacidad de almacenamiento de los documentos.

La posibilidad de efectuar pagos o cobros u otros movimientos en una cuenta bancaria utilizando un teléfono u otro terminal móvil como un PDA se ha descrito en diversos documentos, entre los que destacamos los siguientes: DE10114237, JP2002197399, JP2001297198, WO9847116, WO9718653, WO9613814, WO9302424, EP0785534.

También es conocido el documento JP2002140499, que describe un sistema para ejecutar varias funciones en tiempo real a través de un teléfono portátil conectado a Internet, donde despliega menús y formularios de una entidad para realizar a través de ellos diversas funciones relacionadas con los negocios.

El documento FR2817107 describe un procedimiento de firma electrónica efectuado a través de un teléfono móvil para permitir así efectuar operaciones financieras a su usuario. El documento EP0247788 se refiere a un sistema de almacenamiento y recuperación de imágenes de un objeto, básicamente la cara del usuario, para mostrarlas más tarde en una pantalla como medio de autenticación de tarjetas de crédito o similares.

En el documento WO9736254 se describe un sistema automático de tratamiento de cheques que incluye un dispositivo de entrada de datos relativos a la cuenta corriente y al importe y un medio de captación de una imagen digitalizada del anverso del

cheque que es enviada electrónicamente a través de un ordenador.

En resumen, se han descrito metodologías de tratamiento electrónico de documentos y demás información bancaria, pero en ninguna de ellas se emplea la imagen digital del documento para su almacenamiento en sistemas informáticos ni, conjuntamente con los anteriores, medios de emisión de datos por parte del usuario y su transmisión por medio de un teléfono móvil o un equipo portátil similar.

Descripción de la invención.

La presente invención se aplica a la admisión de documentos, por ejemplo documentos bancarios o financieros y preferentemente a la validación e ingreso en la cuenta existente en una entidad bancaria de cheques por parte de un usuario empleando un dispositivo móvil con cámara incorporada, capaz de capturar y transmitir imágenes digitales, además de realizar las operaciones habituales de telefonía.

El método objeto de la presente invención se desarrolla en una sesión interactiva efectuada en tiempo real, durante la cual el usuario utiliza su teléfono móvil como medio de comunicación y transmisión de un documento a la entidad receptora del mismo, la cual lo almacena, procesa y en su caso valida de forma automática, comunicando al usuario su conformidad o no con la operación realizada. En este proceso se sigue la siguiente metodología:

a) La identificación del usuario que abre una sesión interactiva con la entidad receptora a través del operador de comunicaciones móviles.

b) La introducción de diversos datos de reconocimiento del usuario, consistentes en claves de seguridad para su identificación y autenticación, pudiendo éstas ser un número secreto, un número de teléfono asociado y su matrícula (IMEI), así como datos asociados al propio documento, como por ejemplo, el importe y/o número del documento.

c) La captación de al menos una imagen digital del documento.

d) El cifrado y la certificación digital de los datos y/o imágenes capturadas en los puntos anteriores.

e) La transmisión de la imagen digital y de los datos de reconocimiento, una vez cifrados, a la entidad que ha de aceptar el documento.

f) La visualización por parte del usuario de la imagen digital de forma inmediata.

g) El reconocimiento, verificación y el tratamiento y procesamiento electrónico de la información recibida por parte de dicha entidad.

Según una importante característica de la presente invención tanto la captación de imágenes, como introducción de datos, cifrado de los mismos y transmisión de datos e imágenes y demás operaciones descritas en los apartados a),b),c), d) y e) se realizan con un dispositivo móvil con cámara digital incorporada, capaz de capturar y transmitir imágenes digitales, además de las operaciones habituales de telefonía.

Los datos empleados para reconocimiento del usuario, consisten en aquellos que son propios del operador de comunicaciones móviles, como pueden ser: el número del teléfono móvil, el número del dispositivo móvil, y opcionalmente un sistema de geolocalización y los que son propios de la entidad receptora, como pueden ser, unas claves de autenticación consistentes en un identificativo de usuario y contraseña, un número secreto en cualesquiera de sus formatos. La unión de todos estos elementos, lógicos y físicos, implementa un mecanismo de seguridad novedoso por la combinación de elementos de identificación y autenticación propios de la entidad receptora y del operador de comunicaciones móviles.

Durante todo el proceso existe una comunicación constante entre el usuario y la entidad financiera a través de la operadora de comunicaciones móviles.

Con este sistema se logra una mayor sencillez, rapidez y seguridad en el proceso de admisión de documentos y efectos bancarios y particularmente en el ingreso de cheques, desplazando la tradicional lectora de cheques por un dispositivo móvil

multipropósito. El procesamiento inmediato de la información transmitida por este sistema y su tratamiento electrónico permite la inmediata disponibilidad en cuenta por parte del usuario y la eliminación de mecanización manual por parte de la entidad, que ve así reducida la mano de obra necesaria ya que el proceso de truncamiento se efectúa por dispositivos remotos ajenos a la entidad financiera. El usuario de este servicio evita desplazamientos innecesarios a la oficina bancaria para presentación de sus documentos al cobro, y la visualización inmediata de la imagen en su cuenta. En general este sistema facilitará la implantación de la banca electrónica para efectuar las gestiones a las que se destine.

Para la mejor comprensión de cuanto queda descrito en la presente memoria se acompañan unos dibujos en los que a título de ejemplo se representa un caso práctico de realización según el método aquí preconizado, en dichos planos:

Descripción de las figuras.

La figura 1 muestra esquemáticamente el desarrollo del método de autenticación y transmisión de documentos, objeto de esta invención.

La figura 2 muestra los medios habituales empleados en este método de autenticación.

Realización preferente de la invención.

Tal y como se observa en la figura 1, el método de admisión de documentos y efectos bancarios con garantía de origen, esto es, identificación y autenticación del emisor de los documentos requiere el empleo de un equipo móvil por parte del usuario del servicio, un proveedor de servicios de comunicaciones móviles y también un equipo informático en la entidad suministradora del servicio al usuario.

El equipo necesario por parte del usuario ha de permitirle:

a) La identificación del usuario a efectos de lo cual, el usuario, abre una aplicación informática en el teléfono móvil en la cual se establece una

sesión interactiva con la entidad receptora a través del operador de comunicaciones móviles.

b) La introducción por parte del usuario de diversos datos para su reconocimiento, consistentes en usuario y contraseña y selección de la empresa beneficiaria.

c) Identificación del dispositivo en relación con el usuario, comprobación del número de teléfono asociado y su matrícula (IMEI).

d) La captación de la imagen digital del anverso y del reverso del documento.

e) La captación de datos asociada al documento, como por ejemplo, el importe y el número de cheque.

f) El cifrado y la certificación digital de los datos y/o imágenes capturadas en los puntos anteriores.

g) La transmisión de la imagen digital y de los datos de reconocimiento, una vez cifrados, a la entidad que ha de aceptar el documento.

El equipo móvil que efectúa los procesos de captura, digitalización y procesamiento iniciales consiste en un terminal móvil telefónico dotado de las características y funcionalidades necesarias para tal fin, particularmente un teléfono móvil con cámara y capacidad de procesamiento.

Por su parte, en la entidad que presta el servicio son necesarios unos medios de reconocimiento, verificación y tratamiento electrónico de la información enviada por el usuario. Estos medios son básicamente un equipo informático conectado a Internet, que dispone de un sistema de reconocimiento óptico (OCR), un sistema de autenticación de claves y un medio de transmisión de datos al sistema de procesamiento de documentos de la entidad. La entidad receptora pone a disposición del usuario una imagen digital del documento, en su cuenta bancaria y procesa por los medios habituales (sistemas de truncamiento) el documento que esta tratando.

El nexo de comunicación entre cada usuario y la entidad consiste en una red de telecomunicaciones de telefonía móvil, por ejemplo una red GSM/GPRS o

cualquier tecnología futura con las capacidades tecnológicas adaptadas a las demandas presentes y futuras del método de referencia.

En una realización preferencial este método se aplica a la autenticación del beneficiario del cheque bancario, cuyo documento original es digitalizado con un dispositivo móvil que incorpora una cámara digital capaz de obtener una fotografía digital del mismo, por una o por ambas caras. A través del teclado el usuario introduce los datos identificativos anteriormente referidos, como el importe del cheque y todos aquellos datos y claves necesarias para la operatividad del sistema, procediendo a su envío. Una vez cifrado el mensaje y acompañado de una certificación digital, a través de la red móvil (GSM, GPRS o cualquier tecnología futura) de una compañía operadora de telecomunicaciones. La entidad receptora del mensaje procede a su validación y cifrado, obteniendo finalmente una fotografía digital del cheque y una serie de datos que le permiten procesar de forma automática el ingreso del referido cheque en la cuenta del usuario del servicio. Finalmente el método prevé la transmisión de un mensaje SMS o

cualquier otro método al usuario indicándole la realización de la operación con éxito o no y en su caso el estado de la operación efectuada, si fue ingresado, rechazado.

REIVINDICACIONES

1.- Método de transmisión, autenticación y procesamiento automático de documentos digitalizados, por ejemplo de documentos financieros y no financieros, **caracterizado** porque comprende las siguientes fases o etapas:

a) La identificación del usuario que abre una sesión interactiva con la entidad receptora a través del operador de comunicaciones móviles.

b) La introducción de diversos datos de reconocimiento del usuario, consistentes en claves de seguridad para su identificación y autenticación, como por ejemplo un número secreto; datos de reconocimiento del dispositivo móvil, pudiendo éstos ser un número de teléfono asociado y su matrícula (IMEI); y también datos asociados al propio documento, como por ejemplo, el importe y/o número del documento.

c) La captación de al menos una imagen digital del documento.

d) El cifrado y la certificación digital de los datos y/o imágenes capturadas en los puntos anteriores.

e) La transmisión de la imagen digital y de los datos de reconocimiento, una vez cifrados, a la entidad que ha de aceptar el documento.

f) La visualización por parte del usuario de la imagen digital de forma inmediata.

g) El reconocimiento, verificación, tratamiento y procesamiento electrónico de la información recibida por parte de dicha entidad.

2.- Método, según la reivindicación 1, **caracterizado** porque tanto la captación de imágenes, como introducción de datos, cifrado de los mismos y transmisión de datos e imágenes y demás operaciones descritas en los apartados a),b),c),d) y e) de la reivindicación 1, se realizan con un dispositivo móvil con cámara digital incorporada, capaz de capturar y transmitir imágenes digitales, además de las operaciones habituales de telefonía.

3.- Método, según las reivindicaciones 1 y 2, **caracterizado** porque los datos empleados para reconocimiento del usuario, consisten en aquellos que son propios del operador de comunicaciones móviles, como pueden ser: el número del teléfono móvil, el número del dispositivo móvil, y opcionalmente un sistema de geolocalización y los que son propios de la entidad receptora, como pueden ser, unas claves de autenticación consistentes en un identificativo de usuario y contraseña, un número secreto en cualesquiera de sus formatos; de forma que la unión de todos estos elementos, lógicos y físicos, implementa un mecanismo de seguridad que es combinación de elementos de identificación y autenticación propios de la entidad receptora y del operador de comunicaciones móviles.

4.- Método, según cualquiera de las reivindicaciones anteriores, **caracterizado** porque se aplica preferencialmente a la validación e ingreso en cuenta de cheques en una entidad bancaria directamente por parte de un usuario desde su teléfono móvil a través de su operador de comunicaciones móviles.

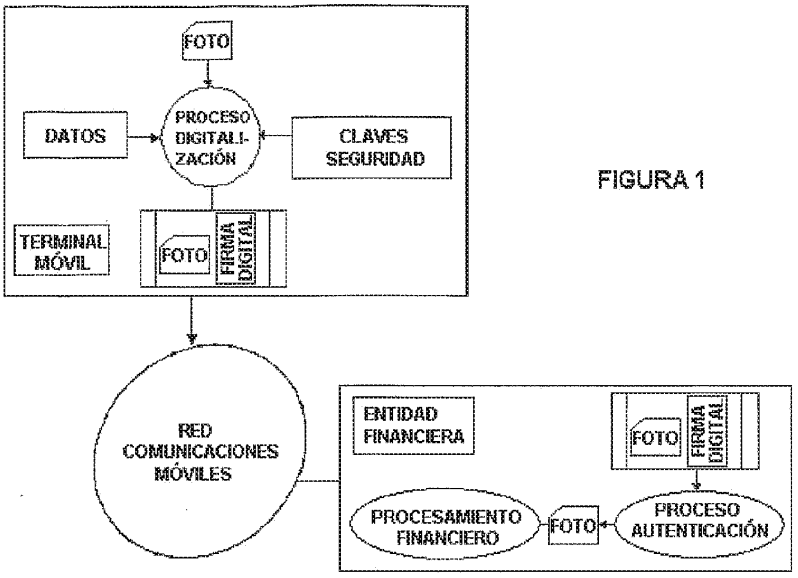


FIGURA 1

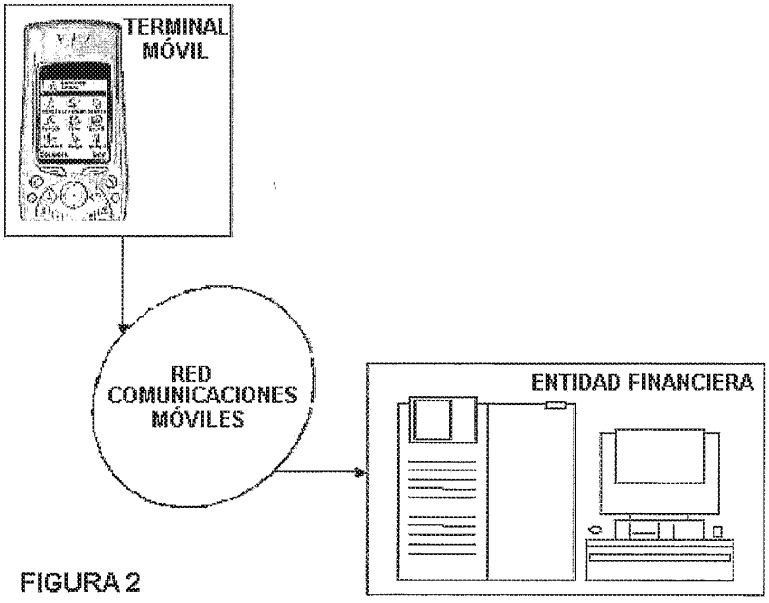


FIGURA 2

HOJA DE SUSTITUCION (REGLA 26)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 03/00558

A. CLASSIFICATION OF SUBJECT MATTER

IPC [7] H04L 29/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC[7] H04L, G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US2003115454 A1(PIIKIVI et al) 19.06.2003, **the whole document**	1-4
A	EP1328103 A1(DREAM TEAM.) 16.07.2003, **column 1, line 1-column 2, line 30**	1,3
A	US6269446 B1(SCHUMACHER et al.) 31.07.2001, **the whole document**	1

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 March 2004 (30.03.2004)	**06 April 2004 (06.04.2004)**
Name and mailing address of the ISA/ **S.P.T.O.** Facsimile No.	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
PCT/ES 03/00558

Patent document cited in search report	Publication date	Patent familiy member(s)	Publication date
US2003115454 A1	19.06.2003	GB2377042 A	31.12.2002
EP1328103 A1	16.07.2003	ITMO20020006 A US2003131244 A EP1328103 A	10.07.2003 10.07.2003 16.07.2003
US6269446 B1	31.07.2001	none	none

Form PCT/ISA/210 (patent family annex) (July 1992)

INFORME DE BÚSQUEDA INTERNACIONAL

Solicitud internacional nº
PCT/ES 03/00558

A. CLASIFICACIÓN DEL OBJETO DE LA SOLICITUD

CIP[7] H04L 29/00
De acuerdo con la Clasificación Internacional de Patentes (CIP) o según la clasificación nacional y la CIP.

B. SECTORES COMPRENDIDOS POR LA BÚSQUEDA

Documentación mínima consultada (sistema de clasificación, seguido de los símbolos de clasificación)

CIP[7] H04L, G06F

Otra documentación consultada, además de la documentación mínima, en la medida en que tales documentos formen parte de los sectores comprendidos por la búsqueda

Bases de datos electrónicas consultadas durante la búsqueda internacional (nombre de la base de datos y, si es posible, términos de búsqueda utilizados)

EPODOC, WPI, INSPEC

C. DOCUMENTOS CONSIDERADOS RELEVANTES

Categoría*	Documentos citados, con indicación, si procede, de las partes relevantes	Relevante para las reivindicaciones nº
X	US2003115454 A1(PIIKIVI et al) 19.06.2003, todo el documento	1-4
A	EP1328103 A1(DREAM TEAM.) 16.07.2003, columna 1, línea 1-columna 2, línea 30	1,3
A	US6269446 B1(SCHUMACHER et al.) 31.07.2001, todo el documento	1

☐ En la continuación del recuadro C se relacionan otros documentos ☒ Los documentos de familia de patentes se indican en el anexo

* Categorías especiales de documentos citados:

"A" documento que define el estado general de la técnica no considerado como particularmente relevante.

"E" solicitud de patente o patente anterior pero publicada en la fecha de presentación internacional o en fecha posterior.

"L" documento que puede plantear dudas sobre una reivindicación de prioridad o que se cita para determinar la fecha de publicación de otra cita o por una razón especial (como la indicada).

"O" documento que se refiere a una divulgación oral, a una utilización, a una exposición o a cualquier otro medio.

"P" documento publicado antes de la fecha de presentación internacional pero con posterioridad a la fecha de prioridad reivindicada.

"T" documento ulterior publicado con posterioridad a la fecha de presentación internacional o de prioridad que no pertenece al estado de la técnica pertinente pero que se cita por permitir la comprensión del principio o teoría que constituye la base de la invención.

"X" documento particularmente relevante; la invención reivindicada no puede considerarse nueva o que implique una actividad inventiva por referencia al documento aisladamente considerado.

"Y" documento particularmente relevante; la invención reivindicada no puede considerarse que implique una actividad inventiva cuando el documento se asocia a otro u otros documentos de la misma naturaleza, cuya combinación resulta evidente para un experto en la materia.

"&" documento que forma parte de la misma familia de patentes.

Fecha en que se ha concluido efectivamente la búsqueda internacional. 30.03.2004	Fecha de expedición del informe de búsqueda internacional 06 ABR 2004 06.04.04
Nombre y dirección postal de la Administración encargada de la búsqueda internacional O.E.P.M. C/Panamá 1, 28071 Madrid, España. nº de fax +34 91 3495304	Funcionario autorizado M. Alvarez Moreno nº de teléfono + 34 91 349 54 95

Formulario PCT/ISA/210 (segunda hoja) (julio 1998)

INFORME DE BÚSQUEDA INTERNACIONAL
Información relativa a miembros de familias de patentes

Solicitud internacional nº
PCT/ES 03/00558

Documento de patente citado en el informe de búsqueda	Fecha de publicación	Miembro(s) de la familia de patentes	Fecha de publicación
US2003115454 A1	19.06.2003	GB2377042 A	31.12.2002
EP1328103 A1	16.07.2003	ITMO20020006 A US2003131244 A EP1328103 A	10.07.2003 10.07.2003 16.07.2003
US6269446 B1	31.07.2001	NINGUNO	NINGUNO

Formulario PCT/ISA/210 (anexo-familias de patentes) (julio 1998)

EXHIBIT B

(12) INTERNATIONAL APPLICATION PUBLISHED BASED ON THE PATENT COOPERATION TREATY (PCT)

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[logo:] WIPO OMPI PCT

(10) International Publication Number
WO 2005/043857 A1

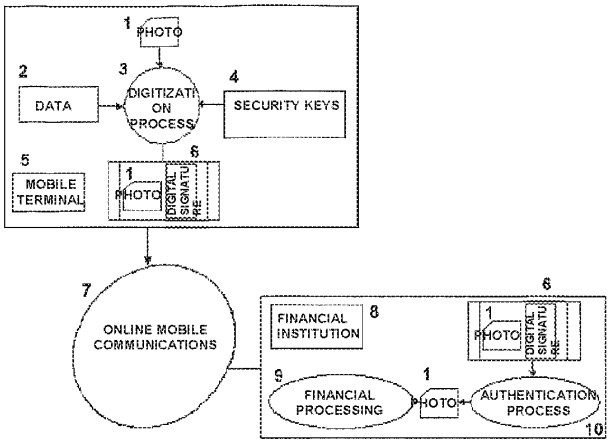
(51) International Patents Classification[7]: H04L 29/00
(21) International application number: PCT/ES2003/000558
(22) International filing date: October 30, 2003 (10.30.2003)
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(72) Inventors; e
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[Continued on next page]

(54) **Title:** METHOD OF TRANSMISSION, AUTHENTICATION, AND AUTOMATIC PROCESSING OF DIGITIZED DOCUMENTS



(57) **Abstract:** The invention relates to a method for the transmission, authentication and automatic processing of digitized documents in a single session, using a mobile device which is provided with the technological characteristics necessary for the aforementioned processes to be performed. The inventive method also comprises the recognition, verification and electronic processing of the information received by the receiving institution, which is incorporated automatically into the standard processing applied to the above-mentioned document(s). The method is particularly suitable for authenticating, transmitting and automatically processing financial and non-financial documents, such as bank checks.

1 PHOTO
2 DATA
3 DIGITIZATION PROCESS
4 SECURITY KEYS
5 MOBILE TERMINAL
6 DIGITAL SIGNATURE
7 MOBILE COMMUNICATION NETWORK
8 FINANCIAL INSTITUTION
9 FINANCIAL PROCESSING
10 AUTHENTICATION PROCESS

[Continued on next page]

WO 2005/043857 A1

(74) **Agent: URIZAR ANASAGASTI, Jesús, María;** P°de la Castellana, 72-1°, E-28046 Madrid (SPAIN).

(81) **States designated** *(domestic):* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **States designated** *(regional):* ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FT, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Statement according to Rule 4.17:
— on inventorship (Rule 4.17(iv)) only for US

Published:
— with international search report

Refer to the "Guidance Notes on Codes and Abbreviations" section for two-letter codes and abbreviations, which appears at the beginning of each regular edition of the PCT Gazette.

which is subject to the referred documents. This method is particularly applicable for authentication, transmission, and automatic processing of financial and non-financial documents, for example, bank checks.

DESCRIPTION

Method for the transmission, authentication and automatic processing of digitized documents.

Field of the Invention.

The present invention, as its title implies, relates to a method for processing and accepting documents, such as, for example, bank checks, with guarantee of authentication of the issuer and the document itself, using electronic media for its implementation through a mobile device capable of capturing and sending images via an Internet connection.

Background of the Invention.

Electronic banking processes involve the use of digital data transmission techniques via electronic means and their processing by the financial institution. In some cases, such as the issuance and collection of receipts via the Internet, standards have been established that define and standardize the slips to be sent by the user to said institution.

However, no advances have been made in cases in which remittances are, for example, bank checks, because in these cases, physical documents must be present or sent to the respective bank branch for processing, whether manually or via reader terminals that capture certain data from the actual documents. We are not aware of a teleprocessing system that avoids the presence and custody of the document by the receiving institution in such a manner that allows the document validation process to be substantially accelerated, as well as its storage by electronic means, with the resulting advantages of speed in the process and storage capacity of the documents.

The possibility of making payments, collections, or other activities in a bank account either by telephone or another mobile terminal, such as a PDA has been described in various documents, among which we can highlight the following: DE10114237, JP2002197399, JP2001297198, WO9847116, WO9718653, WO9613814, WO9302424, EP0785534.

Document JP2002140499 is also known, which describes a system for performing various functions in real-time using a mobile telephone connected to the Internet, which displays an institution's menus and forms in order to perform various business functions through them.

Document FR2817107 describes an electronic signature procedure conducted using a mobile telephone to allow its user to perform financial transactions. Document EP0247788 relates to a system for storing and retrieving images of an object, consisting basically of the user's face, in order to display them later on a screen as a means of authenticating credit cards or similar.

Document WO9736254 describes an automatic check processing system, which includes a device to input data related to the checking account and the amount, as well as means to capture a digitized image of the obverse of the check, which is sent electronically through a computer.

FIFTH THIRD EX1033
Page 843 of 959

In summary, methodologies for electronic processing of documents and other banking information have been described, but none of these use the digital image of the document for storage in computer systems nor, in conjunction with the foregoing, means of emitting data by the user and the transmission thereof via a mobile telephone or similar portable equipment.

Description of the Invention.

The present invention applies to the acceptance of documents, for example, banking or financial documents and preferably to the validation and deposit into the existing account at a banking institution of checks by a user using a mobile device that incorporates a camera, capable of capturing and transmitting digital images, as well as performing the usual telephony operations.

FIFTH THIRD EX1033
Page 844 of 959

The method that is the subject-matter of the present invention is implemented in an interactive session conducted in real time, during which the user uses his mobile phone as a means of communicating and transmitting a document to the institution receiving said document, which it stores, processes, and, if applicable, validates automatically, informing the user of its acceptance or rejection of the transaction performed. In this process the following methodology is followed:

a) Identifying the user, which opens an interactive session with the receiving institution through the mobile communications operator.

b) Entering various user recognition data, consisting of security keys for the user's identification and authentication, which may be a secret number, an associated telephone number and code (IMEI), as well as data associated with the document itself, such as the amount and/or the document number.

c) Capturing at least one digital image of the document.

FIFTH THIRD EX1033
Page 845 of 959

d) Digitally encrypting and certifying the data and/or images captured in the previous points.

e) Transmitting the digital image and the recognition data, once encrypted, to the institution that must accept the document.

f) The immediate displaying of the digital image by the user.

g) Recognizing, verifying, and electronically treating and processing the information received by said institution.

According to an important feature of the present invention, both the capture of images and the entry of data, the encryption thereof and the transmission of data and images and the other operations described in sections a), b), c), d), and e) are performed with a mobile device with incorporated digital camera, able to capture and transmit digital images, as well as the usual telephony operations.

FIFTH THIRD EX1033
Page 846 of 959

The data used for recognizing the user consist of those specific to the mobile communications operator, which may be the mobile telephone number, the mobile device number, and optionally, a global positioning system and those that are specific to the receiving institution, which may be authentication codes consisting of a username and password, or a secret number in any format. The combination of all these logical and physical elements implements an innovative security mechanism by combining identification and authentication elements specific to the receiving institution and to the mobile communication operator.

There is constant communication between the user and the financial institution via the mobile communications operator during the entire process.

This system achieves greater simplicity, speed, and security in the process of accepting bank documents and bills, and particularly in depositing checks, by replacing the traditional check reader with a multi-purpose mobile device. The immediate

FIFTH THIRD EX1033
Page 847 of 959

processing of the information transmitted by this system and the electronic treatment thereof allows the immediate availability in the user's account and the elimination of manual mechanization by the institution, which thus reduces the labor necessary because the truncation process is performed by remote devices external to the financial institution. The user of this service avoids unnecessary trips to the bank branch to present documents for collection, and the immediate display of the image in his account. In general, this system will facilitate the implementation of electronic banking in order to perform the transactions for which it is intended.

For a better understanding of the description provided in this document, certain drawings are included as examples of one embodiment according to the method here recommended, in said drawings:

Description of the Figures.

Figure 1 schematically depicts the implementation of the method of authentication and transmission of documents, the subject-matter of this invention.

Figure 2 depicts the usual means used in this authentication method.

Preferred embodiment of the Invention.

As can be observed in Figure 1, the method of accepting banking documents and bills with guarantee of origin, i.e., identifying and authenticating the issuer of the documents requires the use of a mobile device by the user of the service, a mobile communications services provider and also computer equipment at the institution that provides the service to the user.

The equipment required by the user must allow:

a) Identifying of the user, for which said user opens a computer application in the mobile

telephone in which an interactive session is established with the receiving institution through the mobile communications operator.

b) Entering by the user of different recognition data consisting of username and password and selection of the beneficiary company.

c) Identifying the device in relation to the user, confirmation of the associated telephone number and the code (IMEI).

d) Capturing the digital image of the obverse and the reverse side of the document.

e) Capturing the data associated with the document, such as the amount and the check number.

f) Digitally encrypting and certifying the data and/or images captured in the preceding points.

g) Transmitting the digital image and the recognition data, once encrypted, to the institution that must accept the document.

FIFTH THIRD EX1033
Page 850 of 959

The mobile equipment that performs the initial processes of capturing, digitizing, and processing the image consists of a mobile telephone equipped with the features and functions necessary for said purpose, particularly a mobile telephone with camera and processing capacity.

For its part, the institution that renders the service must have certain electronic means of recognizing, verifying and processing the information sent by the user. These means consist basically of computer equipment connected to the Internet that has an optical character recognition (OCR) system, a code authentication system and means of transmitting data to the institution's document processing system. The receiving institution makes available to the user a digital image of the document in its bank account and processes the document in question by the usual means (truncation systems).

The communication link between each user and the institution consists of a mobile telephone communications network, for example a GSM/GPRS

FIFTH THIRD EX1033
Page 851 of 959

network or any future technology with the technological capabilities adapted to the present and future demands of the method of reference.

In a preferential embodiment, this method applies to authenticating the beneficiary of the bank check, the original document of which is digitized using a mobile device that incorporates a digital camera able to take a digital photograph of one or both sides of said document. Via the keypad the user enters the aforementioned identification data, as well as the amount of the check and all the information and codes necessary for the operability of the system, proceeding with sending it. Once the message is encrypted and accompanied by a digital certification through the mobile network (GSM, GPRS, or any future technology) of a telecommunications operator company. The institution that receives the message proceeds to validate and encrypt it, ultimately obtaining a digital photograph of the check and a data set that allows it to automatically process the deposit of the check in question into the service user's account. Finally, the method

FIFTH THIRD EX1033
Page 852 of 959

provides for the transmission of an SMS message or any other method to the user informing him that the transaction has been completed successfully or not and, if applicable, the status of the transaction performed, i.e., if it was deposited or rejected.

CLAIMS

1- A method for the transmission, authentication and automatic processing of digitized documents, for example, financial and non-financial documents, **characterized** in that it comprises the following phases or steps:

a) Identifying the user, which opens an interactive session with the receiving institution through the mobile communications operator.

b) Entering various user recognition data, consisting of security keys for his identification and authentication, such as for example a secret number; recognition data of the mobile device, which may be an associated telephone number and code (IMEI); as well as data associated with the document itself, such as the amount and/or the document number.

c) Capturing at least one digital image of the document.

d) Digitally encrypting and certifying the data and/or images captured in the preceding points.

e) Transmitting the digital image and the recognition data, once encrypted, to the institution that must accept the document.

f) The immediate displaying of the digital image by the user.

g) Recognizing, verifying, and electronically treating and processing the information received by said institution.

2.- The method according to claim 1, **characterized** in that both the capture of images and the entry of data, encryption thereof and the transmission of data and images and the other operations described in sections a), b), c), d), and e) of claim 1 are performed with a mobile device with incorporated digital camera, able to capture and transmit digital images, as well the usual telephony operations.

FIFTH THIRD EX1033
Page 855 of 959

3.- The method according to claims 1 and 2, **characterized** in that the data used for recognizing the user consist of those that are specific to the mobile communications operator, which may be the mobile telephone number, the mobile device number, and, optionally, a global positioning system and those specific to the receiving institution, which may be authentication codes consisting of a username and password, a secret number in any format, in such a manner that the combination of all these logical and physical elements implements a security mechanism that is a combination of identification and authentication elements specific to the receiving institution and to the mobile communication operator.

4.- The method according to any of the preceding claims, **characterized** in that it is applied preferably to the validation and deposit in a checking account in a banking institution by a user directly from his mobile telephone via the mobile communications operator.

FIFTH THIRD EX1033
Page 856 of 959

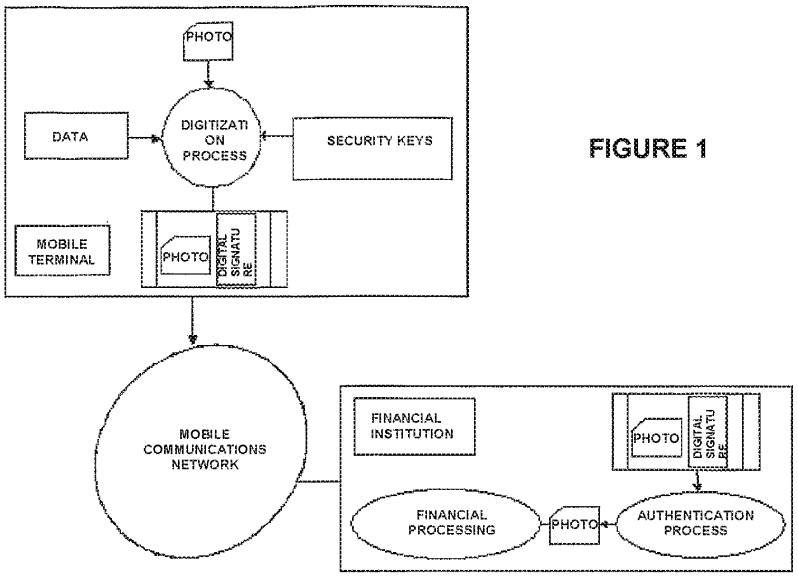


FIGURE 1

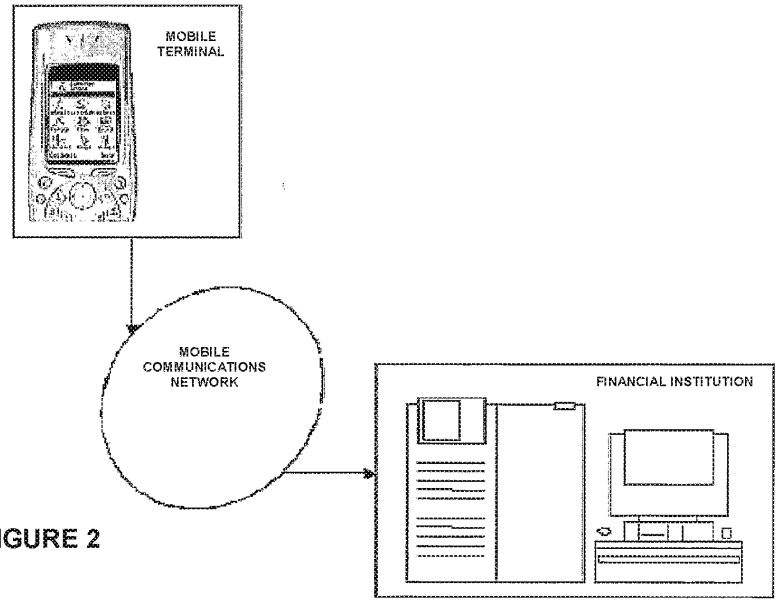


FIGURE 2

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**10/17/2025 06:40:07 PM Z ET**	**US-0691.12c | 56-10664**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	72757799	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	12/02/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E20250GI40326704**	**Christopher Abidin**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
504184	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1801	REQUEST FOR CONTINUED EXAMINATION (RCE) - 1ST REQUEST (SEE 37 CFR 1.114)	1500.00	1	1500.00
			TOTAL AMOUNT:	**$1,500.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/966,097	Filing Date 12/02/2024	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	10/17/2025	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $200 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $600 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/VIOLA D ROGERS/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

197306 7590 11/18/2025

Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

EXAMINER	
RANKINS, WILLIAM E	
ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 11/18/2025

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 56-10664	3179

TITLE OF INVENTION: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1290	$0.00	$0.00	$1290	02/18/2026

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

197306 7590 11/18/2025
Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 56-10664	3179

TITLE OF INVENTION: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1290	$0.00	$0.00	$1290	02/18/2026

EXAMINER	ART UNIT	CLASS-SUBCLASS
RANKINS, WILLIAM E	3694	705-035000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

FIFTH THIRD EX1033
Page 862 of 959

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/02/2024	Michael Patrick Bueche JR.	US-0691.12c | 56-10664	3179

197306 7590 11/18/2025

Carmichael IP, PLLC / USAA
8607 Westwood Center Drive, Suite 270
Tysons, VA 22182

EXAMINER	
RANKINS, WILLIAM E	

ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 11/18/2025

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 11/23)

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/ owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/966,097	Applicant(s) Bueche et al.	
	Examiner WILLIAM E RANKINS	Art Unit 3694	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 10/17/25.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are See Continuation Sheet . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/WILLIAM E RANKINS/
Primary Examiner, Art Unit 3694

Continuation of 3. The allowed claim(s) is/are: 1,7-9,11,16-18,24-26 and 30

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

Status of Claims

Claims 1, 7-9, 11, 16-18, 24-26 and 30 are pending.

Allowable Subject Matter

Claims 1, 7-9, 11, 16-18, 24-26 and 30 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art does not disclose, either alone or in combination, the elements of the independent claims.

The prior art does not disclose, either alone or in combination, the elements of the independent claims including a remote deposit application for a mobile device capturing a live video of a check, presenting an alignment guide to the user, monitoring acceptable criteria for the user of the video/image of the check, transmitting the image for processing, confirming the deposit can go forward after OCR processes further confirm the image and financial information of the check are acceptable, processing the image with OCR and further verifying acceptability of the image, processing the deposit

and updating an account balance of the user. Although each element of the claims may exist in the prior art the claim elements as a whole are not found in the prior art in such a manner that would not constitute improper hindsight upon the part of the Office.

The closest prior art is:

Buentello - Systems And Methods For Live Video Financial Deposit – 10,504,185

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM E RANKINS whose telephone number is (571)270-3465. The examiner can normally be reached on 9-530 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bennett Sigmond can be reached on 303-297-4411. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM E RANKINS/
Primary Examiner, Art Unit 3694

Notice of References Cited	Application/Control No. 18/966,097	Applicant(s)/Patent Under Reexamination Bueche et al.	
	Examiner WILLIAM E RANKINS	Art Unit 3694	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-10504185-B1	2019-12-10	Buentello; Andre Rene	G06Q40/06	1/1
*	B	US-20210360149-A1	2021-11-18	Mukul; Saumya	G06F3/165	1/1
*	C	US-10380993-B1	2019-08-13	Clauer Salyers; Harmony Jane	H04N23/633	1/1
*	D	US-10402790-B1	2019-09-03	Clark; Christopher Nephi	G06Q20/0425	1/1
*	E	US-10380562-B1	2019-08-13	Prasad; Bharat	G06Q20/10	1/1
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
*	N	CA-3080523-A1	2020-09-25	CA	MUKUL S	G06F3/016
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06Q40/02	08/27/2024	WR
G06Q40/02	01/22/2025	WR

US Classification - Searched*			
Class	Subclass	Date	Examiner
705	35	08/27/2024	WR
705	35	01/22/2025	WR

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
PE2E	05/06/2024	WR
Google	08/27/2024	WR
IP.com	8/12/24	WR
PE2E	01/22/2025	WR

/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G06Q	40/02	08/27/2024	WR
705	35	08/27/2024	WR
G06Q	40/02	01/22/2025	WR
705	35	01/22/2025	WR

/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	**Art Unit**
	WILLIAM E RANKINS	3694

CPC						
Symbol					**Type**	**Version**
G06Q	/	20	/	042	F	2013-01-01
G06Q	/	20	/	3223	I	2013-01-01
G06Q	/	40	/	02	I	2013-01-01
G06V	/	30	/	2253	I	2022-01-01
G06Q	/	20	/	108	I	2013-01-01
H04N	/	7	/	183	I	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	29 October 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20251029

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06Q	/	20	/	42	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
705	35

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	29 October 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20251029

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/966,097	Bueche et al.
	Examiner	Art Unit
	WILLIAM E RANKINS	3694

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		10		19		28								
	2	5	11		20		29								
	3		12		21	12	30								
	4		13		22										
	5		14		23										
	6		15	9	24										
2	7	6	16	10	25										
3	8	7	17	11	26										
4	9	8	18		27										

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/WILLIAM E RANKINS/ Primary Examiner, Art Unit 3694	29 October 2025	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office Part of Paper No.: 20251029

Bibliographic Data

Application No: 18/966,097

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /WILLIAM E RANKINS/ (Examiner's Signature) | (Initials)

Title: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/02/2024	705	3694	US-0691.12c | 56-10664
RULE			

APPLICANTS

United Services Automobile Association (USAA), San Antonio, TX, UNITED STATES

INVENTORS

Michael Patrick Bueche JR., San Antonio, TX, UNITED STATES

Bharat Prasad, San Antonio, TX, UNITED STATES

Minya Liang, San Antonio, TX, UNITED STATES

Reynaldo Medina, San Antonio, TX, UNITED STATES

Charles Lee Oakes III, Boerne, TX, UNITED STATES

CONTINUING DATA

This application is a CON of 18593856 03/01/2024 PAT 12159310

18593856 is a CON of 17161235 01/28/2021ABN

17161235 is a CON of 16712182 12/12/2019 PAT 11341465

16712182 is a CON of 16280455 02/20/2019ABN

16280455 is a CON of 15792966 10/25/2017 PAT 10235660

15792966 is a CON of 15392950 12/28/2016 PAT 9818090

15392950 is a CON of 13922686 06/20/2013 PAT 9569756

13922686 is a CON of 12545127 08/21/2009 PAT 8977571

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

12/10/2024

STATE OR COUNTRY

UNITED STATES

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8607 Westwood Center Drive, Suite 270
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UNITED STATES

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$6,900

PTO/SB/08a (01-25)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	18966097
	Filing Date	2024-12-02
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

U.S. PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Inventor of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6145738	A	2000-11-14	Stinson et al.	
	2	6149056	A	2000-11-21	Stinson et al.	
	3	6697091	B1	2004-02-24	Rzepkowski et al.	
	4	6931255	B2	2005-08-16	Mekuria	
	5	6944773	B1	2005-09-13	Abrahams	
	6	7027171	B1	2006-04-11	Watanabe	
	7	7120461	B2	2006-10-10	Cho	
	8	7156311	B2	2007-01-02	Attia et al.	

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

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	9	7792753	B1	2010-09-07	Slater et al.	
	10	7873200	B1	2011-01-18	Oakes, III et al.	
	11	12159310	B1	2024-12-03	Bueche, Jr. et al.	
	12	12211095	B1	2025-01-28	Bueche, Jr. et al.	

If you wish to add additional U.S. Patent citation information, please click the Add button. Add

U.S. PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Inventor or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20040205459	A1	2004-10-14	Green, Brett A.	
	2	20050036665	A1	2005-02-17	Higuchi, Teruyuki	
	3	20050097046	A1	2005-05-05	Singfield, Joy Shantia	
	4	20050100216	A1	2005-05-12	Myers, Gregory et al.	
	5	20050216410	A1	2005-09-29	Davis, Steven et al.	

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

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	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	6	20050281450	A1	2005-12-22	Richardson, Joseph L.	
	7	20060026140	A1	2006-02-02	King et al.	
	8	20060106717	A1	2006-05-18	Randle et al.	
	9	20060152576	A1	2006-07-13	Kiessling et al.	
	10	20060242062	A1	2006-10-26	Peterson et al.	
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	14	20090114716	A1	2009-05-07	Ramachandran	
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	17	20100078472	A1	2010-04-01	Lin et al.	
	18	20100128131	A1	2010-05-27	Tenchio et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	0984410	EP	A1	2000-03-08	Slater et al.		☐
	2	2004023158	JP	A	2004-01-22	Takehara	(Translation)	☒
	3	2006174105	JP	A	2006-06-29	Miyata	(Translation)	☒
	4	0161436	WO	A2	2001-08-23	Acharya et al.		☐
	5	2005043857	WO	A1	2005-05-12	Garcia et al.	(Translation)	☒
	6	2006086768	WO	A2	2006-08-17	Byrne et al.		☐

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	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	A. Adams, N. Felfand, and K. Pulli, "Viewfinder Alignment," Computer Graphics Forum (Eurographics 2008), vol. 27, no. 2, pp. 597-606 (April 2008)	☐
	2	CBM2019-00002, Dismissal and Termination (April 26, 2019)	☐
	3	CBM2019-00002, Petition (November 8, 2018)	☐
	4	CBM2019-00003, Decision Denying Institution (June 3, 2019)	☐
	5	CBM2019-00004, Decision Denying Institution (May 15, 2019)	☐
	6	CBM2019-00005, Decision Denying Institution (June 3, 2019)	☐
	7	CBM2019-00027, Decision Denying Institution (October 1, 2019)	☐
	8	CBM2019-00029, Decision Denying Institution (October 1, 2019)	☐
	9	DCT, MITEK SYSTEMS, INC. v. UNITED SERVICES AUTOMOBILE ASSOCIATION, No. 21-1989 (Fed. Cir. 2022) (slip op.)	☐
	10	DCT, MITEK SYSTEMS, INC. v. UNITED SERVICES AUTOMOBILE ASSOCIATION, No. 23-1687 (Fed. Cir. 2025) (slip op.)	☐

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	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	11	DCT, United Services Automobile Association v. PNC Bank N.A., No. 23-1639 (Fed. Cir. 2025) (slip op.)	☐
	12	DCT, United Services Automobile Association v. PNC Bank N.A., No. 23-1778 (Fed. Cir. 2025) (slip op.)	☐
	13	De Jesus et al., Distributed Check Processing in a Check 21 Environment: An educational overview of the opportunities and challenges associated with implementing distributed check imaging and processing solutions, 2004 Panini North America, Nov. 2004 ("Panini")	☐
	14	IPR2019-00815, Decision Denying Institution (August 26, 2019)	☐
	15	IPR2019-01081, Final Written Decision (January 11, 2021)	☐
	16	IPR2019-01082, Final Written Decision (November 24, 2020)	☐
	17	IPR2019-01083, Final Written Decision (November 24, 2021)	☐
	18	IPR2020-00090, Institution Decision (May 11, 2020)	☐
	19	IPR2020-00090, Termination Settlement (February 12, 2021)	☐
	20	IPR2020-00091, Institution Decision (May 11, 2020)	☐
	21	IPR2020-00091, Termination Settlement (February 12, 2021)	☐

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

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	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	22	IPR2020-00092, Institution Decision (May 11, 2020)	☐
	23	IPR2020-00092, Termination-Settlement (February 12, 2021)	☐
	24	IPR2020-00093, Decision Denying Institution (May 13, 2020)	☐
	25	IPR2020-00094, Decision Denying Institution (May 13, 2020)	☐
	26	IPR2020-00095, Institution Decision (June 2, 2020)	☐
	27	IPR2020-00095, Termination-Settlement (February 12, 2021)	☐
	28	IPR2020-00096, Institution Decision (June 2, 2020)	☐
	29	IPR2020-00096, Termination-Settlement (February 12, 2021)	☐
	30	IPR2020-00097, Institution Decision (June 2, 2020)	☐
	31	IPR2020-00097, Termination-Settlement (February 12, 2021)	☐
	32	IPR2020-00882, Decision Denying Institution (November 6, 2020)	☐

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	33	IPR2020-00975, Decision Denying Institution (November 17, 2020)	☐
	34	IPR2020-00976, Decision Denying Institution (November 24, 2000)	☐
	35	IPR2020-01101, Decision Denying Institution (January 26, 2021)	☐
	36	IPR2020-01516, Petition (August 25, 2020)	☐
	37	IPR2020-01516, Termination Settlement Pre-Institution (February 12, 2021)	☐
	38	IPR2020-01650, Decision Denying Institution (March 9, 2021)	☐
	39	IPR2020-01742, Decision Denying Institution (March 22, 2021)	☐
	40	IPR2021-01070, Final Written Decision (January 19, 2023)	☐
	41	IPR2021-01070, USAA v. PNC, Nos. 2023-2124, 2023-2125 (Fed. Cir. 2025) (slip op.)	☐
	42	IPR2021-01071, Decision Denying Institution (January 20, 2022)	☐
	43	IPR2021-01073, Final Written Decision (January 19, 2023)	☐

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	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

	44	IPR2021-01073, USAA v. PNC, Nos. 2023-2124, 2023-2125 (Fed. Cir. 2025) (slip op.)	☐
	45	IPR2021-01074, Decision Denying Institution (January 20, 2022)	☐
	46	IPR2021-01076, Decision Denying Institution (January 24, 2022)	☐
	47	IPR2021-01077, Final Written Decision (January 20, 2023)	☐
	48	IPR2021-01077, USAA v. PNC, No. 2023-1920 (Fed. Cir. 2025) (slip op.)	☐
	49	IPR2021-01381, Decision Denying Institution (March 2, 2022)	☐
	50	IPR2021-01399, Decision Denying Institution (March 7, 2022)	☐

If you wish to add additional non-patent literature document citation information, please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/WILLIAM E RANKINS/	Date Considered	10/29/2025

*EXAMINER: Initial if reference considered and whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☐ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☒ No IDS size fee is required under 37 CFR 1.17(v) at this time.

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(1).

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☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-10-17
Name/Print	Christopher R. Abidin	Registration Number	74742

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

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	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PC.1.19.25

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.E.R/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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PTO/SB/08a (01-25)
Approved for use through 11/30/2027. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	18966097
Filing Date	2024-12-02
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	William E Rankins
Attorney Docket Number	US-0691.12c | 56-10664

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	Attorney Docket Number	US-0691.12c | 56-10664

	1	IPR2022-00049, Decision Denying Institution (April 27, 2022)	☐
	2	IPR2022-00050, Decision Denying Institution (May 11, 2022)	☐
	3	IPR2022-00075, Final Written Decision (June 9, 2023)	☐
	4	IPR2022-00075, USAA v. PNC, No. 2023-2244 (Fed. Cir. 2025) (slip op.)	☐
	5	IPR2022-00076, Final Written Decision (May 10, 2023)	☐
	6	IPR2022-00076, USAA v. PNC, Nos. 2023-2171, 2023-2172 (Fed. Cir. 2025) (slip op.)	☐
	7	IPR2022-01593, Institution Decision (June 14, 2023)	☐
	8	IPR2022-01593, Termination-Settlement (October 11, 2023)	☐
	9	IPR2023-00143, Decision Denying Institution (May 16, 2023)	☐
	10	IPR2023-00144, Decision Denying Institution (May 16, 2023)	☐
	11	IPR2023-00183, Institution Decision (May 18, 2023)	☐

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	12	IPR2023-00183, Termination-Settlement (October 13, 2023)	☐
	13	IPR2023-00184, Decision Denying Institution (May 18, 2023)	☐
	14	IPR2023-00829, Petition (April 13, 2023)	☐
	15	IPR2023-00829, Termination Settlement Pre-Institution (October 12, 2023)	☐
	16	IPR2023-01326, Petition (August 16, 2023)	☐
	17	IPR2023-01326, Terminated Settlement Pre-Institution (October 13, 2023)	☐
	18	IPR2025-01326, Petition (July 30, 2025)	☐
	19	IPR2025-01356, Petition (August 5, 2025)	☐
	20	L. H. Yeo & A. Zaslavsky, Submission of Transactions from Mobile Workstations in a Cooperative Multidatabase Processing Environment, 14th International Conference on Distributed Computing Systems, 372–379 (1994)	☐
	21	Patel, Kunur, "How Mobile Technology is Changing Banking's Future", AdAge (September 21, 2009)	☐
	22	Reto Meier, Professional AndroidTM Application Development, Wiley Publishing (June 25, 2008)	☒

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	23	Specifications for Electronic Exchange of Check and Image Data, DSTU X9.37 (Mar. 31, 2003)	☐
	24	Stellin, Susan, "Bank Will Allow Customers to Deposit Checks by iPhone", New York Times (August 9, 2009)	☐
	25	Vikram Goyal, Pro Java ME MMAPI: Mobile Media API for Java Micro Edition, Apress (June 14, 2006)	☒

If you wish to add additional non-patent literature document citation information, please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/WILLIAM E RANKINS/	Date Considered	10/29/2025

*EXAMINER: Initial if reference considered and whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	William E Rankins
	Attorney Docket Number	US-0691.12c | 56-10664

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

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☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

☐ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

SIZE FEE ASSERTION

Please see 37 CFR 1.17(v) and the IDS Auto-Load Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

☒ No IDS size fee is required under 37 CFR 1.17(v) at this time.

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(1).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).

☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-10-17
Name/Print	Christopher R. Abidin	Registration Number	74742

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/966,097	**11/18/2025 10:31:55 PM Z ET**	**US-0691.12c | 56-10664**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3179	FILED BY	Christopher Abidin
PATENT CENTER #	73237536	FILING DATE	12/02/2024
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
web85b.pdf	3	Issue Fee Payment (PTO-85B)	58 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
web85b.pdf	7BA948D790346EBAF202EE3536AC01724D2043A74E8EB2453 B0C6D9572ED7A2793389C9C21C2A51E2A5991990A8037C7C D1553FA527312CD5FD844E2021D8C94

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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ISSUE FEE TRANSMITTAL FORM

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
18966097	**12/02/2024**	**Michael Bueche**	**US-0691.12c | 56-10664**

Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Nonprovisional Application under 35 USC 111(a)	DATE DUE	02/18/2026
CONFIRMATION #	3179	ISSUE FEE DUE	$ 1290
EXAMINER	WILLIAM RANKINS	PUBLICATION DUE	$ 0
GROUP ART UNIT	3694	TOTAL FEES DUE	$1290
CLASS - SUBCLASS	705/035000	PREV. PAID FEE	$ 0
ENTITY STATUS	Regular Undiscounted		

1. CHANGE OF CORRESPONDENCE ADDRESS AND/OR INDICATION OF FEE ADDRESS (37 CFR 1.33 & 1.363)

Correspondence Address

CURRENT ADDRESS

Maintenance Fee Address

CURRENT ADDRESS

☐ Change of correspondence address requested,system generated AIA/122-PC form attached

☐ Fee address indication requested, system generatedSB/47-PC form attached

2. ENTITY STATUS

Change in Entity Status

NEW STATUS

3. THE FOLLOWING FEES ARE SUBMITTED

☑ Issue Fee

☑ Publication Fee

4. FEE AUTHORIZATION

☐ I authorize USPTO to apply my previously paid issue fee to the current fees due

☐ The Director is herby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number:

☑ If in addition to the payment of the issue fee amount submitted with this form, there are any discrepencies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number: 504184

5. FIRM AND/OR ATTORNEY NAMES TO BE PRINTED

NOTE: If no name is listed, no name will be printed
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6. ASSIGNEE NAME(S) AND RESIDENCE DATA TO BE PRINTED

NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been

filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a susbstitute for filing an assignment.

United Services Automobile Association (USAA)	San Antonio, TX UNITED STATES	Organization

Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via Patent Center on the date indicated below.

Signature	Name	Registration #	Date
/Christopher R. Abidin/	Christopher Abidin	74742	11/18/2025

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ELECTRONIC PAYMENT RECEIPT

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CUSTOMER #	197306	FILING DATE	12/02/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E2025AHM32297309**	**Christopher Abidin**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
504184	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1501	UTILITY ISSUE FEE	1290.00	1	1290.00
			TOTAL AMOUNT:	**$1,290.00**

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PATENT CENTER #	73237535	FILING DATE	12/02/2024
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-11-18_US-0691-12c_Comments-on-Reasons-for-Allowance.pdf	2	Miscellaneous Incoming Letter	58 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2025-11-18_US-0691-12c_Comments-on-Reasons-for-Allowance.pdf	EBF21C818CDC4EB77D8DEF7DA5CE912D21A241EF4B6EC13 8C8D690F703507FE16A3E7BA31802C3BF9045F369735578954 679E3FDEE7ED65A42ED74B0684CB534

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New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

First Named Inventor: Michael P. Bueche, Jr. Art Unit: 3694

Appln. No.: 18/966,097 Examiner: William E. Rankins

Filed: December 2, 2024 Confirmation No.: 3179

For: SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

* * *

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the Statement of Reasons for Allowance (under the "Allowable Subject Matter" heading at pages 2-3 of the Notice of Allowance dated November 18, 2025), Applicant recognizes that in accordance with M.P.E.P. § 1302.14, the Examiner's reasons for allowance need not set forth all the details as to why the claims are allowed. In the above-referenced application, Applicant does not concede that the Examiner's stated reasons for allowance are the only reasons for which the claims are allowable. The claims may be patentable for other reasons. In addition, Applicant notes that the dependent claims may also be allowable on their own merits and are allowable, for example, on the basis of a sub-combination of the recited features of the dependent claims and their respective base claims.

Applicant submits these comments without acceding to the Office's characterization of alleged prior art at pages 2 to 3 of the Notice of Allowance.

The absence of arguments addressing specific allegations in the Statement of Reasons for Allowance is not intended to be an admission of the accuracy or appropriateness of such allegations.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-4184 (US-0691.12c | 56-10664) any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

Date: November 18, 2025

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/966,097	12/23/2025	12505414	US-0691.12c | 56-10664	3179

197306 7590 12/10/2025

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ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at https://patentcenter.uspto.gov/. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at https://certifiedcopycenter.uspto.gov/index.html. The Certified Copy Center may be reached at (800)972-6382.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Center (https://patentcenter.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

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To Promote the Progress of Science and Useful Arts

The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

Maintenance Fee Notice

If the application for this patent was filed on or after December 12, 1980, maintenance fees are due three years and six months, seven years and six months, and eleven years and six months after the date of this grant, or within a grace period of six months thereafter upon payment of a surcharge as provided by law. The amount, number and timing of the maintenance fees required may be changed by law or regulation. Unless payment of the applicable maintenance fee is received in the United States Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period.

Patent Term Notice

If the application for this patent was filed on or after June 8, 1995, the term of this patent begins on the date on which this patent issues and ends twenty years from the filing date of the application or, if the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121, 365(c), or 386(c), twenty years from the filing date of the earliest such application ("the twenty-year term"), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b), and any extension as provided by 35 U.S.C. 154(b) or 156 or any disclaimer under 35 U.S.C. 253.

If this application was filed prior to June 8, 1995, the term of this patent begins on the date on which this patent issues and ends on the later of seventeen years from the date of the grant of this patent or the twenty-year term set forth above for patents resulting from applications filed on or after June 8, 1995, subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b) and any extension as provided by 35 U.S.C. 156 or any disclaimer under 35 U.S.C. 253.

US012505414B1

(12) **United States Patent**
Bueche, Jr. et al.

(10) **Patent No.: US 12,505,414 B1**
(45) **Date of Patent: Dec. 23, 2025**

(54) **SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING**

(71) Applicant: **United Services Automobile Association (USAA)**, San Antonio, TX (US)

(72) Inventors: **Michael Patrick Bueche, Jr.**, San Antonio, TX (US); **Bharat Prasad**, San Antonio, TX (US); **Minya Liang**, San Antonio, TX (US); **Reynaldo Medina**, San Antonio, TX (US); **Charles Lee Oakes, III**, Boerne, TX (US)

(73) Assignee: **United Services Automobile Association (USAA)**, San Antonio, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **18/966,097**

(22) Filed: **Dec. 2, 2024**

Related U.S. Application Data

(63) Continuation of application No. 18/593,856, filed on Mar. 1, 2024, now Pat. No. 12,159,310, which is a (Continued)

(51) **Int. Cl.**
G06Q 20/42 (2012.01)
G06Q 20/04 (2012.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G06Q 20/042*** (2013.01); ***G06Q 20/108*** (2013.01); ***G06Q 20/3223*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC G06Q 40/02
(Continued)

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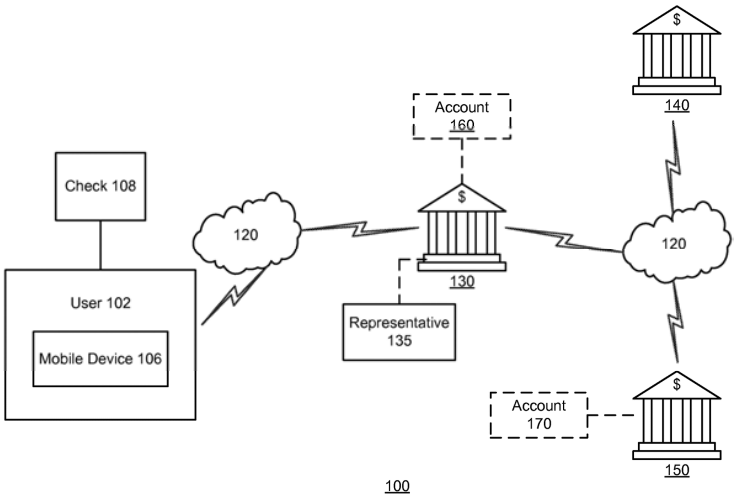
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Primary Examiner — William E Rankins
(74) *Attorney, Agent, or Firm* — Carmichael IP, PLLC

(57) **ABSTRACT**

An image of a check that is in the field of view of a camera is monitored prior to the image of the check being captured. The camera is associated with a mobile device. When the image of the check in the field of view passes monitoring criteria, an image may be taken by the camera and provided from the mobile device to a financial institution. The image capture may be performed automatically as soon as the image of the check is determined to pass the monitoring criteria. The check may be deposited in a user's bank account based on the image. Any technique for sending the image to the financial institution may be used. Feedback may be provided to the user of the camera regarding the image of the check in the field of view.

12 Claims, 8 Drawing Sheets



Related U.S. Application Data

continuation of application No. 17/161,235, filed on Jan. 28, 2021, now abandoned, which is a continuation of application No. 16/712,182, filed on Dec. 12, 2019, now Pat. No. 11,341,465, which is a continuation of application No. 16/280,455, filed on Feb. 20, 2019, now abandoned, which is a continuation of application No. 15/792,966, filed on Oct. 25, 2017, now Pat. No. 10,235,660, which is a continuation of application No. 15/392,950, filed on Dec. 28, 2016, now Pat. No. 9,818,090, which is a continuation of application No. 13/922,686, filed on Jun. 20, 2013, now Pat. No. 9,569,756, which is a continuation of application No. 12/545,127, filed on Aug. 21, 2009, now Pat. No. 8,977,571.

(51) **Int. Cl.**

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G06Q 20/32	(2012.01)
G06Q 40/02	(2023.01)
G06V 30/224	(2022.01)
H04N 7/18	(2006.01)

(52) **U.S. Cl.**

CPC ***G06Q 40/02*** (2013.01); ***G06V 30/2253*** (2022.01); ***H04N 7/183*** (2013.01)

(58) **Field of Classification Search**

USPC 705/35

See application file for complete search history.

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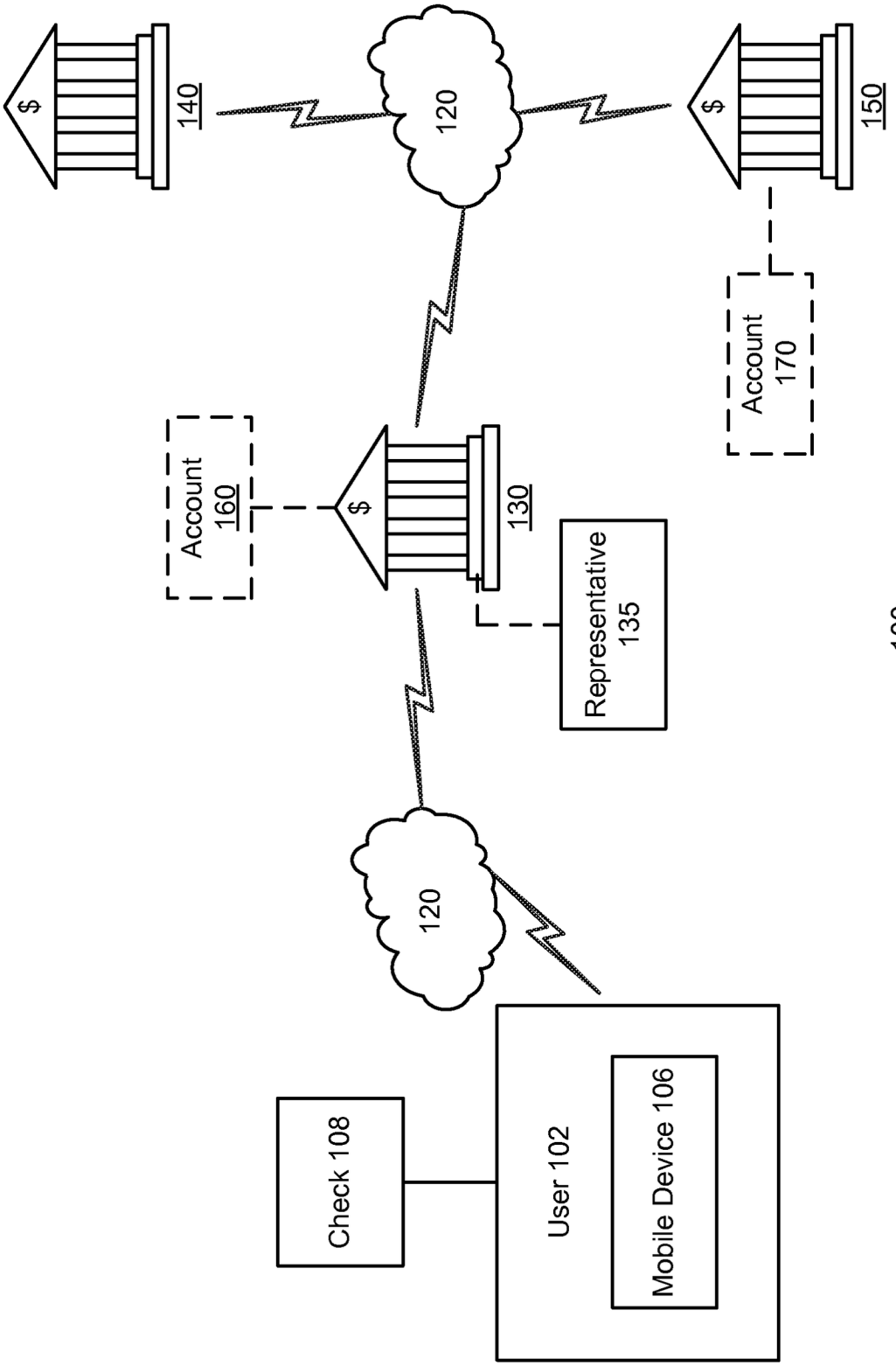

140
120
150
Account 170
Account 160
130
Representative 135
120
Check 108
User 102
Mobile Device 106
100

FIG. 1

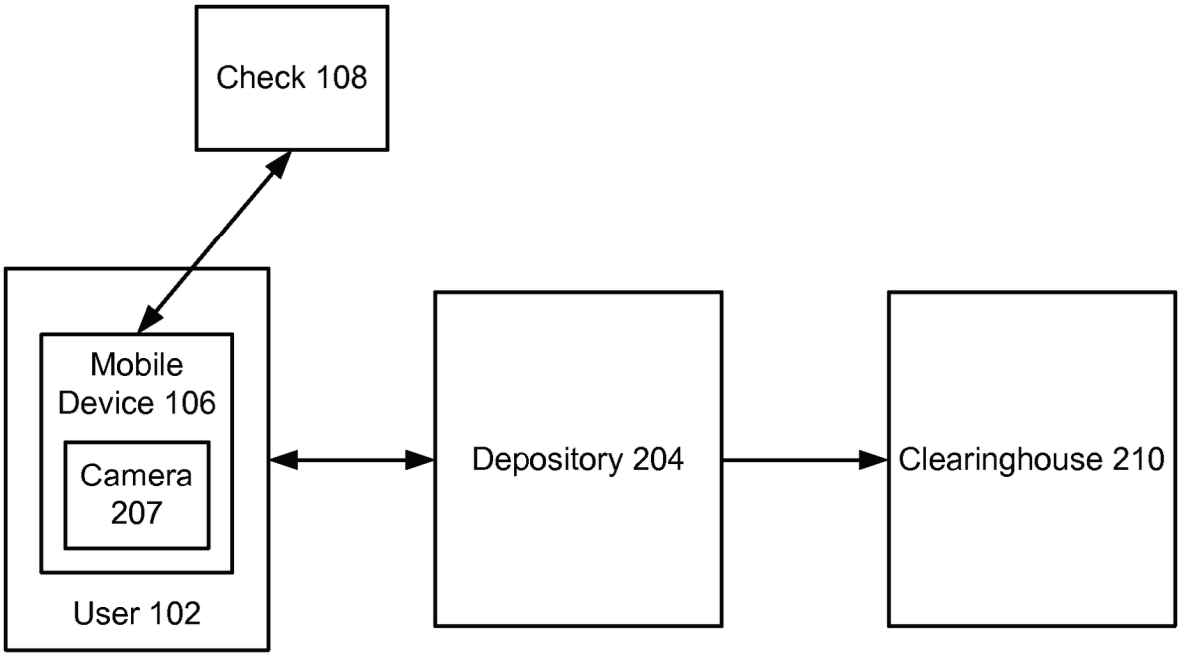

Check 108
Mobile Device 106
Camera 207
User 102
Depository 204
Clearinghouse 210
200

FIG. 2

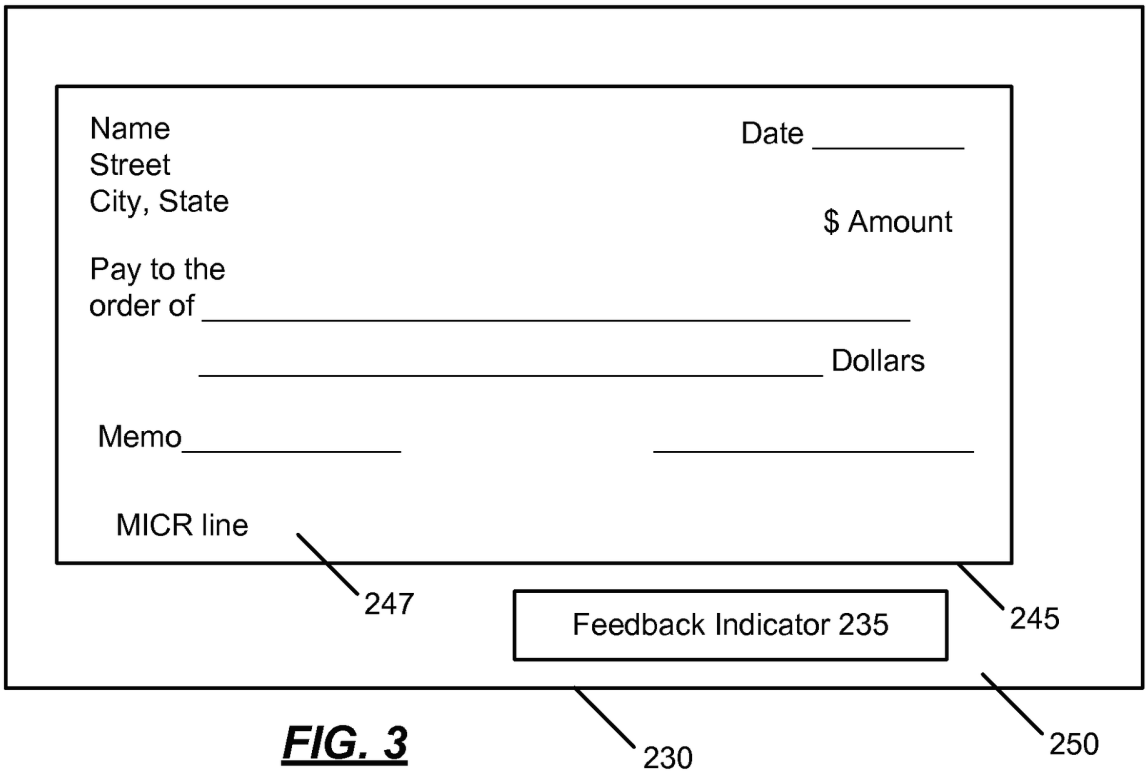

Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
247
245
Feedback Indicator 235
230
250

FIG. 3

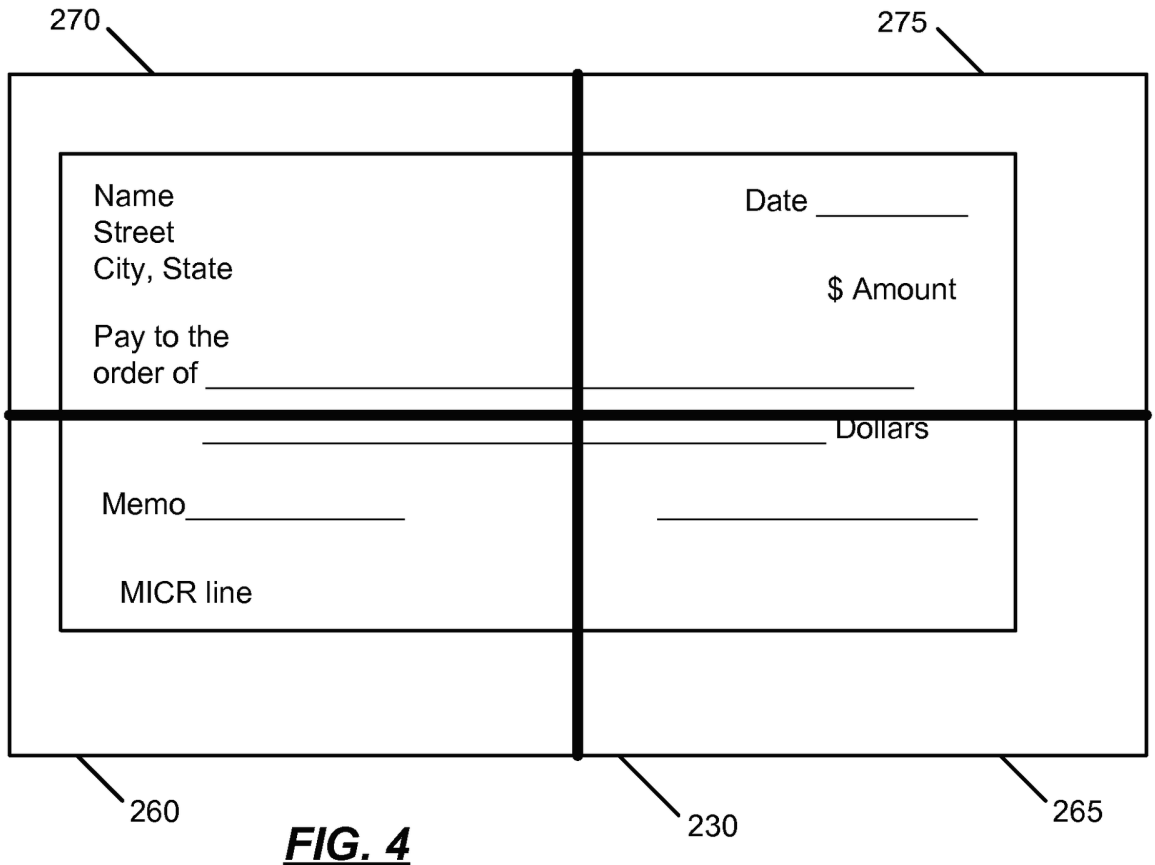
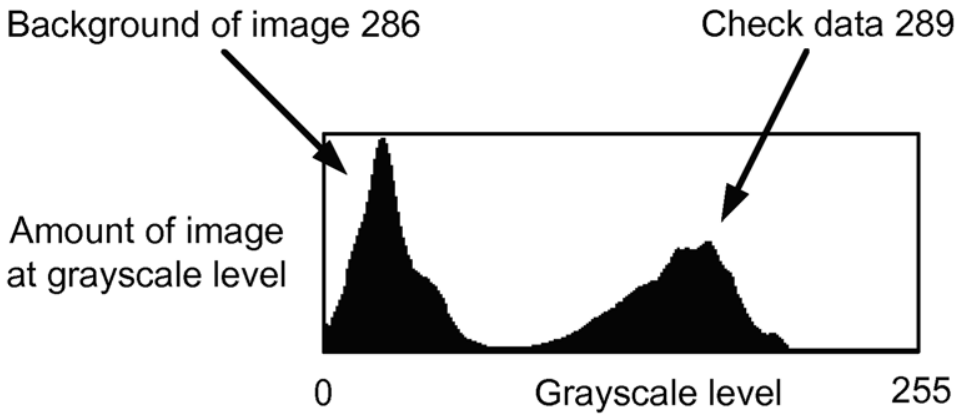
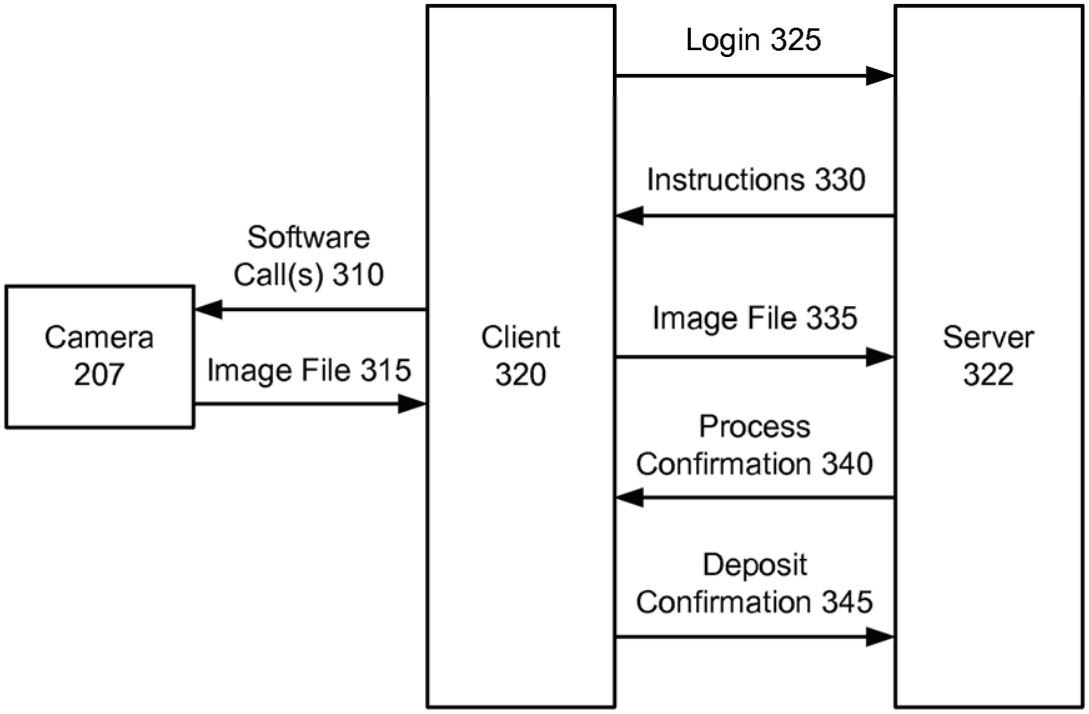

270
275
Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
260
230
265

FIG. 4



280

FIG. 5



300

FIG. 6

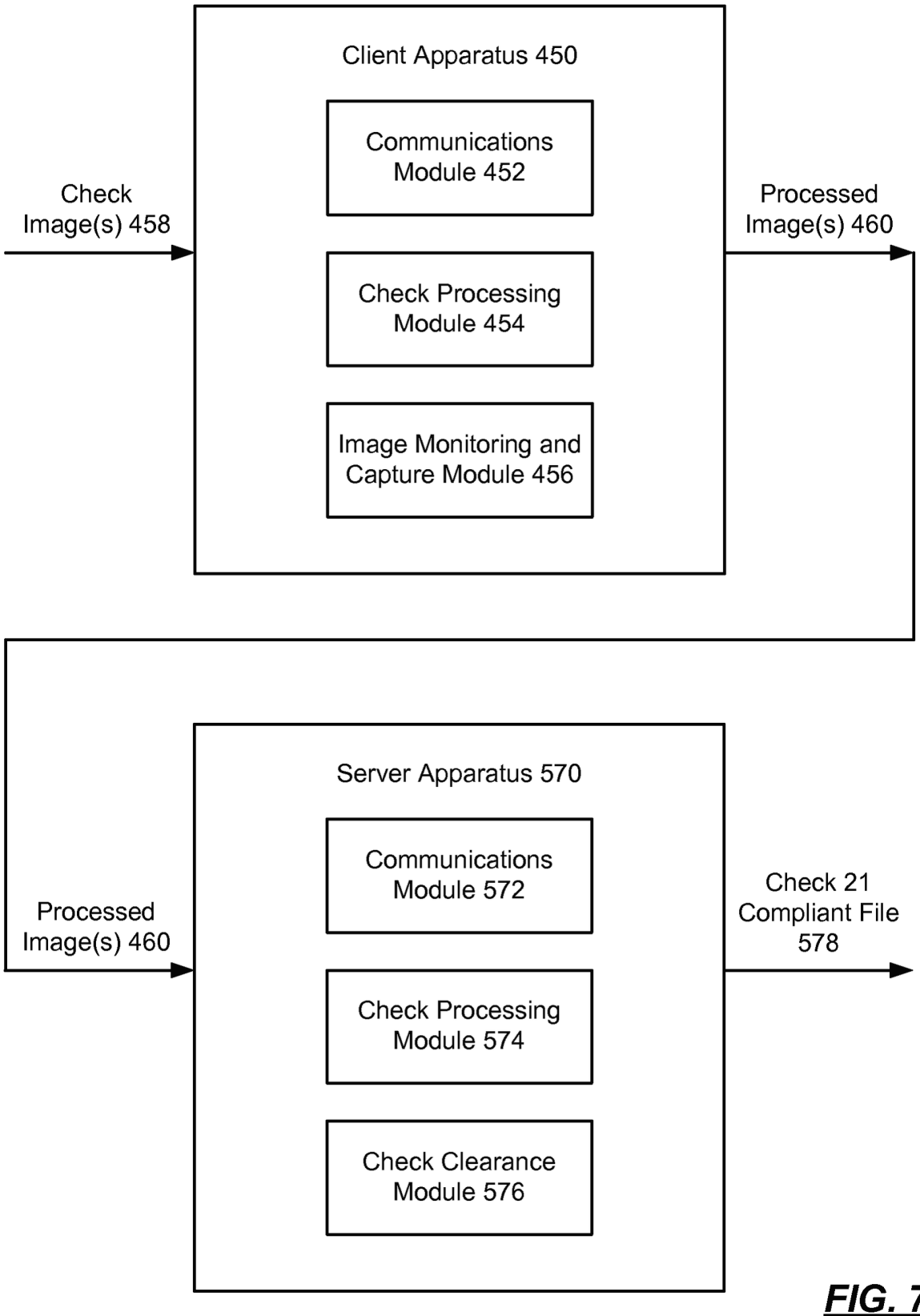

Client Apparatus 450
Communications Module 452
Check Processing Module 454
Image Monitoring and Capture Module 456
Check Image(s) 458
Processed Image(s) 460
Server Apparatus 570
Communications Module 572
Check Processing Module 574
Check Clearance Module 576
Processed Image(s) 460
Check 21 Compliant File 578

FIG. 7

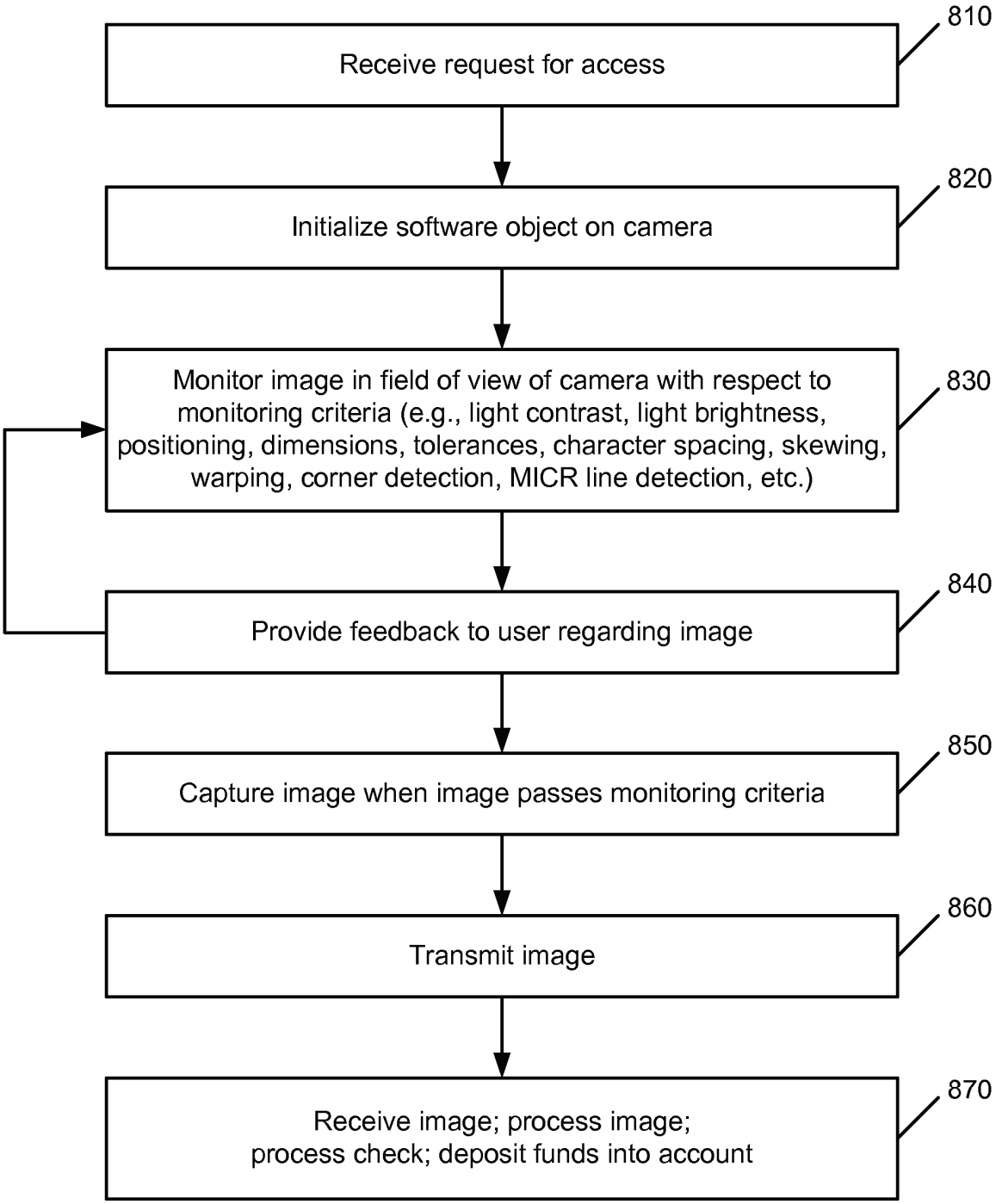

Receive request for access
810
Initialize software object on camera
820
Monitor image in field of view of camera with respect to monitoring criteria (e.g., light contrast, light brightness, positioning, dimensions, tolerances, character spacing, skewing, warping, corner detection, MICR line detection, etc.)
830
Provide feedback to user regarding image
840
Capture image when image passes monitoring criteria
850
Transmit image
860
Receive image; process image; process check; deposit funds into account
870
800

FIG. 8

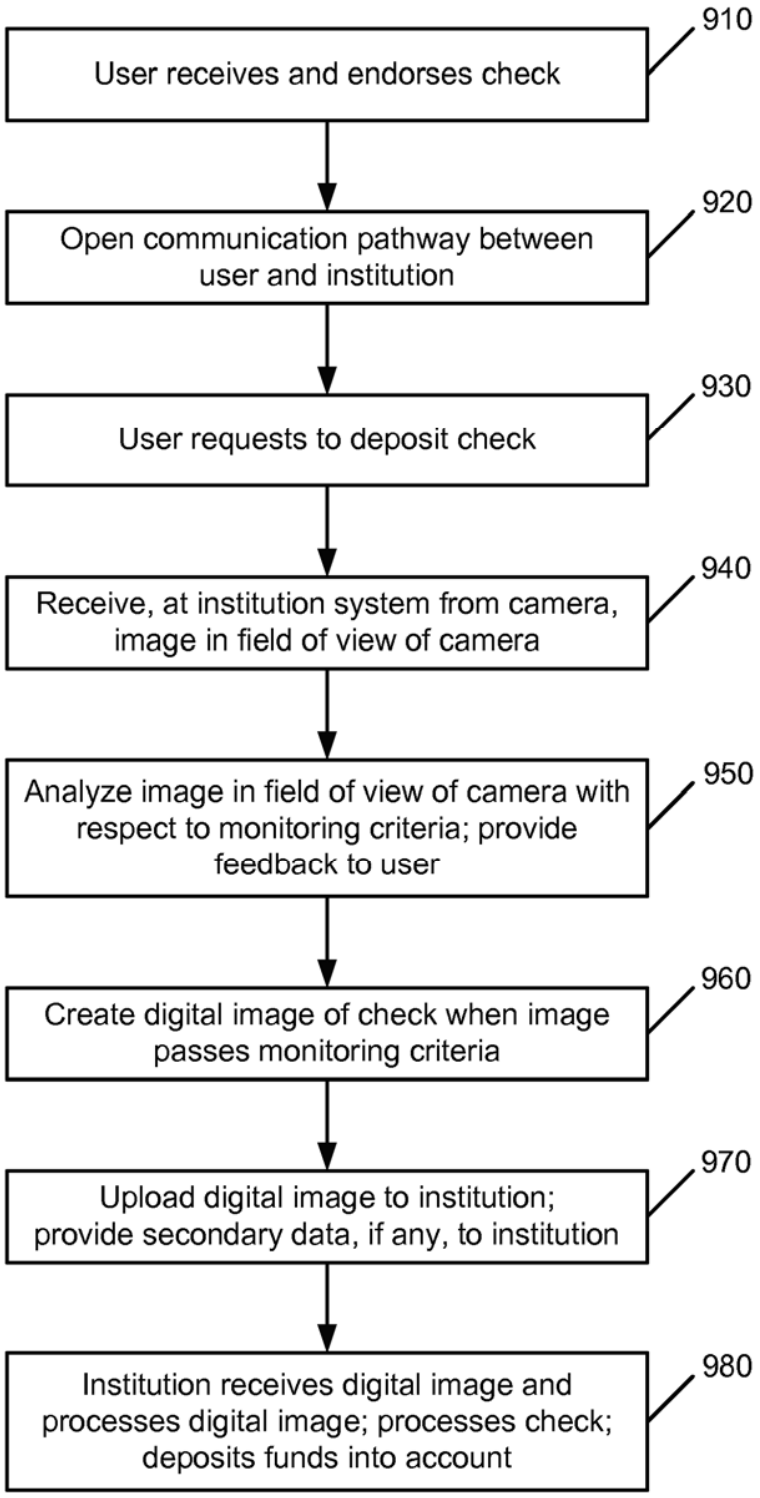

910
User receives and endorses check
920
Open communication pathway between user and institution
930
User requests to deposit check
940
Receive, at institution system from camera, image in field of view of camera
950
Analyze image in field of view of camera with respect to monitoring criteria; provide feedback to user
960
Create digital image of check when image passes monitoring criteria
970
Upload digital image to institution; provide secondary data, if any, to institution
980
Institution receives digital image and processes digital image; processes check; deposits funds into account
900

FIG. 9

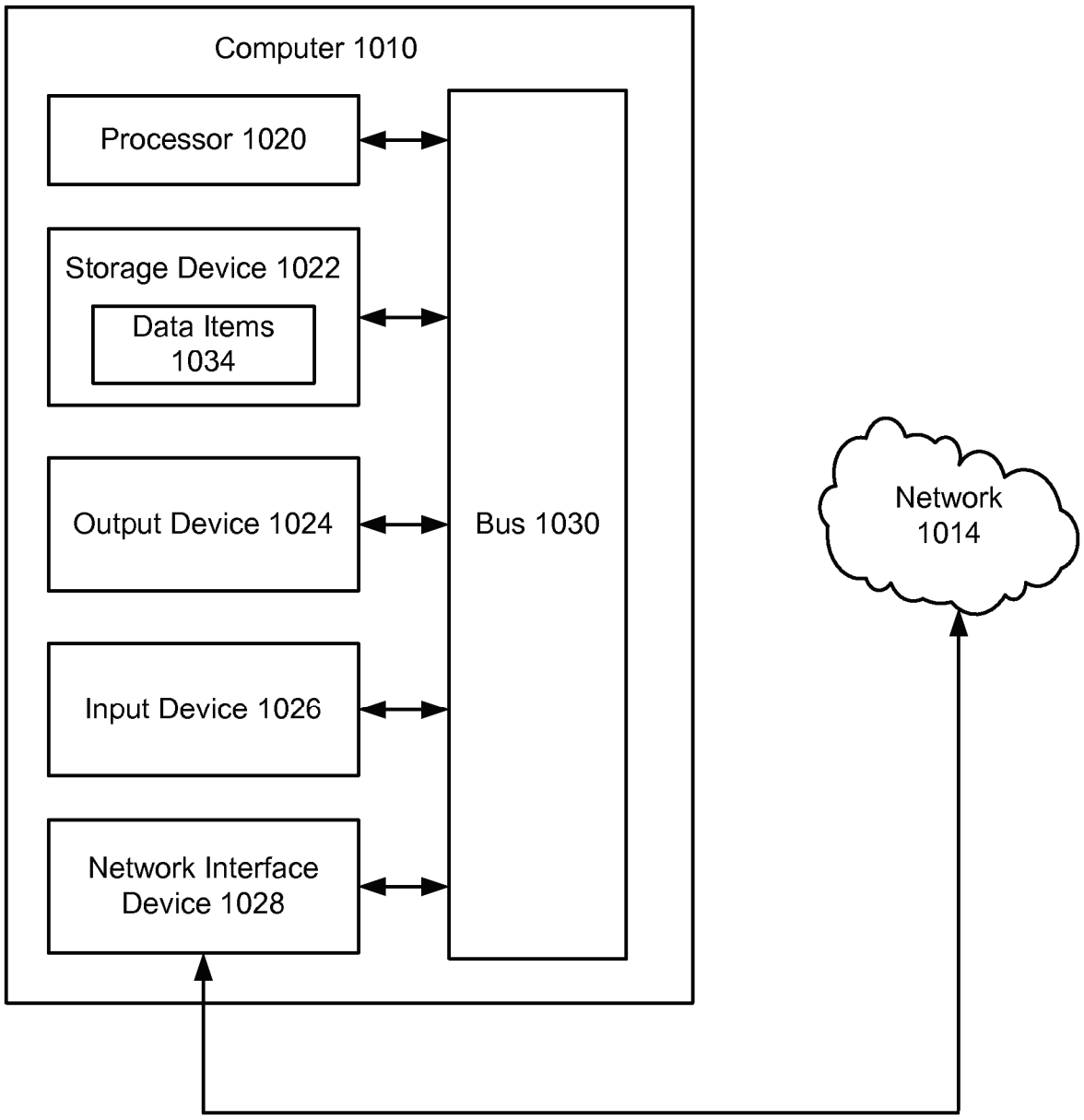

Computer 1010
Processor 1020
Storage Device 1022
Data Items 1034
Output Device 1024
Input Device 1026
Network Interface Device 1028
Bus 1030
Network 1014
1000

FIG. 10

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

BACKGROUND

Checks typically provide a safe and convenient method for an individual such as a payor to transfer funds to a payee. To use a check, the individual usually opens a checking account, or other similar account, at a financial institution and deposits funds, which are then available for later withdrawal. To transfer funds with a check, the payor usually designates a payee and an amount payable on the check. In addition, the payor often signs the check. Once the check has been signed, it is usually deemed negotiable, meaning the check may be validly transferred to the payee upon delivery. By signing and transferring the check to the payee, the payor authorizes funds to be withdrawn from the payor's account on behalf of the payee.

While a check may provide a payor with a convenient and secure form of payment, receiving a check may put certain burdens on the payee, such as the time and effort required to deposit the check. For example, depositing a check typically involves going to a local bank branch and physically presenting the check to a bank teller. To reduce such burdens for the payee, systems and methods have been developed to enable the remote deposit of checks. For example, the payee may capture a digital image of a check using a mobile device. The financial institution may then receive from the payee the digital image of the check. The financial institution may then use the digital image to credit funds to the payee. However, such a technique requires the efficient and accurate detection and extraction of the information pertaining to a check in the digital image. Capturing a digital image at a mobile device that allows for subsequent detection and extraction of the information from the digital image is difficult.

SUMMARY

An image of a check that is in the field of view of a camera is monitored prior to the image of the check being captured. The camera is associated with a mobile device. The monitoring may be performed by the camera, the mobile device, and/or a financial institution that is in communication with the mobile device. When the image of the check in the field of view passes monitoring criteria, an image may be taken by the camera and provided from the mobile device to a financial institution. The check may be deposited in a user's bank account based on the image. Any technique for sending the image to the financial institution may be used.

In an implementation, the image capture may be performed automatically by the camera, the mobile device, and/or the financial institution as soon as the image of the check is determined to pass the monitoring criteria. In an implementation, feedback may be provided to the user of the camera regarding the image of the check in the field of view. The user may reposition the check and/or the camera, for example, responsive to the feedback. Alternatively, the user may capture an image of the check responsive to the feedback.

This summary is provided to introduce a selection of concepts in a simplified form that are further described below in the detailed description. This summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing summary, as well as the following detailed description of illustrative embodiments, is better understood when read in conjunction with the appended drawings. For the purpose of illustrating the embodiments, there are shown in the drawings example constructions of the embodiments; however, the embodiments are not limited to the specific methods and instrumentalities disclosed. In the drawings:

FIG. **1** is a block diagram of an implementation of a system in which example embodiments and aspects may be implemented;

FIG. **2** shows a high-level block diagram of an implementation of a system that may be used for the deposit of a check;

FIG. **3** is a diagram of an example image comprising a check image, a background image, and feedback;

FIG. **4** is a diagram of an example image divided into segments that may be used for monitoring the image;

FIG. **5** is a diagram of an example histogram for a segment of an image comprising check data and background data;

FIG. **6** shows a data flow diagram of a system for the deposit of a check, in accordance with an example embodiment;

FIG. **7** shows a block diagram of a client apparatus and a server apparatus for the deposit of a check, in accordance with an example embodiment;

FIG. **8** is an operational flow of an implementation of a method that may be used for deposit of a check using image monitoring of the check;

FIG. **9** is an operational flow of another implementation of a method that may be used for deposit of a check using image monitoring of the check; and

FIG. **10** is a block diagram of an example computing environment in which example embodiments and aspects may be implemented.

DETAILED DESCRIPTION

In the following detailed description of example embodiments, reference is made to the accompanying drawings, which form a part hereof and in which is shown, by way of illustration, specific embodiments in which the example methods, apparatuses, and systems may be practiced. It is to be understood that other embodiments may be used and structural changes may be made without departing from the scope of this description.

FIG. **1** is a block diagram of an implementation of a system **100** in which example embodiments and aspects may be implemented. System **100** may include an account owner, referred to herein as a user **102**, and financial institutions **130**, **140**, and **150**, which may be any type of entity capable of processing a transaction involving a negotiable instrument. For example, financial institutions **130**, **140**, and **150** may be a retail bank, an investment bank, an investment company, a regional branch of the Federal Reserve, a clearinghouse bank, and/or a correspondent bank.

A negotiable instrument typically includes a type of contract that obligates one party to pay a specified sum of money to another party. Negotiable instrument as used herein is an unconditioned writing that promises or orders payment of a fixed amount of money. One example of a negotiable instrument is a check. The check may be taken by

the receiving party and deposited into an account at a financial institution of the receiving party. The receiving party may endorse the check and then present it for deposit at a bank branch, via an automated teller machine (ATM), or by using remote deposit. Other examples of negotiable instruments include money orders, cashier's checks, drafts, bills of exchange, promissory notes, and the like. A money order is a trusted financial instrument that is a payment order for a pre-specified amount of money. A cashier's check (also known as a bank check, official check, teller's check, bank draft or treasurer's check) is a check guaranteed by a bank and may be purchased from a bank.

The user **102** may be an individual or entity who owns account **160** that may be held at financial institution **130**. Account **160** may be any type of deposit account for depositing funds, such as a savings account, a checking account, a brokerage account, and the like. The user **102** may deposit a check **108** or other negotiable instrument in the account **160** either electronically or physically. The financial institution **130** may process and/or clear the check **108** or other negotiable instrument. The user **102** may communicate with financial institution **130** by way of communications network **120** such as an intranet, the Internet, a local area network (LAN), a wide area network (WAN), a wireless fidelity (WiFi) network, a public switched telephone network (PSTN), a cellular network, a voice over Internet protocol (VoIP) network, and the like. The user **102** may communicate with financial institution **130** by phone, email, instant messaging, text messaging, web chat, facsimile, mail, and the like. Financial institutions **130**, **140**, and **150** also may communicate with each other by way of communications network **120**.

In an implementation, the user **102** may receive payment from another individual such as a payor in the form of a check **108** or other negotiable instrument that is drawn from account **170** at financial institution **150**. The user **102** may endorse the check **108** (e.g., sign the back of the check **108**) and indicate an account number on the check **108** for depositing the funds. It is noted that although examples described herein may refer to a check, the techniques and systems described herein are contemplated for, and may be used for, deposit of any negotiable instrument. Similarly, the techniques and systems described herein are contemplated for and may be used with any form or document whose image may be captured with a camera or other imaging device of a mobile device for subsequent storage and/or processing.

As described further herein, a digital image of a check or other negotiable instrument may be provided from a user to a financial institution, and the digital image may be processed and funds associated with the check or negotiable instrument in the digital image may be deposited in a user's bank account. The user **102** may deposit the check **108** into account **160** by making a digital image of the check **108** and sending the image file containing the digital image to financial institution **130**. For example, after endorsing the check **108**, the user **102** may use a mobile device **106** that comprises a camera to convert the check **108** into a digital image by taking a picture of the front and/or back of the check **108**. The mobile device **106** may be a mobile phone (also known as a wireless phone or a cellular phone), a personal digital assistant (PDA), or any handheld computing device, for example. Aspects of an example mobile device are described with respect to FIG. **10**.

To increase the likelihood of capturing a digital image of the check **108** that may be readable and processed such that the check **108** can be cleared, the image is monitored for compliance with one or more monitoring criteria, prior to the image of the check **108** being captured. The monitoring criteria may be directed to proper lighting and/or framing of the check **108** in an image of the check **108** that will be captured and presented for clearing of the check **108**. An application may monitor whether the check **108** is sufficiently within the frame of the camera and has a high enough quality for subsequent processing. The monitoring is performed with respect to the image as it appears in the field of view of the camera of the mobile device **106**. The field of view is that part of the world that is visible through the camera at a particular position and orientation in space; objects outside the field of view when the image is captured are not recorded in the image. The monitoring criteria may be based on one or more of light contrast on the image, light brightness of the image, positioning of the image, dimensions, tolerances, character spacing, skewing, warping, corner detection, and MICR (magnetic ink character recognition) line detection, as described further herein. In an implementation, one or more histograms may be determined using the image being monitored. The histograms may be used in conjunction with monitoring criteria, as described further herein.

The monitoring may be performed by the camera, the mobile device **106**, and/or a financial institution that is in communication with the mobile device **106**. When the image of the check **108** in the field of view passes the monitoring criteria, an image may be taken by the camera and provided from the mobile device **106** to a financial institution. By ensuring that the image of the check passes monitoring criteria during pre-image capture monitoring, the number of non-conforming images of checks is reduced during presentment of the images to a financial institution for processing and clearing. In an implementation, feedback may be provided to the user **102** regarding the image of the check in the field of view. Based on the feedback, the user **102** may reposition the check **108** and/or the camera, for example, or may capture an image of the check **108**.

In an implementation, the image capture may be performed automatically by the camera, the mobile device **106**, and/or the financial institution as soon as the image of the check **108** is determined to pass the monitoring criteria. Alternatively, the user **102** may manually instruct the camera to perform the image capture (e.g., by pressing a button the camera or the mobile device **106**) after the user **102** receives an indication or other feedback that the image passes the monitoring criteria.

In an implementation, the user **102** may send the digital image(s) to financial institution **130** using the mobile device **106**. Any technique for sending a digital image to financial institution **130** may be used, such as providing a digital image to a website associated with financial institution **130** from storage, emailing a digital image to financial institution **130**, or sending a digital image in a text message or instant message, for example.

Financial institution **130** may receive a digital image representing the check **108** and may use any known image processing software or other application(s) to obtain the relevant data of the check **108** from the digital image. Financial institution **130** may determine whether the financial information associated therewith may be valid. For example, financial institution **130** may include any combination of systems and subsystems such as electronic devices including, but not limited to, computers, servers, databases, or the like. The electronic devices may include any combination of hardware components such as processors, databases, storage drives, registers, cache, random access

memory (RAM) chips, data buses, or the like and/or software components such as operating systems, database management applications, or the like. According to an embodiment, the electronic devices may include a network-based server that may process the financial information and may receive the digital image from the user **102**.

The electronic devices may receive the digital image and may perform an analysis on the quality of the digital image, the readability of the data contained therein, or the like. For example, the electronic devices may determine whether the account number, amount payable, and the like may be readable such that it may be parsed or otherwise obtained and processed by the financial institution to credit an account **160** associated with the user **102** and debit an account associated with the payor. In an implementation, a representative **135** of financial institution **130** may provide assistance to the user **102** and may provide assistance in determining whether the financial information may be readable and/or of a good enough quality to be processed.

Upon receipt and approval of the digital image, financial institution **130** may credit the funds to account **160**. Financial institution **130** may clear the check **108** by presenting a digital image of the check **108** captured from the digital image to an intermediary bank, such as a regional branch of the Federal Reserve, a correspondent bank, and/or a clearinghouse bank. For example, the check **108** may be cleared by presenting the digital image to financial institution **140**, which may be a regional branch of the Federal Reserve, along with a request for payment. Financial institutions **130** and **150** may have accounts at the regional branch of the Federal Reserve. Financial institution **130** may create a substitute check using the image provided by the user **102** and present the substitute check to financial institution **140** for further processing. Upon receiving the substitute check, financial institution **140** may identify financial institution **150** as the paying bank (e.g., the bank from which the check **108** is drawn). This may be accomplished using a nine digit routing number located on the bottom left hand corner of the check. A unique routing number is typically assigned to every financial institution in the United States. Financial institution **140** may present the substitute check to financial institution **150** and request that the check be paid. If financial institution **150** verifies the check (i.e., agrees to honor the check), financial institution **140** may then settle the check by debiting funds from financial institution **150** and crediting funds to financial institution **130**. Financial institution **150** may then debit funds from account **170**.

It will be appreciated that the preceding examples are for purposes of illustration and explanation only, and that an embodiment is not limited to such examples. For example, financial institution **150** may be a correspondent bank (i.e., engaged in a partnership with financial institution **130**). Thus, financial institution **130** may bypass the regional branch of the Federal Reserve and clear the check directly with financial institution **150**. In addition, account **160** and account **170** may both be held at financial institution **130**, in which case the check **108** may be cleared internally.

In an implementation, the mobile device **106** may comprise a video source such as a video camera, a web camera, or a video-enabled phone, for example, to obtain a video of the check **108**. A frame of the video may be obtained and monitored with respect to monitoring criteria, as described further herein. The mobile device **106** and/or the institution may obtain the frame and monitor the frame, depending on an implementation. Generation of a live video of a check **108** is not limited to a video camera, a web camera, and a video-enabled phone, and it is contemplated that any device that is capable of generating a live video may be used to make a video of the check **108** which may be monitored in real-time with respect to monitoring criteria. Additional devices that may be used in the generation and/or transmission of a live video include a web-enabled video computing device, a mobile phone, a camcorder, and a computer camera, for example.

FIG. **2** shows a high-level block diagram of an implementation of a system **200** that may be used for the deposit of a check, such as the check **108**. As described further herein, the user **102** may deposit the funds of the check **108** using the camera functionality in the mobile device **106**. In the example of one person giving a check to another person, this would enable the receiving party to deposit the funds at that time, without physically visiting an ATM or a bank branch.

In an implementation, the mobile device **106** may comprise a camera **207**, such as a digital camera. Such a mobile device may be called a camera phone. The mobile device **106**, through the camera **207**, has the ability to take or capture a picture or digital image of the check **108** or other negotiable instrument. The camera **207** may take an image of the front of the check **108**. Alternatively, the camera **207** may take an image of both the front and the back of the check **108**. The back of the check may provide endorsement verification, such as the signature of the person or party the check is made out to.

In an implementation, prior to an image in the field of view of the camera **207** being captured by the camera **207**, the image may be monitored with respect to monitoring criteria, e.g., using a software application running on the mobile device **106**. Feedback based on the monitoring of the image may be provided to the user **102** to assist the user **102** in positioning the check **108** so that the image of the check **108** may be captured in such a manner that it may be more easily processed and cleared during subsequent operations, such as those involving one or more financial institutions.

A depository **204** may include a bank in which the user **102** has a deposit account; however, the present disclosure is not limited to just banks. Alternatively, a third party may act as the depository **204** providing functionality to a plurality of users without regard to the bank at which they have deposit accounts, or whether their individual bank allows for the methods and systems described herein. The depository **204**, in an implementation, after receiving the image(s) of the check **108** from the user **102**, may use a clearinghouse **210** to perform the check clearing operations. As described with respect to the system **100** of FIG. **1**, check clearing operations are used by banks to do the final settlement of the check **108**, such as removing funds from the account of the payor and transferring those funds to the user's bank. The user's bank may choose to make the funds available to the user **102** immediately and take on the risk that the check **108** does not clear. However, for various reasons, the bank may only make those funds available to the user **102** after the check **108** finally clears.

In an implementation, the user **102** may place the check **108** on a background and generate a digital image comprising an image of the check (e.g., a check image) and a portion of the background (e.g., a background image) using the camera **207**. Any background may be used, although a dark background or a consistently colored background may provide more optimal results. It is noted that although examples and implementations described herein may refer to a check image and check data, the term "check image" may refer to any foreground image in a digital image (as opposed to the background image) and the term "check data" may refer to

any foreground data in a digital image (as opposed to background dara). Thus, the "check image" and the "check data" may refer to the foreground image and foreground data in implementations involving any negotiable instrument, form, or document.

In an implementation, the image being monitored in the field of view of the camera **207** comprises check data and background data. The check data pertains to the check image and the background data pertains to the background image (e.g., the background on which the check image is disposed).

FIG. **3** is a diagram of an example image **230** comprising a check image **247**, a background image **250**, and a feedback indicator **235** providing feedback to the user **102**. The image **230** may be generated by an imaging device associated with the mobile device **106**, such as the camera **207**. An edge **245** separates the check image **247** from the background image **250**. The edge **257** may be detected using any known technique(s). The image **230** may be provided in the field of view of the camera **207** prior to and during image capture of the check **108**. The user **102** may adjust the camera **207**, the check **108**, and/or any light source so that the image **230** passes one or more monitoring criteria. For example, a light source from a specific angle can lead to poor light contrast. Light contrast may be a monitoring criterion, and poor light contrast may be corrected easily by moving the lens of the camera **207** to a different perspective, thereby allowing the image to pass the monitoring criterion.

Feedback regarding the image **230** in the field of view with respect to the monitoring criteria may be generated and provided to the user **102**. In an implementation, the feedback may be provided visually, such as by text (e.g., "go closer", "go farther", "move the check to the right", "put the check on a darker background", "tilt the camera down", "take the picture now", etc.), arrows, or other visual indicators or cues (e.g., green lights, red lights, etc.) overlaid on the image **230**, shown as feedback indicator **235**. Alternatively or additionally, feedback may be provided to the user **102** aurally, such as through a speaker associated with the mobile device **106**. The feedback may advise the user **102** to move the camera **207** or the check **108** or adjust the lighting or the background, for example. The feedback may also advise the user **102** when the image **230** passes the one or more monitoring criteria and to capture the image of the check **108**.

One of the monitoring criteria may be based on the positioning of the check **180** in the image **230**. The positioning of the check **108** may be determined from the image **230** and compared with predetermined dimensions (e.g., of a typical personal check, of a typical business check) and tolerances. If the dimensions are within a certain acceptable tolerance, then it may be determined that the check **108** is properly positioned. Such feedback may be generated and provided to the user **102**.

In an implementation, the positioning of the check **108** in the image **230** may be compared with an alignment guide (which may or may not be visible to the user **102** in the field of view of the camera **207**). For example, measurements may be made by a processor in the camera **207**, the mobile device **106**, or a computing device at the financial institution to determine the check's position with respect to the alignment guide. The measurements may be compared to predetermined measurements or values to determine whether the check's positioning in the image **230** is proper or sufficient for further processing of the image. Edge detection and/or corner detection may be used in such measurements (e.g., in measuring the distance from the check **108** in the image **230** to the alignment guide). Any known technique(s) for edge detection and/or corner detection may be used. In an implementation, corner detection itself may be a monitoring criterion, such that if corner detection of the check **108** in the image **230** is achieved, then it may be concluded that the image **230** may be properly processed and cleared by a depository (I.e., the image **230** passes the monitoring criteria).

The alignment guide may be overlaid on the camera feed of the mobile device **106**, in an implementation. The alignment guide may take any shape such as a bounding rectangle or other bounding box or shape, horizontal and/or vertical bars, parallel lines, etc., for example. With a bounding rectangle, for example, used as the alignment guide, aligning the check **108**, thereby passing this monitoring criterion, means enclosing the check **108** within the bounding rectangle. If the check **108** is outside of the alignment guide in the image **230**, feedback may be generated and provided to the user **102** regarding this monitoring criterion with instructions for moving the check **108** or the camera **207** in order to properly align the check **108** in the field of view.

The operator of the camera **207** may introduce distortions in the image due to a perspective problem, specifically an angling of the camera vertically over the check, and the top of the check is smaller than the bottom, or the reverse. Monitoring criteria may also be directed to determining whether the image is skewed or warped. Skewing occurs when the check **208** is rotated from the horizontal in the image **230**. By measuring the distance from the edge(s) of the check **208** in the image to an alignment guide or the edge of the field of view, it may be determined whether the check **208** is skewed (e.g., by comparing the distances to one another, by comparing the distances to predetermined values, etc.). If skewing is present in the image **230**, feedback may be generated and provided to the user **102** with instructions for moving the check **108** or the camera **207** in order to properly align the check **108** in the field of view with respect to the horizontal.

Warping, as used herein, is meant to denote that the check **108** is tilted forward or back with respect to a plane that is perpendicular to a line drawn from the camera lens to the center of the check **108**. Warping, or tilting, of the image may lead to incorrect optical detection of the check **108**. In an implementation, a processor in the camera **207**, the mobile device **106**, or a computing device at the financial institution may determine whether warping is present in the image, and if so, may generate and provide feedback to the user **102**. Such feedback may comprise instructions to the user **102** for moving the check **108** or the camera **207** such that the check **108** would appear to be perpendicular to an imaginary line drawn from the center of the camera lens to the center of the check **108** itself (e.g., dewarping instructions).

If user involvement is tolerated, the user may be queried to supply or identify one or more corners of the check **108** in the image **230**. The perimeter of the check **108** may be determined using this information. Additionally, this information may be used for monitoring the image **230** for distortions.

In an implementation, a monitoring criterion may be whether the MICR line can be detected and/or read. Any known MICR line detection technique(s) may be used by the camera **207**, the mobile device **106**, and/or the financial institution (e.g., using an image processor, for example) to detect the MICR line on the check **108** in the image **230**. If the MICR line can be detected, it may be determined that the image **230** may be captured and sent to the financial institution for processing and clearing of the check **108** (i.e., the image passes the monitoring criterion directed to MICR line

detection). If the MICR line cannot be detected, feedback may be provided to the user **102**, such as to reposition the check **108** and/or the camera **207** (I.e., the image fails to pass the monitoring criterion, perhaps because the image is out focus or the lighting is inadequate, for example).

In an implementation, spacing between certain characters, points, or features (e.g., MICR number, "$" sign, signature line, courtesy amount line, legal amount line, etc.) may be determined and used as a monitoring criterion. For example, if the MICR line can be detected, then the spacing between the numbers in the MICR line may be determined using any known measuring and/or image processing technique(s). If the spacing is outside of a certain range corresponding to valid spacing between number in a MICR line, then it may be determined that the image **230** may be not properly processed if captured by the camera **207**. In such a case, feedback may be generated and provided to the user **102**, such as to reposition the check **108** and/or the camera **207**.

Another monitoring criterion may be based on the light in the image **230**, such as the light contrast and/or light brightness found on the image **230**, such as in various regions of the image **230**. For example, if the light contrast between the check image **247** and the background image **250** is less than a predetermined amount, then it may be determined that the image **230** may be not properly processed if captured by the camera **207**. In such a case, instead of capturing the image **230**, feedback may be generated and provided to the user **102** to adjust the camera **207**, the check **108**, and/or the lighting in order to bring the image **230** into compliance with the monitoring criteria.

As another example, the light brightness on various regions of the image may be determined and compared to each other and/or may be compared to a predetermined threshold. If the difference between the light brightness of the various regions is less than a predetermined amount (e.g., the light brightness does not vary significantly among the regions) or if the light brightness is less than a predetermined threshold, then it may be determined that the image **230** may be properly processed if captured by the camera **207**. Otherwise, feedback may be generated and provided to the user **102** to adjust the camera **207**, the check **108**, and/or the lighting in order to change the light brightness on the image **230**.

In an implementation, one or more histograms may be generated based on the image **230** and used in the determination of light contrast and/or light brightness monitoring criteria. A histogram is a well known graph and may be used to display where all of the brightness levels contained in an image are found, from the darkest to the brightest. These values may be provided across the bottom of the graph from left (darkest) to right (brightest). The vertical axis (the height of points on the graph) shows how much of the image is found at any particular brightness level.

Histograms may be used to monitor whether the light on the image **230** is uniform, not too bright, etc. For example, the mobile device **106** can monitor the histogram of the image **230** to ensure that there is a large contrast between the background image **250** and the check image **247**. Feedback may be provided to the user **102** as to how to move or adjust the camera, lighting, etc. in order to get a good image for subsequent processing (i.e., how to get an image that passes the monitoring criteria).

In an implementation, the image **230** may be divided into segments, such as those shown in FIG. **4**. FIG. **4** is a diagram of the example image **230** of FIG. **3** divided into segments **260**, **265**, **270**, **275** that may be used for monitoring the image **230**. Although four segments are shown in FIG. **4**, any number of segments may be used with techniques described herein. Although the segments **260**, **265**, **270**, **275** are formed by dividing the image **250** into quadrants, the segments may be formed by any techniques, take any shape, and have any area, subject to a constraint that each segment comprises a portion of the check data **247** and a portion of the background data **250** separated by a portion of the edge **245**. In this manner, distinct areas of density corresponding to the background of the image and the check data of the image may be provided in a histogram.

FIG. **5** is a diagram of an example histogram **280** for a segment of an image comprising check data and background data. The horizontal axis of the histogram **280** represents the grayscale level between 0 and 255, where 0 represents true black and 255 represents true white. The vertical axis represents the amount of the image at a particular grayscale level of the horizontal axis. Any known technique for generating a histogram for an image (such as a grayscale image of the image **230**) may be used. The histogram **280** shows two distinct areas of density (i.e., two distinct density distributions). The density area **286** closer to the grayscale level of zero corresponds to the background of the image, and the density area **289** closer to the grayscale level of 255 corresponds to the check data.

The density distribution for each segment (or for the entire image **230**) may be analyzed to determine whether the light contrast and/or light brightness is appropriate for processing and clearing of the check **108** in the image **230** (and thus passes that monitoring criterion) or whether the light contrast and/or light brightness does not pass the monitoring criterion and the camera **207**, the check **108**, and/or the light source should be adjusted or repositioned. For example, the density distributions for the segments may be compared with each other and/or may be compared to predetermined values or levels. If the differences are less than a predetermined difference amount, such as less than 1 percent different, less than 5 percent different, etc., then the image **230** may be captured and sent to the financial institution for processing. Otherwise, feedback may be generated and provided to the user **102** to reposition the camera **207**, the check **108**, and/or the light source.

When the image **230** passes the monitoring criteria (e.g., is positioned properly with respect to an alignment guide, is not warped, is not skewed, has adequate light brightness and/or light contrast, etc.), the image **230** may be captured either automatically (e.g., by the camera or the mobile device under direction of an application running on the camera **207** or the mobile device **106** or the financial institution) or manually (e.g., by the user **102** pressing a button or making a selection on the camera **207** or the mobile device **106**). The digital image thus captured may be provided from the mobile device **106** to a financial institution. The check **108** may be deposited in a user's bank account based on the digital image. Any technique for sending the digital image to the financial institution may be used.

FIG. **6** shows a data flow diagram **300** of a system for the deposit of a check, in accordance with an example embodiment. In the data flow diagram **300**, a client **320** is one example of the mobile device **106** of the user **102** described with respect to the systems **100** and **200** of FIGS. **1** and **2**, respectively. In an implementation, a server **322** may be a software component operable by the depository **204** of FIG. **2**. The client **320** may log in to a remote deposit system executed on the server **322**. The login **325** may serve to authenticate the user **102** as an authorized consumer of the depository **204**.

The server **322**, in one example, may send instructions **330** to the client **320** that execute an application on the client **320**. This may include instructions that cause a software object, which may have been previously downloaded and installed (e.g., pre-installed) on the client **320**, to be executed on the client **320**. The software object may analyze the image in the field of view of a digital camera (e.g., the image **230** shown in the field of view of the camera **207** associated with the mobile device **106**) with respect to one or more monitoring criteria and may generate and provide feedback to the user regarding the monitoring criteria and/or instructions for capturing an image of the check **108**.

In another example, the instructions **330** may include a wholly self-contained application that when delivered to the client **320** will execute and perform one or more operations described herein, such as those directed to analyzing the image in the field of view of the camera **207** with respect to monitoring criteria and providing feedback to the user **102**. In either example, the software object may be configured to make one or more software calls **310** to the camera **207**. This may be through specific software instructions to the camera **207**. In other words, the camera's functionality may not be abstracted through any software library. In such an example, software code may be written and delivered to every different camera-equipped mobile phone.

In an alternate example, the software object may operate through a software abstraction layer, such as an application programming interface (API). The software object developer may only insert code into the software object to call one or more APIs exposed by the software operating the mobile device **106**. One example of such software is Windows Mobile by Microsoft Corporation. In the context of a Windows Mobile device, the Windows Mobile operating system (OS) has one or more APIs exposed to application developers that will translate instructions from applications into instructions operable by the camera **207** on the mobile device **106**. A mobile operating system, also known as a mobile platform or a handheld operating system, is the operating system that controls a mobile device. Other mobiles OSs include Symbian OS, iPhone OS, Palm OS, BlackBerry OS, and Android.

The software object may cause the camera **207** to analyze an image in the field of view with respect to monitoring criteria, provide feedback, and/or take a picture or capture one or more images of the check **108** being deposited. These images may be captured sequentially, e.g., pursuant to the user **102** flipping the check **108** over after an image of the front of the check **108** has been captured after passing the monitoring criteria. However, each side of the check **108** may be captured by the camera **207** using similar API calls. The images may be stored in an image file **315**.

Once the images of one or both sides of the check **108** pass the monitoring criteria and are captured by the camera **207**, the image file **315** may be operated on by the software object of the client **320**. These operations may include any of the following: deskewing, dewarping, magnetic ink character recognition, cropping (either automatically, or having the user **102** manually identify the corners and/or edges of the check **108** for example), reducing the resolution of the image, number detection, character recognition, and the like.

With respect to number and character recognition, commercial check scanners have used characteristics of the MICR encoding to detect information about the check, such as the bank's routing number and the account number. However, the characteristics that these scanners have used are the magnetic characteristic of the ink itself and these scanners have used methods similar to those of magnetic audio tape readers. In an implementation, a software object of the client **320** may optically recognize the characters on the MICR line, as a consumer mobile device such as the mobile device **106** will lack the magnetic reading ability of a commercial check scanner.

The image may be also down converted into a grayscale or black and white image, such as either in Joint Photographic Experts Group (JPEG) compliant format or in tabbed image file format (TIFF) for example. In an alternate example, the image may be formatted as a Scalable Vector Graphics (SVG) image. One of the benefits of an SVG file is a large size advantage over JPEG. In the former example, the image at some point before entry into the clearing system may be converted to TIFF format. This may be performed at the mobile device **106**, wherein the camera **207** captures the image in TIFF format. However, the camera **207** of the mobile device **106** may capture the image in JPEG format, which may then be converted into TIFF either at the mobile device **106** or at the server **322**. In the latter example, this may use the transmission of the TIFF image across a communications network which may be more advantageous as TIFF images are typically smaller in file size for the same size of picture as a JPEG formatted image.

The software object on the client **320** may operate by performing one or more of the operations described herein and then transmitting an image file **335** (e.g., based on image file **315** that has been processed) to the server **322** after the user **102** confirms that they do wish to deposit the check **108**. Alternately, the software object may capture the image of the check **108** and transmit that image to the server **322** that in turn may perform those operations, verifies that the image quality is within acceptable thresholds, and communicates that verification back to the client **320**, which can then instruct the user **102** to take a picture of the other side of the check **108**. In this example, the image transmitted to the server **322** may be in any format, such as JPEG or TIFF, insofar as the server software has the ability to convert that image into a Check 21 compliant format. Alternately, the bank may output an X9.37 file to the clearing system. The Check Clearing for the 21st Century Act (or Check 21 Act) is a United States federal law that allows the recipient of a paper check to create a digital version, thereby eliminating the need for further handling of the physical document. The Check 21 standard for electronic exchange is defined in the standard DSTU X9.37-2003 ("X9.37"). It is a binary interchange format.

The server **322** may confirm (e.g., using a process confirmation **340**) with the user **102** the transmission, reception, and processing of each side of the check **108** separately, or may confirm both sides at the same time. On the server side, more operations may be performed, such as signature verification. Where to perform these operations may be determined by the processing power of the mobile device **106** itself, which is typically limited in computational power. However, the present discussion is not limited in any way by discussion of where certain operations are described as operating. The operations of detecting and verifying information may be performed by the client **320** before the information is transmitted along with the image in the image file **335** to the server **322**. Alternately, the software object(s) operating on the mobile device **106** may perform no operation other then capturing images of the front and back of the check **108** after passing the monitoring criteria, receiving confirmation that the user **102** wishes to proceed, and transmitting those images to the server **322**, wherein the server **322** performs those operations.

In an implementation, after the image file **335** has been received by the server **322**, the server **322** may send a process confirmation **340** to the client **320**. The process confirmation **340** may request instructions from the client **320** to continue proceeding with the deposit now that the server **322** has received the image file **335**. In response, the client **320** may send a deposit confirmation **345** to the server **322**, instructing the server **322** to process the deposit of the check based on the image file **335** that had been received by the server **322**.

FIG. **7** shows a block diagram of a client apparatus **450** and a server apparatus **570** for the deposit of a check, in accordance with an example embodiment. The client apparatus **450** may include one or more software objects operating on a mobile device **106**, such as described above. The client apparatus **450** may include a communications module **452**, a check processing module **454**, and an image monitoring and capture module **456**. The client apparatus **450** may receive, in one example, one or more check images **458** as an input and output one or more processed images **460**.

In an implementation, the check images **458** may be received following a software call from the check processing module **454** to the image monitoring and capture module **456**. In such an implementation, the image monitoring and capture module **456** may include the camera **207** contained within the mobile device **106**. Alternately, the camera **207** may be detachably coupled to the mobile device **106** such as through a secure digital (SD) slot or over any suitable communications bus, such as USB (universal serial bus).

In an implementation, the image monitoring and capture module **456** may obtain an image and send the image to a financial institution (e.g., financial institution **130**, the server **322**, the server apparatus **570**, etc.) for processing. In an implementation, the client apparatus **450** may comprise a browser such as a web browser, for accessing a website on the Internet or other network associated with a financial institution. The user may access the website and select a "monitor and capture image" link or similar icon, button or link, for example, displayed on the browser. Such a selection may call the image monitoring and capture module **456** on the client apparatus **450**.

The communications module **452** may be configured, in one example, to receive and send data signals over a suitable communications network. This may include, without limitation, GSM/GPR3, HSDPA, CDMA, TDMA, 802.11, 802.16 and the like. While the bandwidth available to the mobile device **106** may be an implementation concern such discussion is outside the scope of the present discussion and any suitable wireless communications network is considered to be within the scope of the present discussion. With respect to the present discussion, the communications module **452** may receive one or more processed check images **460** from the check processing module **454** and may transmit them over the suitable communications network to the depository **204**, as described herein.

The check processing module **454** may be configured, in one example, to cause the image monitoring and capture module **456** to monitor an image of at least one side of a check provided in a field of view of the camera **207** and then capture the image after it passes monitoring criteria. Compliance with the monitoring criteria is intended to ensure that the image of the check is suitable for one or more processing tasks. For instance, if the check is rotated 45 degrees clockwise when captured, the check processing module **454** or a software object operated on the server **322** described above may be unable to optically detect information on the check.

The check processing module **454** may perform one or more cleaning or processing operations on the captured image of the check. Such cleaning of processing may include dewarping and/or deskewing (if not part of the monitoring criteria, in an implementation), for example. Cleaning or processing may include down-converting the image received from the image capture module to a suitable size, such as 200 dots per inch (OPI) resolution or in a resolution range such as 200 DPI to 400 DPI, 300 DPI to 500 DPI, etc., and/or converting the image to grayscale or black and white. Such operation(s) may reduce the file size of the check image. Alternatively, the check processing module **454** may send instructions to the image monitoring and capture module **456** to cause the image monitoring and capture module **456** to capture an image of the check at a suitable resolution. The check processing module **454** may additionally perform any of the following operations, in further examples: convert from JPEG to TIFF, detect check information, perform signature detection on the image of the check, and the like. The check processing module **454** may, alternatively, send the captured check image to the server described herein for such processing, and receive confirmation that the operations were completed before further operations can proceed.

The size of the file sent between the mobile device and the server may be small. This runs counter with respect to automatic check detection against a background. If captured in color, the contrast between check and background becomes easier. However, the processed image sent over the communications network may need to be smaller, and if the detection operation is performed by the server, it may be advantageous to convert the captured image to grayscale, or even black and white, before transmission to the server. Grayscale images are compliant with the Check 21 Act.

While "flat" is a fairly well known term to users, each user's appreciation of flat with respect to the camera lens of the camera **207** associated with the mobile device **106** may result in a problem with needing to align the check image programmatically or risk rejecting a large number of check images. As the image captured is a set of pixels, a tilted image will result in a jagged polygon rather than a perfect rectangle. Using convex hull algorithms, the check processing modules may create a smooth polygon around the boundary and remove the concavity of the check image. Alternatively, a rotating calipers algorithm may be used to determine the tightest fitting rectangle around the check boundary, which can then be used to determine the angle of it, with that angle being used to align the check properly.

The server apparatus **570** may include one or more software objects operating on a server operated by the depository **204**. Aspects of an example server apparatus are described with respect to FIG. **10**. The server apparatus **570** may include a communications module **572**, a check processing module **574**, and a check clearance module **576**. The server apparatus **570** may receive one or more processed images **460** from a mobile device **106** or a client apparatus **450** as an input and may output a file such as a Check 21 compliant file **578**. The Check 21 compliant file **578** may be a file or entry in a record set that is compliant with the clearinghouse rules set forth in the Check 21 Act and may include outputting an X9.37 file, in one example.

The communications module **572** may be configured to receive a wireless communication from the mobile device **106** over any suitable communications network, such as those described above. The communications module **572** may additionally receive a communication over a different communications network than the mobile device **106** com-

municated on, such as receiving the communication over a TCP/IP (Transmission Control Protocol/Internet Protocol) connection from the user's communication provider.

The check processing module **574** may be configured, in one example, to perform one or more check processing operations on the processed image(s) **460** that are received. In an implementation, these operations may include any of the operations described herein with respect to the check processing module **454**. The operation of signature verification may be performed by the check processing module **574** of the server apparatus **570** as the server apparatus **570** may interface with other systems of the depository **204** that may maintain previously verified signature samples of the user **102**. Performing signature verification at the client apparatus **450** may be computationally unfeasible; additionally, there may be a security risk if the signature sample is stored on the user's own device.

A cropped grayscale image may be sent to the server apparatus **570**. The server apparatus **570** may extract information via a TIFF conversion and determine the DPI and re-scale to the proper DPI (e.g., convert to TIFF and detect the DPI that was used in the grayscale image). In an implementation, DPI detection may run on the client apparatus **450**.

The check clearance module **576** may be configured, in one example, to receive a file from the check processing module **574** and may communicate with a check clearinghouse such that a Check 21 compliant file may be delivered to the check clearinghouse and funds may be received by the depository **204**. The availability of the funds to the user **102** may be delayed by this operation such that the user **102** only has access to those funds when the depository **204** receives confirmation that the check has cleared.

FIG. **8** is an operational flow of an implementation of a method **800** that may be used for deposit of a check using image monitoring of the check. At **810**, a request for access may be received from a user (e.g., the user **102**). The user may request access to a deposit system operated by a depository (e.g., the depository **204**) by way of a mobile device (e.g., the mobile device **106**) such as a cellular phone, a PDA, a handheld computing device, etc. operated by the user. The access may be through some sort of user login, in some examples. The deposit system may be configured to receive a deposit of a negotiable instrument, such as a check, money order, cashier's check, etc. from the user and clear the negotiable instrument in a suitable clearinghouse system.

At **820**, the system may initialize a software object on the mobile device. This may include sending instructions to the mobile device intended to execute a previously installed (i.e., pre-installed) software object. Alternatively, the system may send a software object to the mobile device that may execute the software object, carry out operations described herein by use of the software object, and terminate the software object. In an implementation, the system may instruct a camera associated with the mobile device to monitor and capture an image of the negotiable instrument in conjunction with monitoring criteria.

The user may use the camera to obtain an image in the field of view of the camera, and at **830**, the image in the field of view of the camera may be monitored with respect to one or more monitoring criteria, such as those described above. The monitoring may be performed by the camera, the mobile device, and/or a computing device associated with the depository, for example. The monitoring may be performed pursuant to instructions received at the camera or mobile device from the deposit system operated by a depository, the server **322**, or the server apparatus **570**, for example. In an implementation, the results of the monitoring may indicate that the camera and/or the check should be repositioned and/or the light source should be adjusted prior to an image capture in order to capture an image of the check that may be processed properly, e.g., to have the data from the check obtained without error from the image, so that that check can be cleared.

At **840**, feedback based on the results may be generated and provided visually and/or aurally to the user via the camera and/or the mobile device. In an implementation, the feedback may be provided if the image fails to pass the monitoring criteria. The feedback may comprise instructions or guidance for the user to follow to obtain an image of the check in the field of view of the camera that will pass the monitoring criteria. Processing may continue at **830** with the image that is currently in the field of view of the camera (after the user has received and acted on the feedback) being monitored with respect to the monitoring criteria.

When the image in the field of view passes the monitoring criteria as determined at **830**, the image in the field of view may be captured by the camera at **850**. This may be accomplished through the software object accessing a camera associated with the mobile device (e.g., either comprised within the mobile device or separate from the mobile device). This may be done through an API exposed by the OS of the mobile device, or may be through software code customized for a specific phone and specific camera. With respect to the former, a developer of the software object may write code to the camera API(s), which may be specific to the OS and without regard to the camera on the device. The user may initiate the capture of the image (e.g., by pressing a button on the camera or the mobile device) or the image may be captured automatically, without user intervention, as soon as the image in the field of view is determined to have passed the monitoring criteria. In this manner, the occurrence of non-conforming images downstream (e.g., at a depository or financial institution) is reduced, and there is a high confidence that the image will be properly processed downstream.

In an implementation, when the image in the field of view is determined to pass the monitoring criteria, feedback may be generated and provided to the user indicating so. The feedback may instruct the user to capture the image now (e.g., by pressing a button on the camera or mobile device) or may advise the user that the image has been captured, for example.

At **860**, the captured image may be transmitted to the depository, e.g. as a digital image file. At **870**, the depository may receive the image of the check (along with financial information pertaining to the account for depositing funds, for example) and may process the image. Processing of the digital image file may include retrieving financial information regarding the check. The financial information may comprise the MICR number, the routing number, an amount, etc. Any known image processing technology may be used, such as edge detection, filtering to remove imagery except the check image or check data in the received digital image file, image sharpening, and technologies to distinguish between the front and the back sides of the check. The depository may identify and/or remove at least a portion of data that is extraneous to the check, such as background data.

After retrieving the financial information from the check in an electronic data representation form, the depository may determine whether the financial information such as the amount payable to the user, the account associated with the user to deposit funds, an account associated with a payor to

debit funds, and an institution associated with the payor, etc., may be valid. For example, the depository may include electronic devices such as computers, servers, databases, or the like that may be in communication with each other. The electronic devices may receive an electronic data representation and may perform an analysis on the quality of the data representation, the readability of the data representation, or the like. For example, the electronic devices may determine whether the account number, amount payable, or the like may be readable such that they may be parsed and processed by the depository to credit an account associated with the user.

If the financial information is determined to be valid, the electronic data representation may be processed by the depository, thereby depositing the money in the user's account. If the financial information is determined to be invalid, then the user may be advised. For example, the depository may transmit an email, a web message, an instant message, or the like to the user indicating that the financial information associated with the electronic data representation may be invalid. The user may determine how to proceed by selecting an option on the web message, replying to the email, or the like.

Thus, in an implementation, instructions on how the user would like to proceed may be requested from the user, such as whether the user would like to try the deposit again (e.g., make another image of the check that pass the monitoring criteria and send it to the depository) or whether the user would like assistance from a representative, for example. The user may indicate how they would like to proceed. If the user would like assistance, the financial information may be transferred to a representative for further review. The representative may review the financial information associated with the electronic data representation to determine whether to allow the electronic data representation to be processed by the depository. If so, the electronic data representation of the financial information may be processed by the depository, thereby depositing the check in the user's account. The depository may send a notice to the user via email, facsimile, instant message, or mail, for example, that the check has been deposited into the selected account.

FIG. **9** is an operational flow of another implementation of a method **900** that may be used for deposit of a check using image monitoring of the check. A user (e.g., the user **102**) may receive and endorse a check (e.g., the check **108**) at **910**, and open a communication pathway with an institution (e.g., the financial institution **130**) at **920**. In an implementation, the user may open a communication pathway with the institution by logging into a website of the institution, for example, There may be several ways in which a communication pathway may be established, including, but not limited to, an Internet connection via a website of the institution. The user may access the website and log into the website using credentials, such as, but not limited to, a username and a password.

At **930**, the user may send a request to deposit the check and may select an account in which to deposit the check. In an implementation, the user may select a "deposit check" option provided on the website, and may enter details such as check amount, date, the account the check funds should be deposited in, comments, etc.

At **940**, an image in the field of view of the camera may be obtained and provided, via the communication pathway, to the institution. A still image may be provided or a video may be provided, such as a video stream generated by the camera.

At **950**, the institution may receive the image or video stream and may analyze the image or a frame of the video stream with respect to one or more monitoring criteria, such as those described above. Feedback pertaining to the image with respect to the monitoring criteria may be generated and provided to the user over the communication pathway. Based on the feedback, the user may adjust the position the camera and/or the check and/or may adjust the light source until the image in the field of view of the camera is determined by the institution to pass the monitoring criteria.

When the image in the field of view passes the monitoring criteria, the image in the field of view may be captured (e.g., automatically without user intervention or pursuant to the user pressing a button) by the camera at **960**, thereby creating a digital image of the check. In an implementation, the user may instruct the camera (e.g., by pressing a button on the camera or the mobile device) to create the digital image. In another implementation, the camera may automatically create the digital image as soon as the image of the check passes the monitoring criteria. In this manner, the user may point the camera at the check such that the image of the check appears in the field of view, and after image has been determined to pass the monitoring criteria, a digital image of the check may be created without further user intervention. Depending on the implementation, one or more digital images of the check (e.g., corresponding to the front and back of the check) may be created using such techniques.

At **970**, the digital image(s) may be uploaded to the institution using any known image upload process. In an implementation, the upload may be augmented by secondary data which may be information relating to the deposit of the check, such as an account number and a deposit amount, for example. At **980**, when the institution has received the digital images (e.g., of the front and back sides of the check), the institution may process the digital images to obtain an image of the check and to deposit the funds of the check in the user's account, as described herein. It is contemplated that processing such as grayscale conversion, image cropping, image compression, edge and/or corner detection, etc. may be implemented in the method **900**. Such operations may be performed on one or more digital images created by the camera and may be performed on the image(s) by the mobile device and/or by the institution, as described further above.

Although the examples described herein may refer to uploading of images of checks to an institution, it is contemplated that any negotiable instrument or image (e.g., vehicle accident pictures provided to an insurance company) may be processed and/or transmitted using the techniques described herein. Additionally, one or more of the techniques described herein may be performed by the institution instead of the mobile device of the user.

FIG. **10** is a block diagram of an example computing environment in which example embodiments and aspects may be implemented. The computing system environment is only one example of a suitable computing environment and is not intended to suggest any limitation as to the scope of use or functionality. Numerous other general purpose or special purpose computing system environments or configurations may be used. Examples of well known computing systems, environments, and/or configurations that may be suitable for use include, but are not limited to, personal computers (PCs), server computers, handheld or laptop devices, multiprocessor systems, microprocessor-based systems, network PCS, minicomputers, mainframe computers,

embedded systems, distributed computing environments that include any of the above systems or devices, and the like.

Computer-executable instructions, such as program modules, being executed by a computer may be used. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Distributed computing environments may be used where tasks are performed by remote processing devices that are linked through a communications network or other data transmission medium. In a distributed computing environment, program modules and other data may be located in both local and remote computer storage media including memory storage devices.

With reference to FIG. **10**, a system **1000** includes a computer **1010** connected to a network **1014**. The computer **1010** includes a processor **1020**, a storage device **1022**, an output device **1024**, an input device **1026**, and a network interface device **1028**, all connected via a bus **1030**. The processor **1020** represents a central processing unit of any type of architecture, such as a CISC (Complex Instruction Set Computing), RISC (Reduced Instruction Set Computing), VLIW (Very Long Instruction Word), or a hybrid architecture, although any appropriate processor may be used. The processor **1020** executes instructions and includes that portion of the computer **1010** that controls the operation of the entire computer. Although not depicted in FIG. **10**, the processor **1020** typically includes a control unit that organizes data and program storage in memory and transfers data and other information between the various parts of the computer **1010**. The processor **1020** receives input data from the input device **1026** and the network **1014** reads and stores code and data in the storage device **1022** and presents data to the output device **1024**. Although the computer **1010** is shown to contain only a single processor **1020** and a single bus **1030**, the disclosed embodiment applies equally to computers that may have multiple processors and to computers that may have multiple busses with some or all performing different functions in different ways.

The storage device **1022** represents one or more mechanisms for storing data. For example, the storage device **1022** may include read-only memory (ROM), RAM, magnetic disk storage media, optical storage media, flash memory devices, and/or other machine-readable media. In other embodiments, any appropriate type of storage device may be used. Although only one storage device **1022** is shown, multiple storage devices and multiple types of storage devices may be present. Further, although the computer **1010** is drawn to contain the storage device **1022**, it may be distributed across other computers, for example on a server.

The storage device **1022** includes a controller (not shown in FIG. **10**) and data items **1034**. The controller includes instructions capable of being executed on the processor **1020** to carry out functions previously described herein with reference to FIGS. **1-9**. In another embodiment, some or all of the functions are carried out via hardware in lieu of a processor-based system. In one embodiment, the controller is a web browser, but in other embodiments the controller may be a database system, a file system, an electronic mail system, a media manager, an image manager, or may include any other functions capable of accessing data items. The storage device **1022** may also contain additional software and data (not shown), which is not necessary to understand the invention. Although the controller and the data items **1034** are shown to be within the storage device **1022** in the computer **1010**, some or all of them may be distributed across other systems, for example on a server and accessed via the network **1014**.

The output device **1024** is that part of the computer **1010** that displays output to the user. The output device **1024** may be a liquid crystal display (LCD) well-known in the art of computer hardware. In other embodiments, the output device **1024** may be replaced with a gas or plasma-based flat panel display or a traditional cathode-ray tube (CRT) display. In still other embodiments, any appropriate display device may be used. Although only one output device **1024** is shown, in other embodiments any number of output devices of different types, or of the same type, may be present. In an embodiment, the output device **1024** displays a user interface. The input device **1026** may be a keyboard, mouse or other pointing device, trackball, touchpad, touch screen, keypad, microphone, voice recognition device, or any other appropriate mechanism for the user to input data to the computer **1010** and manipulate the user interface previously discussed. Although only one input device **1026** is shown, in another embodiment any number and type of input devices may be present.

The network interface device **1028** provides connectivity from the computer **1010** to the network **1014** through any suitable communications protocol. The network interface device **1028** sends and receives data items from the network **1014**. The bus **1030** may represent one or more busses, e.g., USB, PCI, ISA (Industry Standard Architecture), X-Bus, EISA (Extended Industry Standard Architecture), or any other appropriate bus and/or bridge (also called a bus controller).

The computer **1010** may be implemented using any suitable hardware and/or software, such as a personal computer or other electronic computing device. Portable computers, laptop or notebook computers, PDAs, pocket computers, appliances, telephones, and mainframe computers are examples of other possible configurations of the computer **1010**. For example, other peripheral devices such as audio adapters or chip programming devices, such as EPROM (Erasable Programmable Read-Only Memory) programming devices may be used in addition to, or in place of, the hardware already depicted.

The network **1014** may be any suitable network and may support any appropriate protocol suitable for communication to the computer **1010**. In an embodiment, the network **1014** may support wireless communications. In another embodiment, the network **1014** may support hard-wired communications, such as a telephone line or cable. In another embodiment, the network **1014** may support the Ethernet IEEE (Institute of Electrical and Electronics Engineers) 802.3x specification. In another embodiment, the network **1014** may be the Internet and may support IP (Internet Protocol). In another embodiment, the network **1014** may be a LAN or a WAN. In another embodiment, the network **1014** may be a hotspot service provider network. In another embodiment, the network **1014** may be an intranet. In another embodiment, the network **1014** may be a GPRS (General Packet Radio Service) network. In another embodiment, the network **1014** may be any appropriate cellular data network or cell-based radio network technology. In another embodiment, the network **1014** may be an IEEE 802.11 wireless network. In still another embodiment, the network **1014** may be any suitable network or combination of networks. Although one network **1014** is shown, in other embodiments any number of networks (of the same or different types) may be present.

It should be understood that the various techniques described herein may be implemented in connection with hardware or software or, where appropriate, with a combination of both. Thus, the methods and apparatus of the presently disclosed subject matter, or certain aspects or portions thereof, may take the form of program code (i.e., instructions) embodied in tangible media, such as floppy diskettes, CD-ROMs, hard drives, or any other machine-readable storage medium wherein, when the program code is loaded into and executed by a machine, such as a computer, the machine becomes an apparatus for practicing the presently disclosed subject matter. In the case of program code execution on programmable computers, the computing device generally includes a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device, and at least one output device. One or more programs may implement or use the processes described in connection with the presently disclosed subject matter, e.g., through the use of an API, reusable controls, or the like. Such programs may be implemented in a high level procedural or object-oriented programming language to communicate with a computer system. However, the program(s) can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language and it may be combined with hardware implementations.

Although exemplary embodiments may refer to using aspects of the presently disclosed subject matter in the context of one or more stand-alone computer systems, the subject matter is not so limited, but rather may be implemented in connection with any computing environment, such as a network or distributed computing environment. Still further, aspects of the presently disclosed subject matter may be implemented in or across a plurality of processing chips or devices, and storage may similarly be effected across a plurality of devices. Such devices might include personal computers, network servers, and handheld devices, for example. Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims.

What is claimed:

1. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer for controlling the camera, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

overlaying an alignment guide on the live video of the check in the field of view of the camera;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated;

receiving the digital image of the check transmitted by the user's mobile device;

processing the digital image of the check including performing optical character recognition on the check in the digital image and verifying that the digital image of the check is acceptable for mobile check deposit, wherein the app, when downloaded and executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations including receiving an indication of a result of the processing before confirming that the mobile check deposit can go forward; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the digital image of the check is acceptable for mobile check deposit.

2. The method of claim **1**, wherein the digital image is a modified version of the captured video frame.

3. The method of claim **1**, wherein the wireless network is a cellular network.

4. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

monitoring a live video of a check in a field of view of a camera with respect to at least one monitoring criterion, wherein the live video is generated by a mobile device of a user, the user's mobile device including the camera and a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of the check;

generating the live video of the check in the field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera;

overlaying an alignment guide on the live video of the check in the field of view of the camera; and

using a wireless network, submitting the check for mobile check deposit in the bank after a frame of the live video of the check in the field of view of the camera is automatically captured;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

processing a digital image of the check including performing optical character recognition and verifying that the digital image of the check is acceptable for mobile check deposit, the digital image of the check being the captured video frame or being based on the captured video frame;

confirming that the mobile check deposit can go forward after optical character recognition is performed on the check in the digital image, a magnetic ink character recognition (MICR) line on the check in the digital image is recognized, and an amount payable on the check in the digital image is validated; and

updating, by a bank computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the check is submitted for mobile check deposit in the bank, confirming that the mobile check deposit can go forward, and verifying that the digital image of the check is acceptable for mobile check deposit.

5. The method of claim **4**, wherein one or more of one or more computers, remote from the user's mobile device, performs the monitoring, the determining, or both the monitoring and the determining, and wherein the one or more computers include the bank computer.

6. The method of claim **5**, wherein the downloaded app, when executed by the user's mobile device, is configured to cause the user's mobile device to perform additional operations comprising transmitting, using the wireless network, the live video of the check in the field of view of the camera.

7. The method of claim **4**, wherein the wireless network is a cellular network.

8. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

providing an app for download to a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer, the app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, wherein the app, when downloaded to the user's mobile device and executed by the user's mobile device, is configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing an image of a check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character recognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit and the confirming that the mobile check deposit can go forward.

9. The method of claim **8**, wherein the digital image is a modified version of the captured video frame.

10. The method of claim **8**, wherein the wireless network is a cellular network.

11. A method enabling mobile check deposit auto-capture functionality via video frame processing, the method comprising:

receiving an image of a check, wherein the image of the check is provided for mobile check deposit in a bank by a mobile device of a user, the user's mobile device including a camera and a memory storing a software abstraction layer and a downloaded app, the downloaded app associated with the bank to control check deposit by controlling the camera through the software abstraction layer, and the downloaded app, when executed by the user's mobile device, being configured to cause the user's mobile device to perform operations comprising:

providing instructions to the user for capturing the check;

generating a live video of the check in a field of view of the camera, the downloaded app causing the live video to be generated by controlling the camera through the software abstraction layer;

monitoring the live video of the check in the field of view of the camera with respect to at least one monitoring criterion;

determining that a video frame of the live video of the check satisfies the at least one monitoring criterion and then automatically capturing the video frame;

when the video frame of the live video of the check in the field of view of the camera is determined to satisfy the at least one monitoring criterion, providing feedback advising the user that the check has been captured;

using a wireless network, transmitting a digital image of the check from the user's mobile device and submitting the check for mobile check deposit in the bank after automatically capturing the video frame, wherein the digital image is the captured video frame or is based on the captured video frame; and

before the submitting, confirming that the mobile check deposit can go forward after optical character rec-

ognition is performed on the check, a magnetic ink character recognition (MICR) line on the check is recognized, and an amount payable on the check is validated;

performing image processing operations on the image of the check, the image processing operations including performing optical character recognition and verifying that the image of the check is acceptable for mobile check deposit, wherein the image of the check is the digital image transmitted by the user's mobile device or is based on the digital image transmitted by the user's mobile device; and

updating, by a computer, a balance of an account at a financial institution of the user to reflect an amount of funds associated with the check submitted for mobile check deposit by the user's mobile device, after the submitting the check for mobile check deposit in the bank, the confirming that the mobile check deposit can go forward, and the verifying that the image of the check is acceptable for mobile check deposit.

12. The method of claim **11**, wherein the wireless network is a cellular network.

* * * * *

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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The time period for reply, if any, is set in the attached communication.

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PATENT NUMBER (if known)	APPLICATION NUMBER
12,505,414	18/966,097

Completed by (check one):

☐ Applicant/Inventor

☑ Attorney or Agent of record 74,742 (Reg. No.)

☐ Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) is enclosed or was filed on _____ (Date)

/Christopher R. Abidin/
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Christopher R. Abidin
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February 10, 2026
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
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Title of Invention

SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	12505414
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PATENT CENTER #	74419482	FILING DATE	12/02/2024
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Christopher Abidin

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2026-02-10_US-0691.12c-AIA_47_Fee Address_Indication_Form.pdf	1	Maintenance Fee Address Change	175 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2026-02-10_US-0691.12c-AIA_47_Fee Address_Indication_Form.pdf	AA2E06426D58B5FCF76337C135F5E894DDFFF352A7DBF3307 2F532177C14B9ADD5F85AC49C0963C31928AC62B204D45493 F5DB3022395E766027BEC44065F157

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