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Application Number: 19321167 Document Date: 09/05/2025

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Form Revision Date: March 1, 2024

What is claimed:

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer for controlling the camera, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

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, the determining including dividing the video frame into segments

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comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion;

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

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;

a server, remote from the user's mobile device, comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the server to perform operations including:

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

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, the user's mobile device receiving an indication of a result of the server's processing

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after the transmitting the digital image of the check from the user’s mobile device; and

a computer comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the computer to update 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 system of claim 1, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

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

6. The system 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.

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

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

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the system being configured to perform operations including:

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;

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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, the digital image of the check being the captured video frame or being based on the captured video frame; and

processing the 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; and

a bank computer programmed to update 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 and verifying that the digital image of the check is acceptable for mobile check deposit.

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10. The system of claim 9, wherein the system is configured to perform additional operations including:

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 system of claim 9, further comprising one or more computers programmed to perform operations comprising the monitoring, the determining, or both the monitoring and the determining.

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

14. The system of claim 9, wherein the system is configured to perform additional operations including:

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

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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,

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.

15. The system of claim 14, wherein 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 system of claim 11, wherein the one or more computers include the bank computer.

17. The system of claim 9, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

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; and

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

a computer comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the computer to update 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.

19. The system of claim 18, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

23. The system of claim 18, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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,

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

25. The system of claim 18, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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

a mobile device of a user, the user’s mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user’s mobile device to perform operations including:

providing instructions to the user for capturing 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; and

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;

the system configured to perform image processing operations on an 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

a computer programmed to update 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 and the verifying that the image of the check is acceptable for mobile check deposit.

27. The system of claim 26, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

30. The system of claim 26, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

ABSTRACT

Embodiments include a system for mobile check deposit enabling auto-capture functionality via video frame processing. The system includes a mobile device with a camera, processor, and memory storing instructions that, when executed by the processor, configure the mobile device to generate a live video of a check in the camera's field of view, monitor the live video with respect to at least one monitoring criterion, and automatically capture a frame of the live video when that frame satisfies the monitoring criterion. The monitoring criterion may be based on light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and MICR line detection. The mobile device may be configured to confirm that mobile check deposit can go forward after optical character recognition (OCR) is performed on the check, a MICR line of the check is recognized, and an amount of the check is validated.

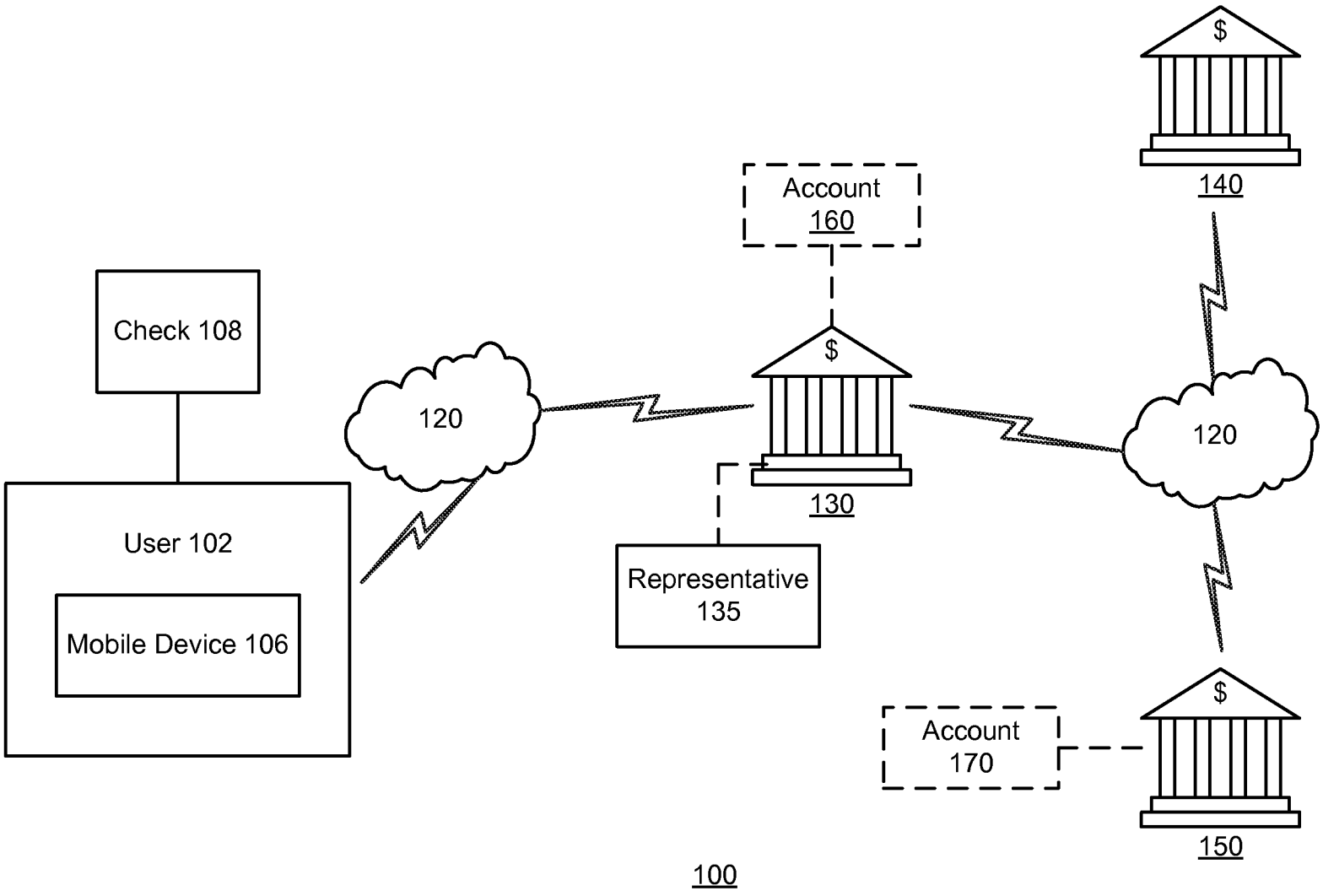
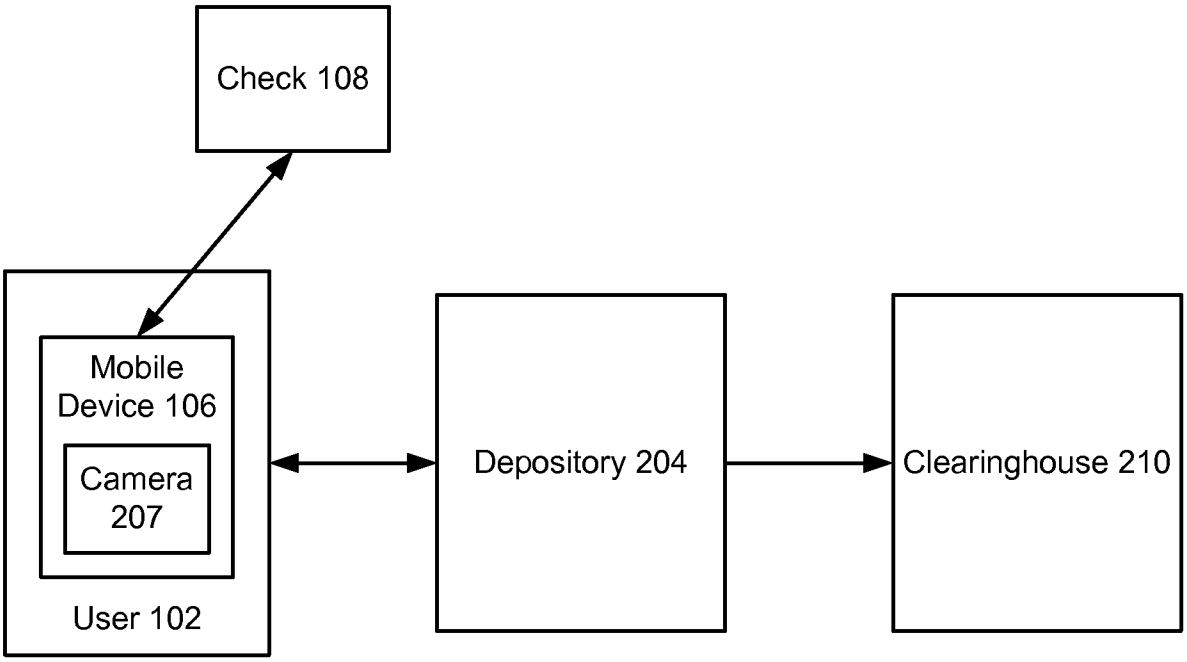

Check 108
User 102
Mobile Device 106
120
Account
160
$
130
Representative
135
$
140
120
Account
170
$
150
100

FIG. 1


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

200

FIG. 2

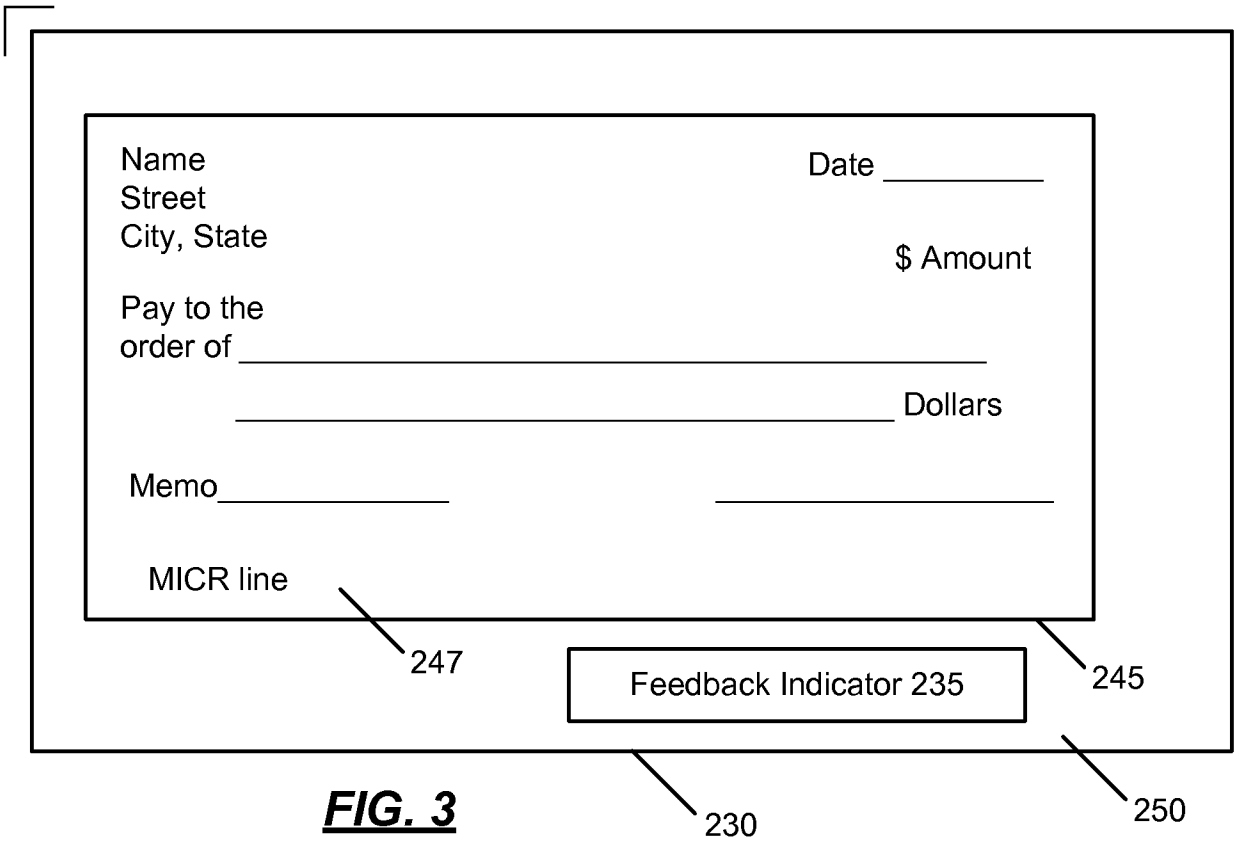

Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
247
245
Feedback Indicator 235
230
250

FIG. 3

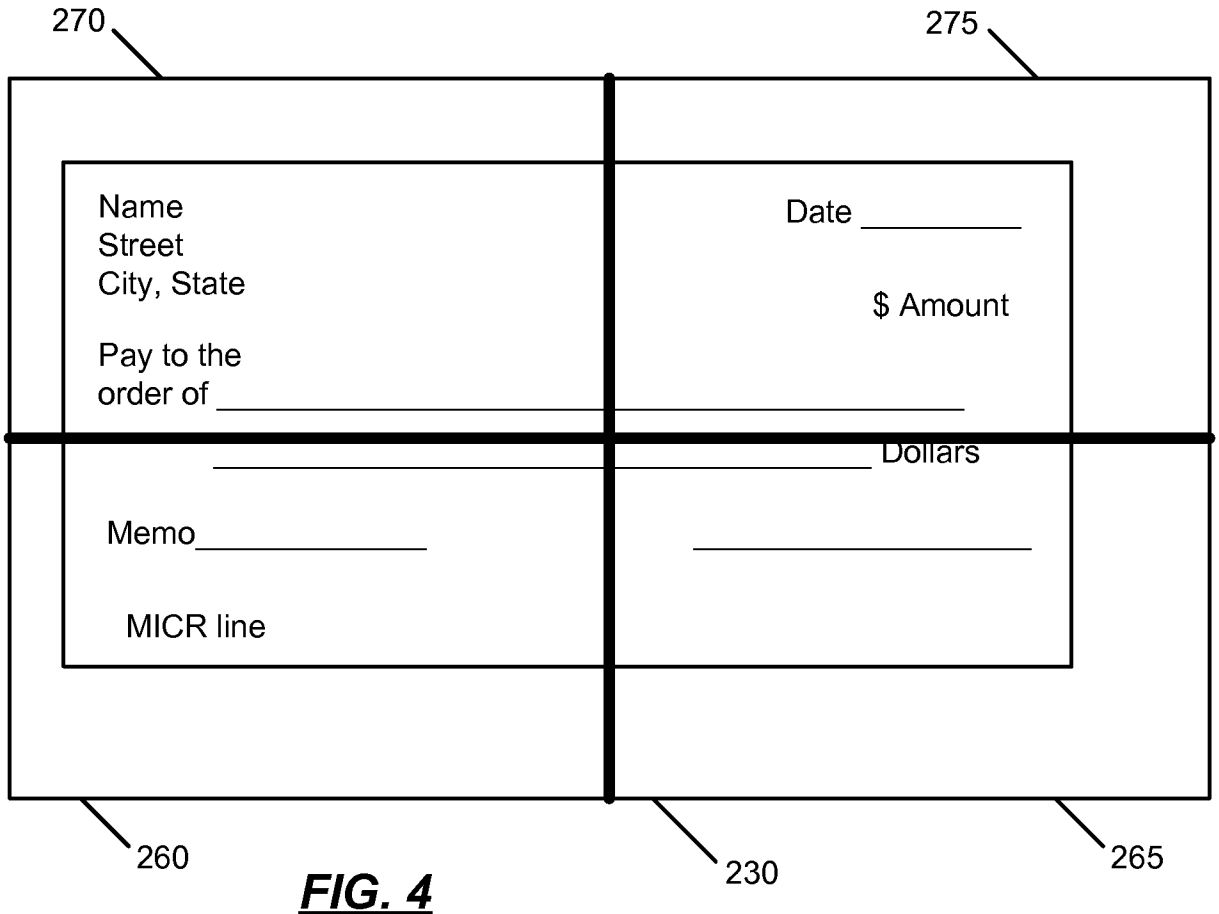
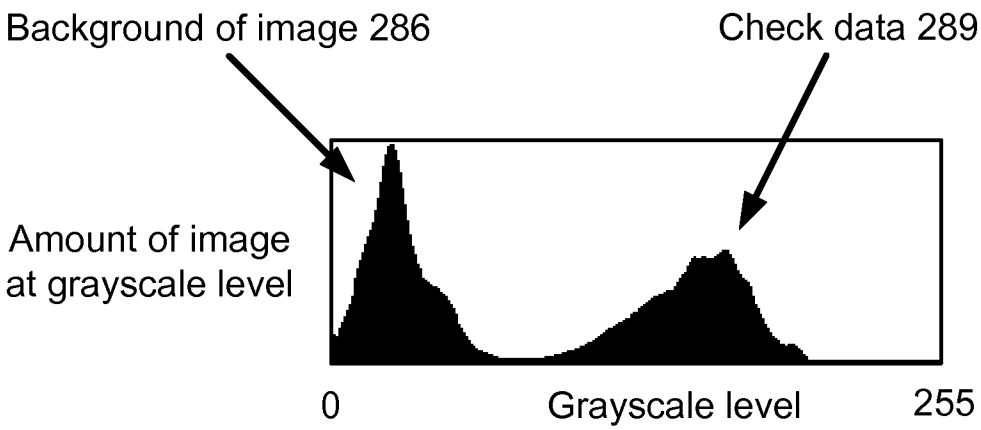
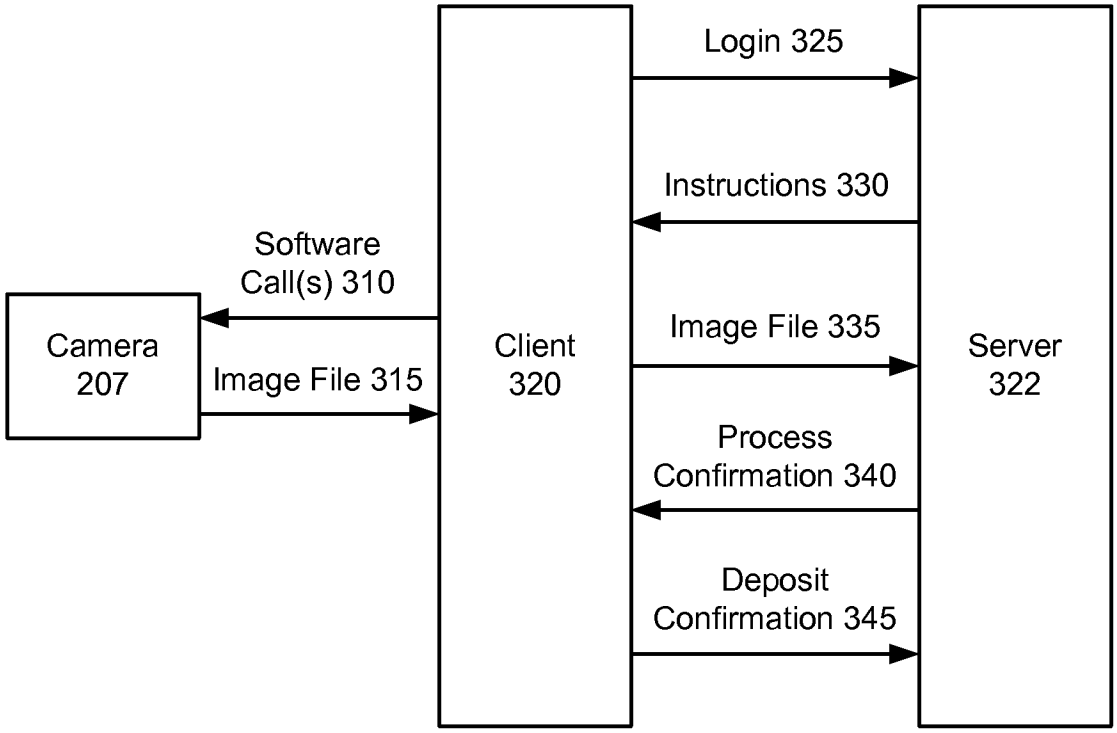

270
275
Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
260
230
265

FIG. 4



280

FIG. 5



300

FIG. 6

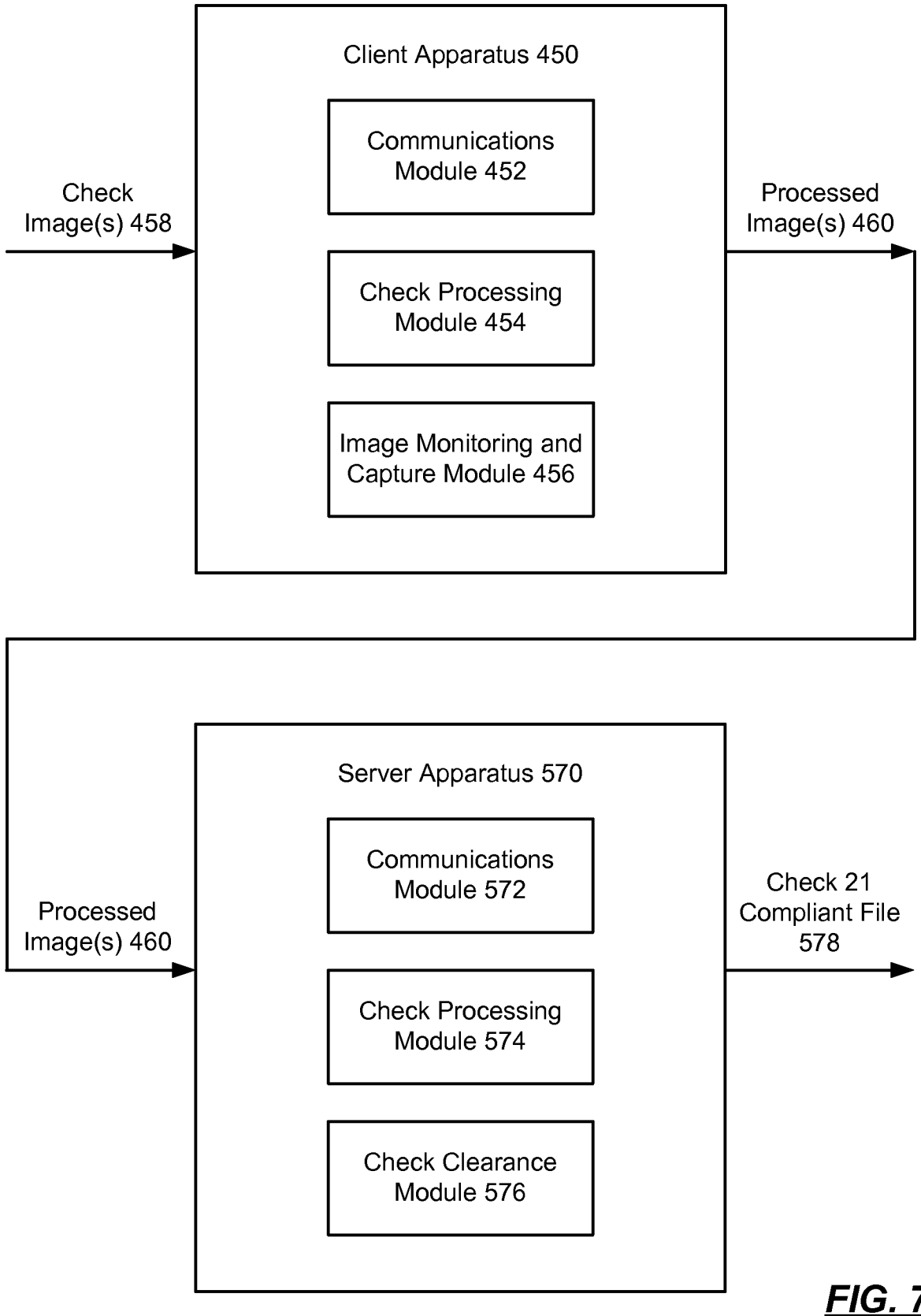

Client Apparatus 450
Communications Module 452
Check Processing Module 454
Image Monitoring and Capture Module 456
Check Image(s) 458
Processed Image(s) 460
Server Apparatus 570
Communications Module 572
Check Processing Module 574
Check Clearance Module 576
Processed Image(s) 460
Check 21 Compliant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

FIG. 7

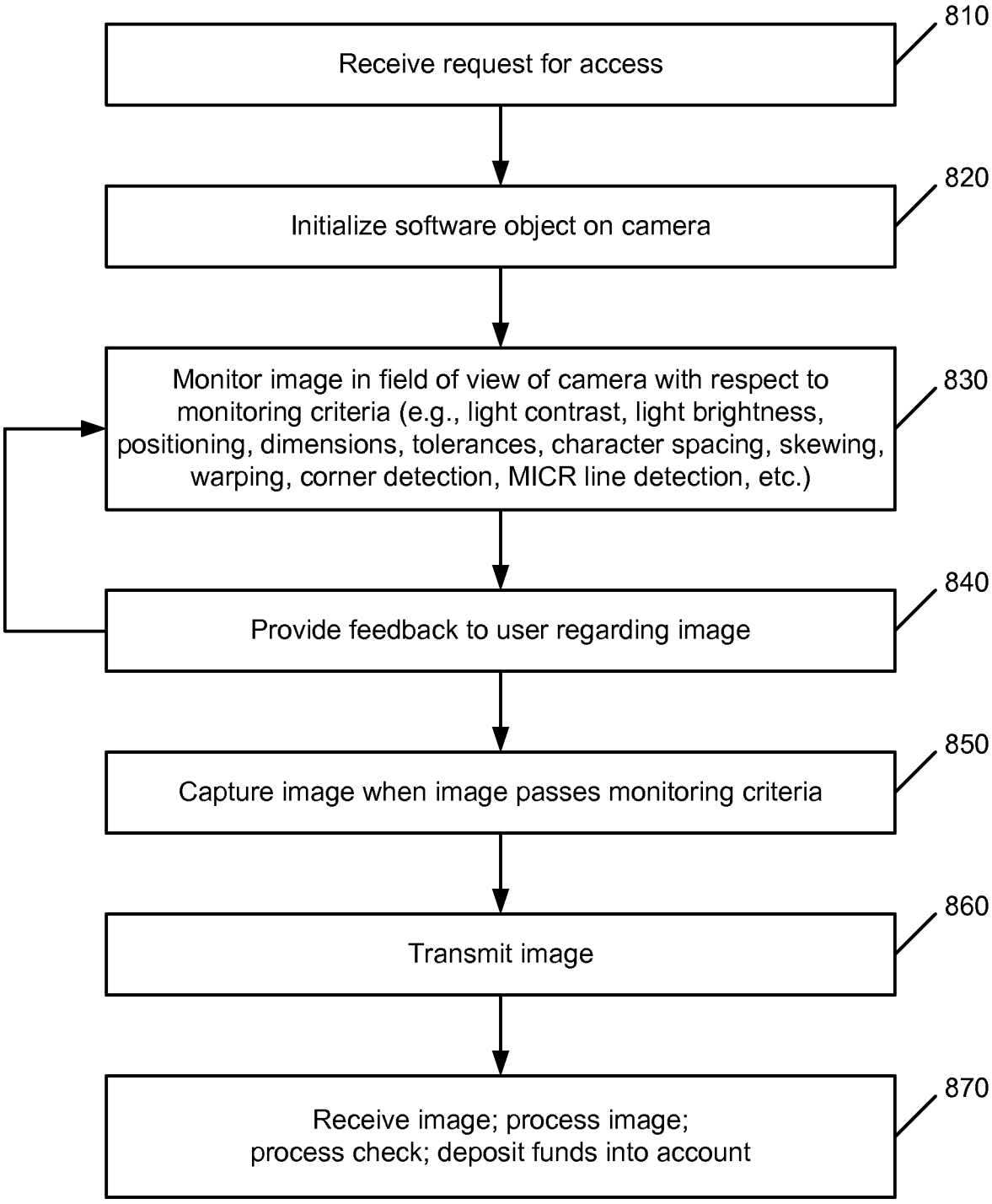

Receive request for access
810
Initialize software object on camera
820
Monitor image in field of view of camera with respect to monitoring criteria (e.g., light contrast, light brightness, positioning, dimensions, tolerances, character spacing, skewing, warping, corner detection, MICR line detection, 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

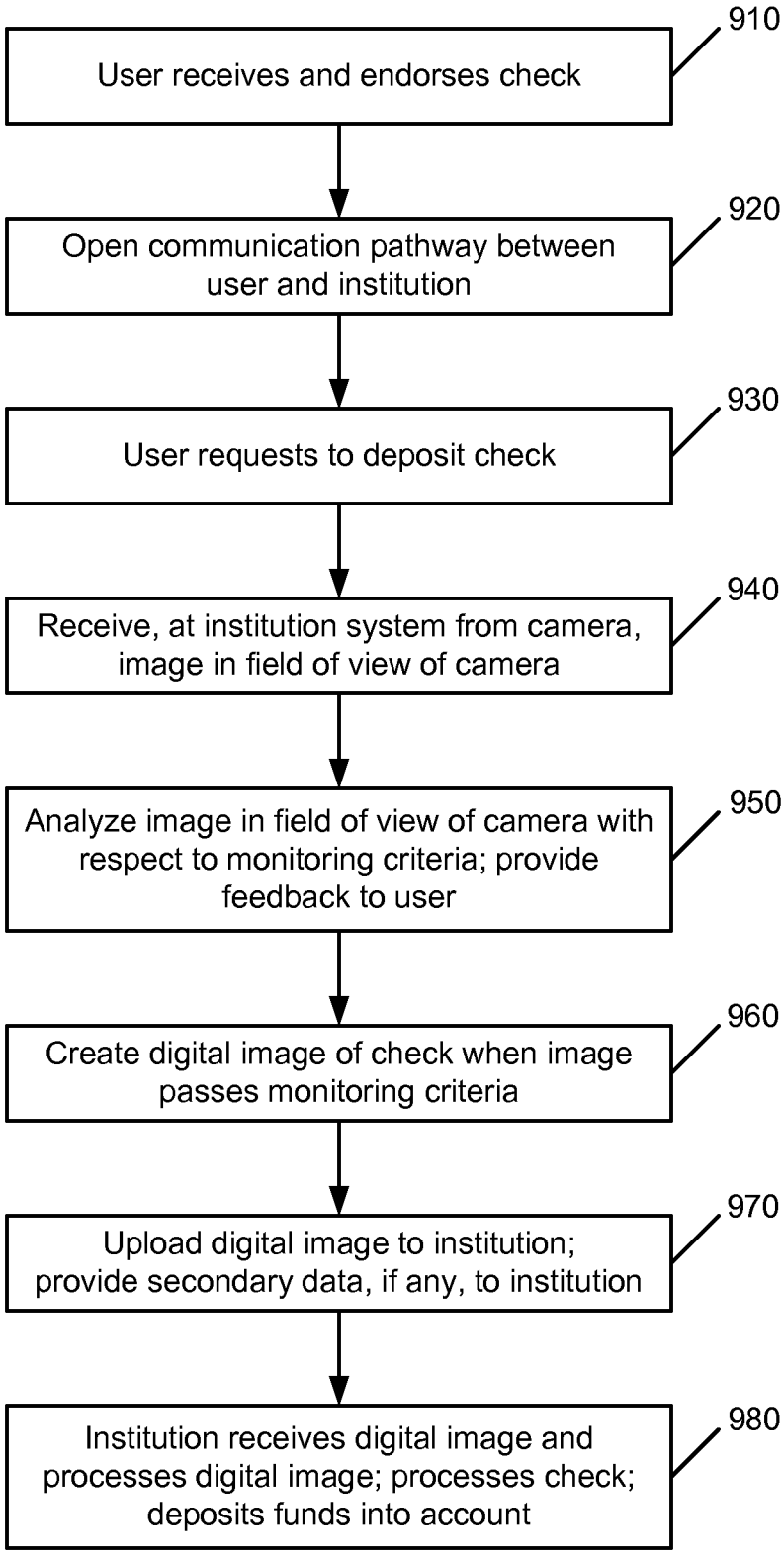

User receives and endorses check
910
Open communication pathway between user and institution
920
User requests to deposit check
930
Receive, at institution system from camera, image in field of view of camera
940
Analyze image in field of view of camera with respect to monitoring criteria; provide feedback 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

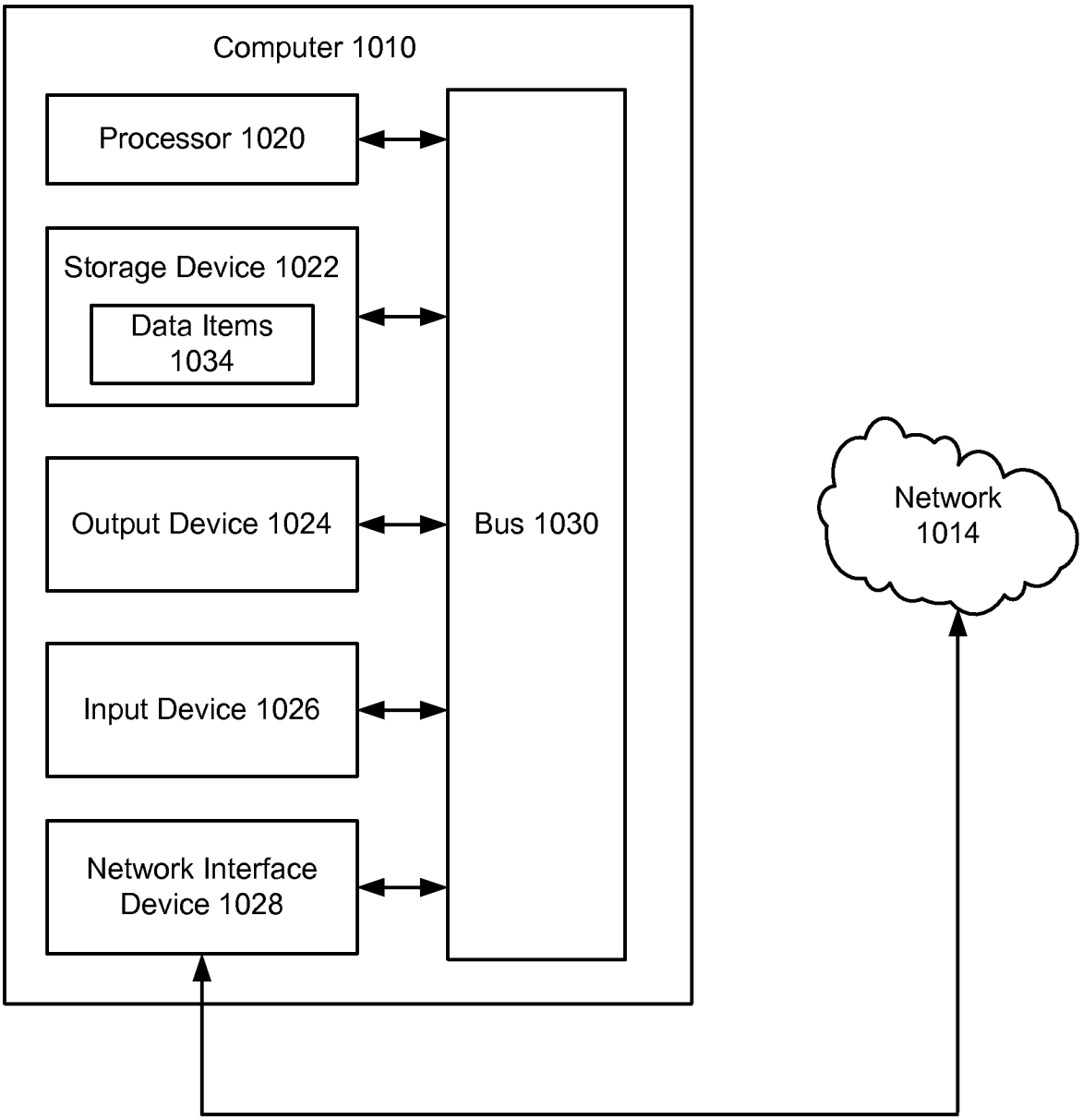

Computer 1010
Processor 1020
Storage Device 1022
Data Items 1034
Output Device 1024
Input Device 1026
Network Interface Device 1028
Bus 1030
Network 1014
1000

FIG. 10

UNITED STATES
PATENT AND TRADEMARK OFFICE

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**09/05/2025 11:52:57 PM Z ET**	**US-0691.12e**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	72181226	FILING DATE	-
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche Jr.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 9

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
2025-09-05_US-0691.12e_ADS.pdf		10	Application Data Sheet	2175 KB
2025-09-05_US-0691.12e_TrackOne-Request_adobe-printpdf.pdf		2	Track One Request	142 KB
2025-09-05_US-0691.12e_Drawings.pdf		8	Drawings-only black and white line drawings	86 KB
2025-09-05_US-0691.12e_Claims-Abstract.pdf		13	-	149 KB
2025-09-05_US-0691.12e_Claims-Abstract-CLM.pdf	(1-12)	12	Claims	125 KB

2025-09-05_US-0691.12e_Claims-Abstract-ABST.pdf	(13-13)	1	Abstract	62 KB
2025-09-05_US-0691.12e_Nonpublication-Request.pdf		2	Nonpublication request from applicant	231 KB
2025-09-05_US-0691.12e_Declarations.pdf		5	Oath or Declaration filed	324 KB
2025-09-05_US-0691.12e_POA.pdf		2	Power of Attorney	363 KB
2025-09-05_US-0691.12e_Spec_previewPrint PDF.pdf		31	Specification	6384 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
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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.

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 September 5, 2025
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.

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PTO/SB/35 (07-09)
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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-0691.12e

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

September 5, 2025 — 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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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.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) 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, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

What is claimed:

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer for controlling the camera, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

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, the determining including dividing the video frame into segments

comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion;

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

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;

a server, remote from the user's mobile device, comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the server to perform operations including:

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

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, the user's mobile device receiving an indication of a result of the server's processing

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after the transmitting the digital image of the check from the user's mobile device; and

a computer comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the computer to update 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 system of claim 1, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

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

6. The system 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.

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

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

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the system being configured to perform operations including:

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;

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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, the digital image of the check being the captured video frame or being based on the captured video frame; and

processing the 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; and

a bank computer programmed to update 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 and verifying that the digital image of the check is acceptable for mobile check deposit.

10. The system of claim 9, wherein the system is configured to perform additional operations including:

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 system of claim 9, further comprising one or more computers programmed to perform operations comprising the monitoring, the determining, or both the monitoring and the determining.

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

14. The system of claim 9, wherein the system is configured to perform additional operations including:

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,

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.

15. The system of claim 14, wherein 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 system of claim 11, wherein the one or more computers include the bank computer.

17. The system of claim 9, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

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

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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; and

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

a computer comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the computer to update 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.

19. The system of claim 18, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

23. The system of claim 18, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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,

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

25. The system of claim 18, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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

a mobile device of a user, the user’s mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user’s mobile device to perform operations including:

providing instructions to the user for capturing 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; and

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;

the system configured to perform image processing operations on an 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

a computer programmed to update 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 and the verifying that the image of the check is acceptable for mobile check deposit.

27. The system of claim 26, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

30. The system of claim 26, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

ABSTRACT

Embodiments include a system for mobile check deposit enabling auto-capture functionality via video frame processing. The system includes a mobile device with a camera, processor, and memory storing instructions that, when executed by the processor, configure the mobile device to generate a live video of a check in the camera's field of view, monitor the live video with respect to at least one monitoring criterion, and automatically capture a frame of the live video when that frame satisfies the monitoring criterion. The monitoring criterion may be based on light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and MICR line detection. The mobile device may be configured to confirm that mobile check deposit can go forward after optical character recognition (OCR) is performed on the check, a MICR line of the check is recognized, and an amount of the check is validated.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12e
	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.
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Inventor Information:

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

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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

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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-0691.12e
	Application Number	
Title of Invention	SYSTEM AND METHOD FOR MOBILE CHECK DEPOSIT ENABLING AUTO-CAPTURE FUNCTIONALITY VIA VIDEO FRAME PROCESSING	

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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-0691.12e	**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-0691.12e
	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	19038702	2025-01-27

Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
19038702	Continuation of	18593854	2024-03-01	12211095	2025-01-28

Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
18593854	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

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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

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

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).

Remove

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

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12e
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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 Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12e
	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. ☒

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			

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

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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	US-0691.12e
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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 ⓘ	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:

Remove

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)	2025-09-05
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 Number	
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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, VA 22313-1450.**

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 records.

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 CooperationTreaty.

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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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.**

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

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

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- [■] 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.

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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.

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

Signature: Charles Lee Oakes, III

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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.

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LEGAL NAME OF INVENTOR

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

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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-0691.12e

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)			

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Application Number	Filing Date

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

UNITED SERVICES AUTOMOBILE ASSOCIATION (USAA)

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

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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)		

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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.

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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.

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[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

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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

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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.

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[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.

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[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.

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[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

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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.

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[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

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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.

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[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

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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

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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

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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

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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

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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

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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-

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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,

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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

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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.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**09/05/2025 11:52:57 PM Z ET**	**US-0691.12e**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	72181226	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	**E202595N53558007**	**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($)	QUANTITY	ITEM TOTAL($)
1011	BASIC FILING FEE - UTILITY (PAPER FILING ALSO REQUIRES NON-ELECTRONIC FILING FEE UNDER 1.16(T))	350.00	1	350.00
1111	UTILITY PATENT APPL. SEARCH FEE	770.00	1	770.00
1311	PATENT APPL. EXAMINATION FEE	880.00	1	880.00
1056	FILING AN APPLICATION OR	4000.00	1	4000.00

	PRESENTATION OF BENEFIT CLAIM MORE THAN NINE YEARS AFTER EARLIEST BENEFIT DATE			
1817	REQUEST FOR PRIORITIZED EXAMINATION	4515.00	1	4515.00
1054	Non-DOCX Filing Surcharge	430.00	1	430.00
1830	PROCESSING FEE, EXCEPT IN PROVISIONAL APPLICATIONS	150.00	1	150.00
1202	EACH CLAIM IN EXCESS OF 20	200.00	10	2000.00
1201	EACH INDEPENDENT CLAIM IN EXCESS OF THREE	600.00	1	600.00
			TOTAL AMOUNT:	**$13,695.00**

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.

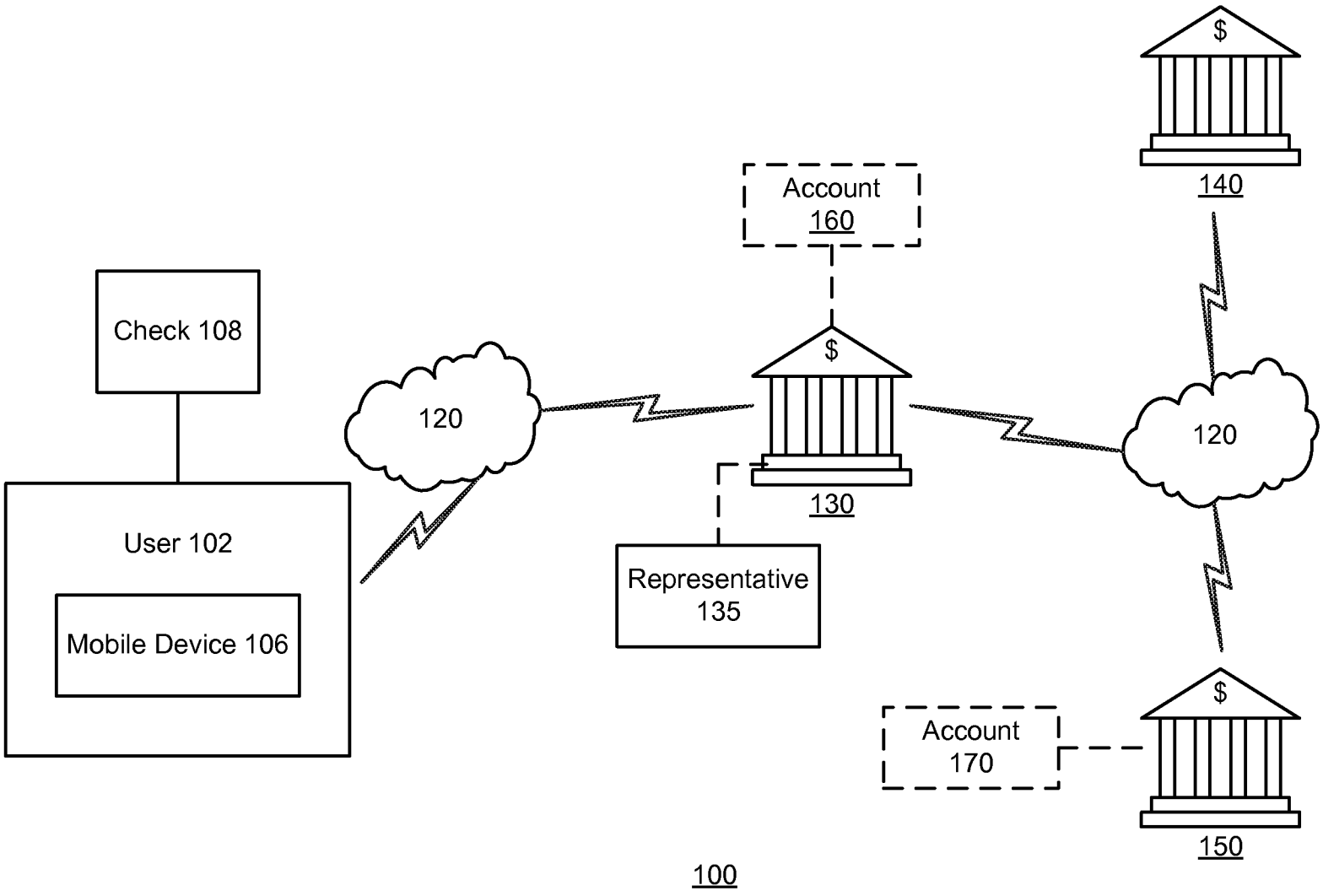
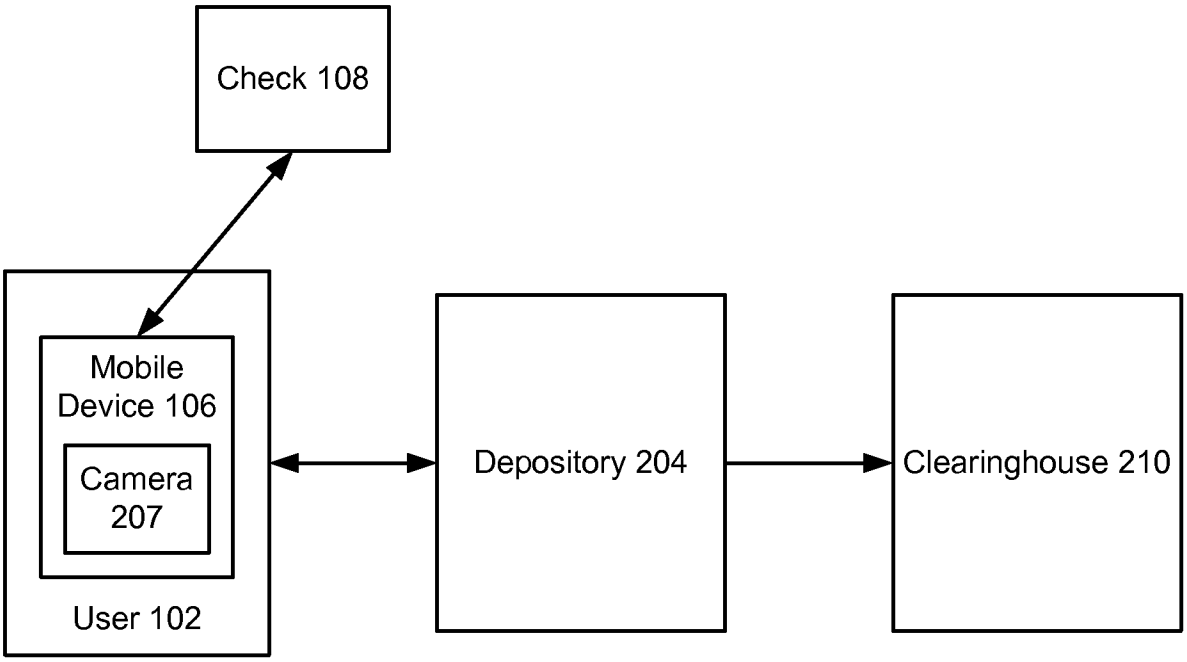

Check 108
User 102
Mobile Device 106
120
Account
160
$
130
Representative
135
$
140
120
Account
170
$
150
100

FIG. 1


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

200

FIG. 2

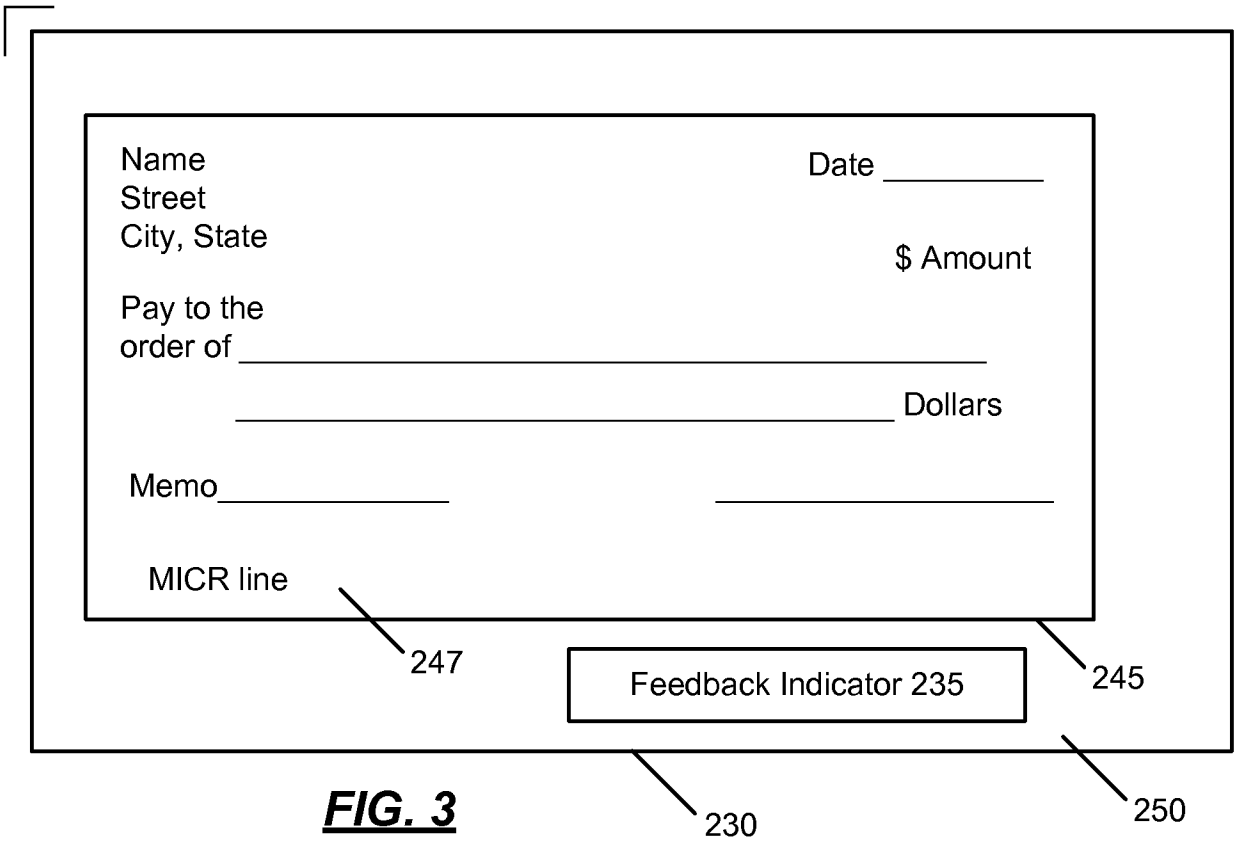

Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
247
245
Feedback Indicator 235
230
250

FIG. 3

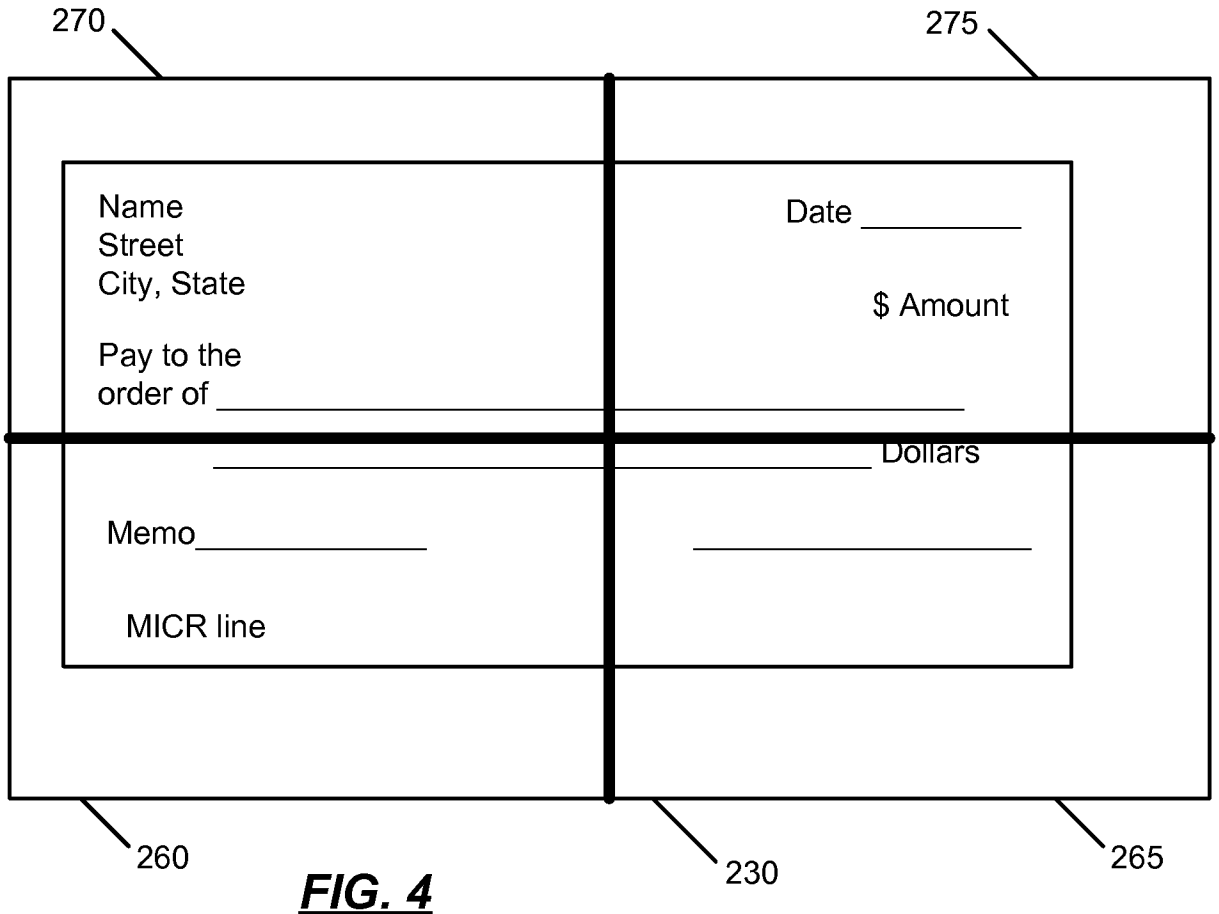
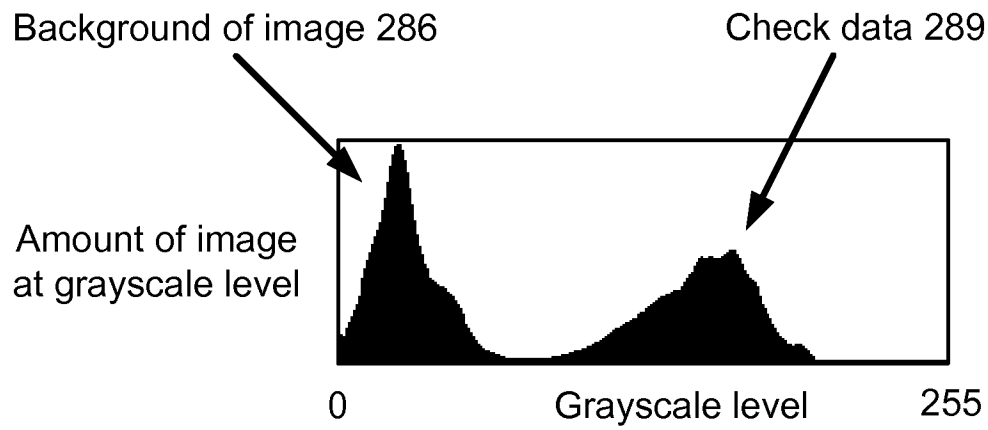
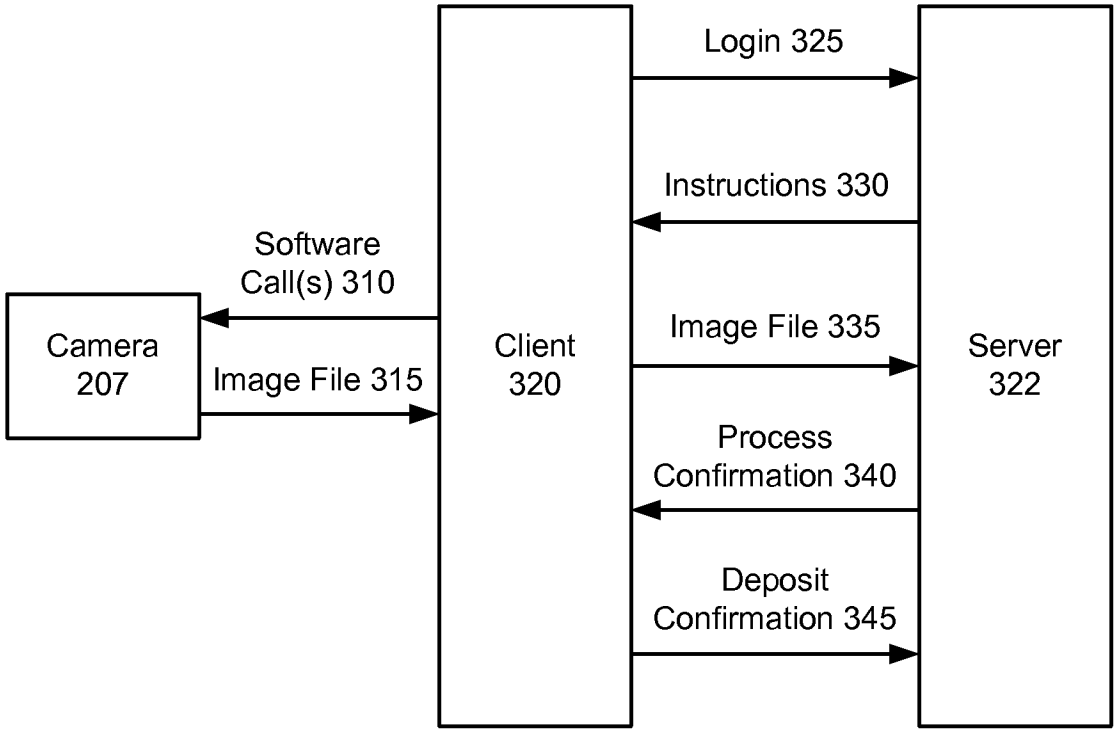

270
275
Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
260
230
265

FIG. 4



280

FIG. 5



300

FIG. 6

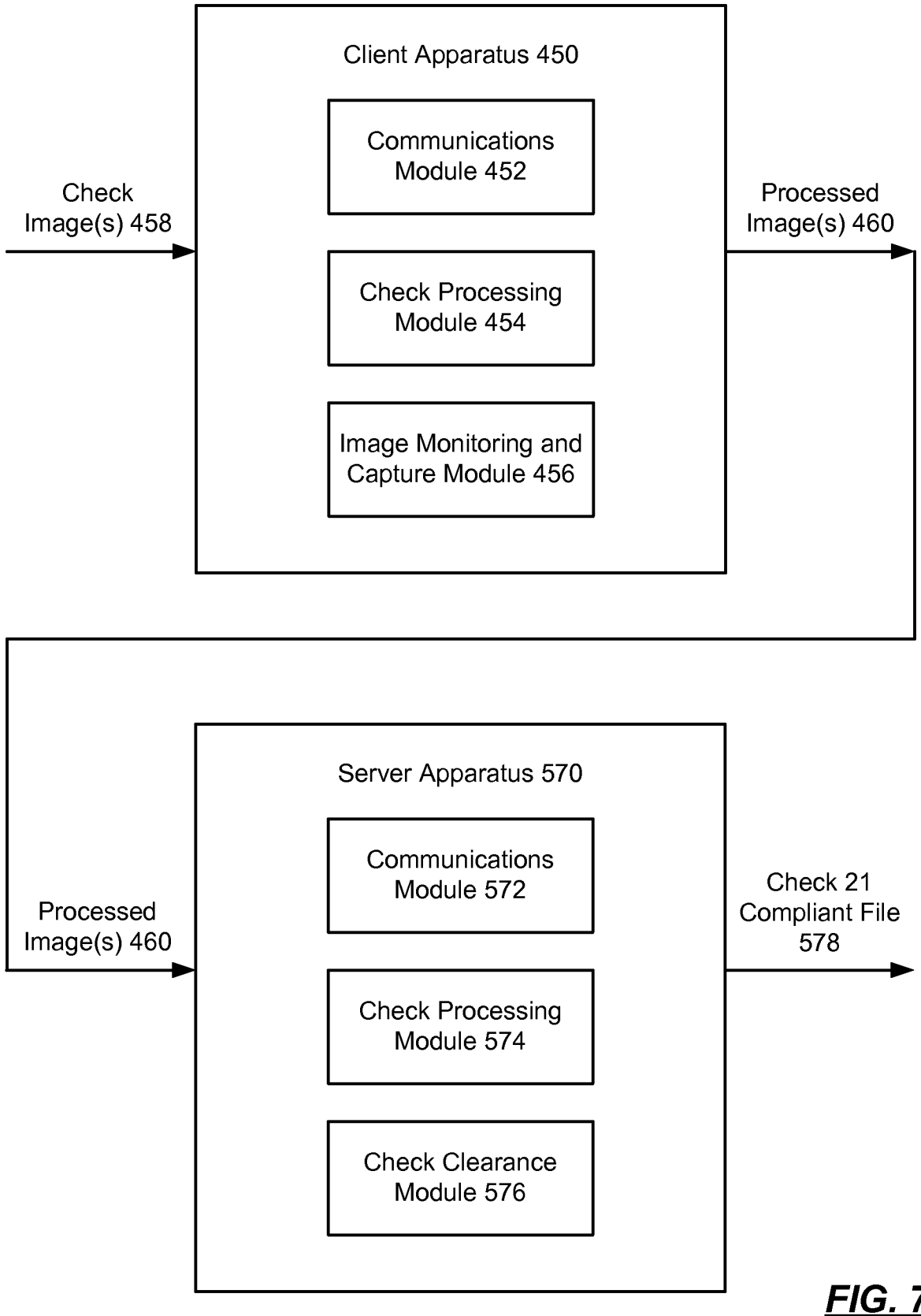

Client Apparatus 450
Communications Module 452
Check Processing Module 454
Image Monitoring and Capture Module 456
Check Image(s) 458
Processed Image(s) 460
Server Apparatus 570
Communications Module 572
Check Processing Module 574
Check Clearance Module 576
Processed Image(s) 460
Check 21 Compliant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

FIG. 7

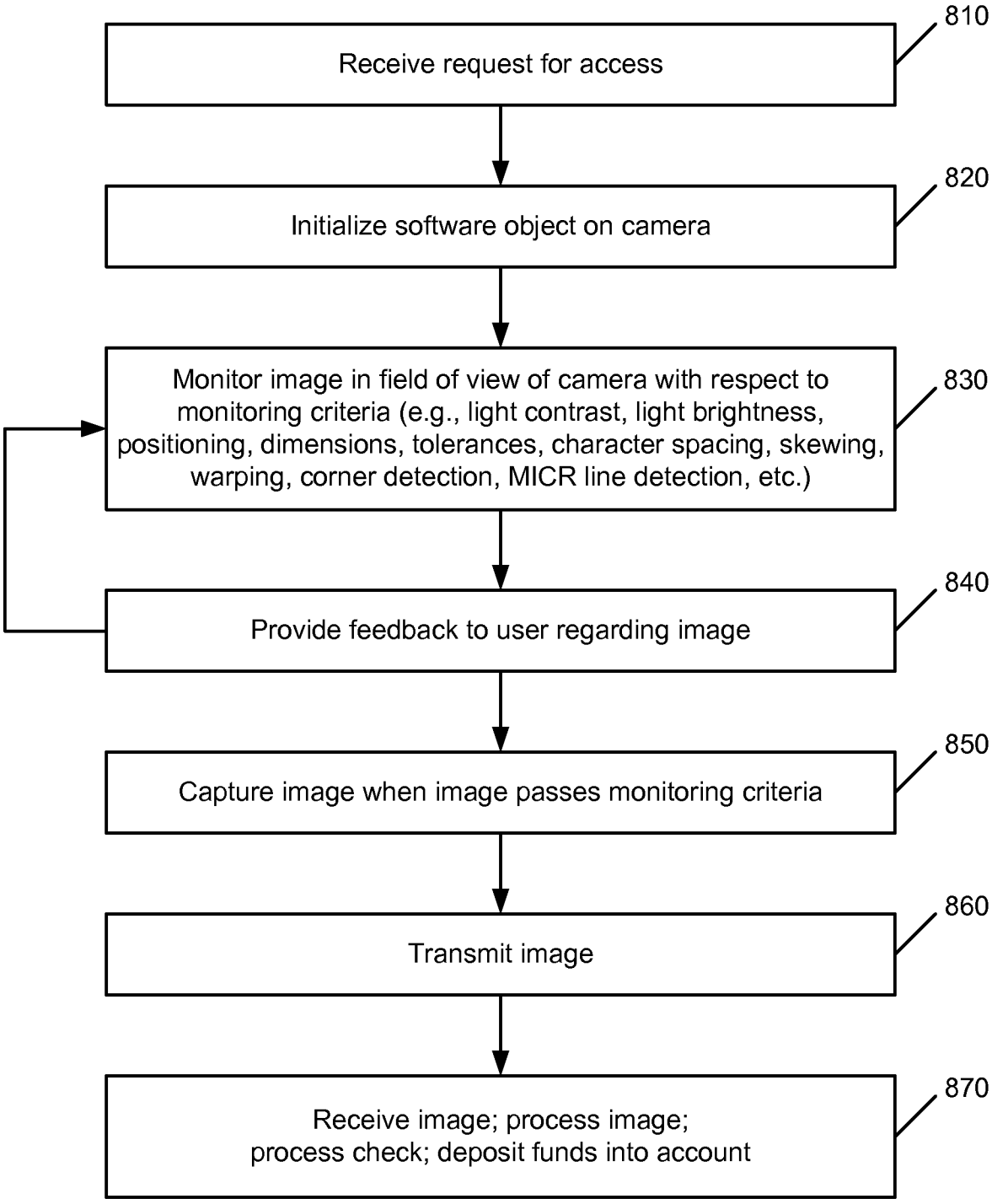

Receive request for access
810
Initialize software object on camera
820
Monitor image in field of view of camera with respect to monitoring criteria (e.g., light contrast, light brightness, positioning, dimensions, tolerances, character spacing, skewing, warping, corner detection, MICR line detection, 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

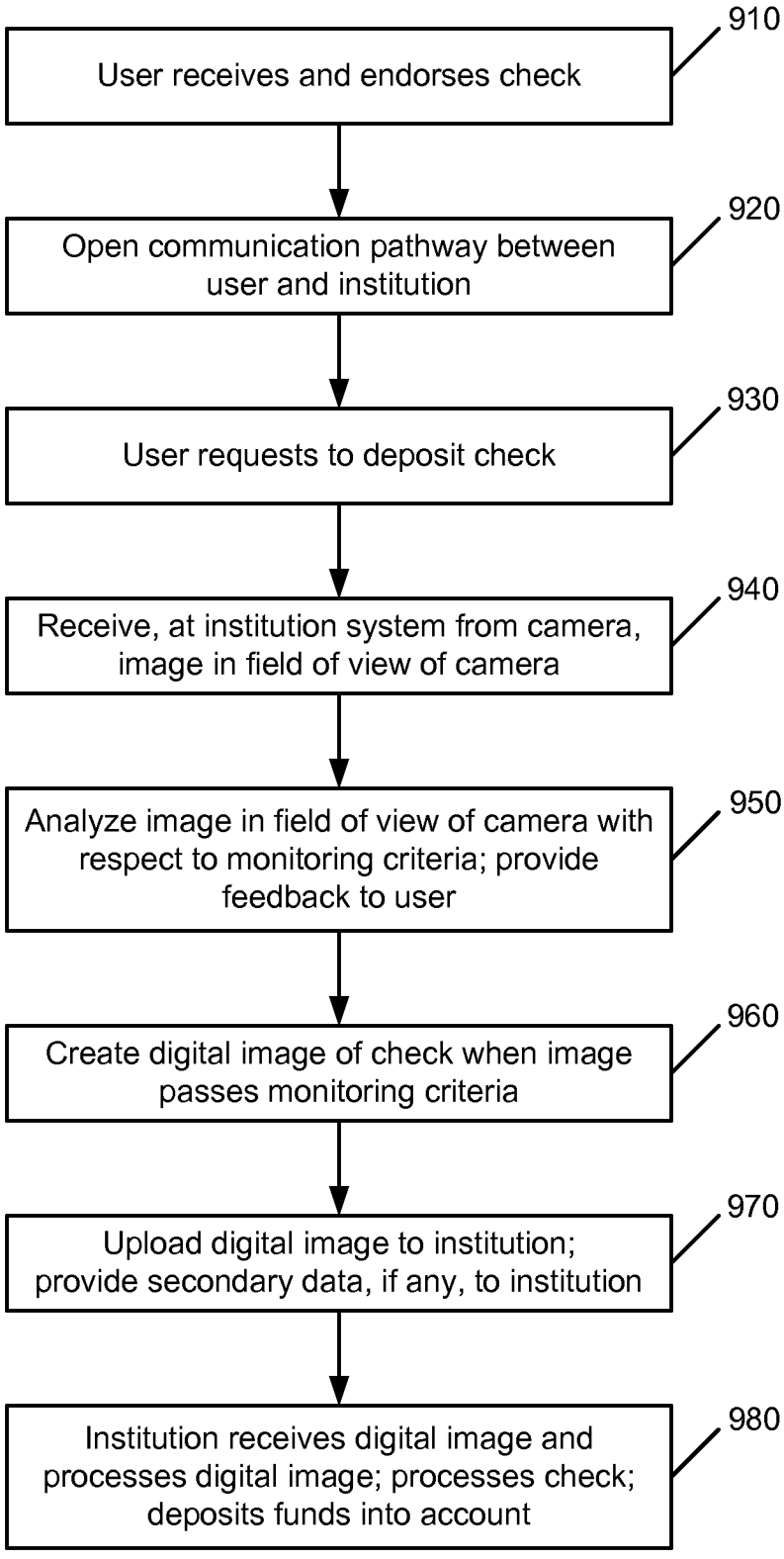

User receives and endorses check
910
Open communication pathway between user and institution
920
User requests to deposit check
930
Receive, at institution system from camera, image in field of view of camera
940
Analyze image in field of view of camera with respect to monitoring criteria; provide feedback 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

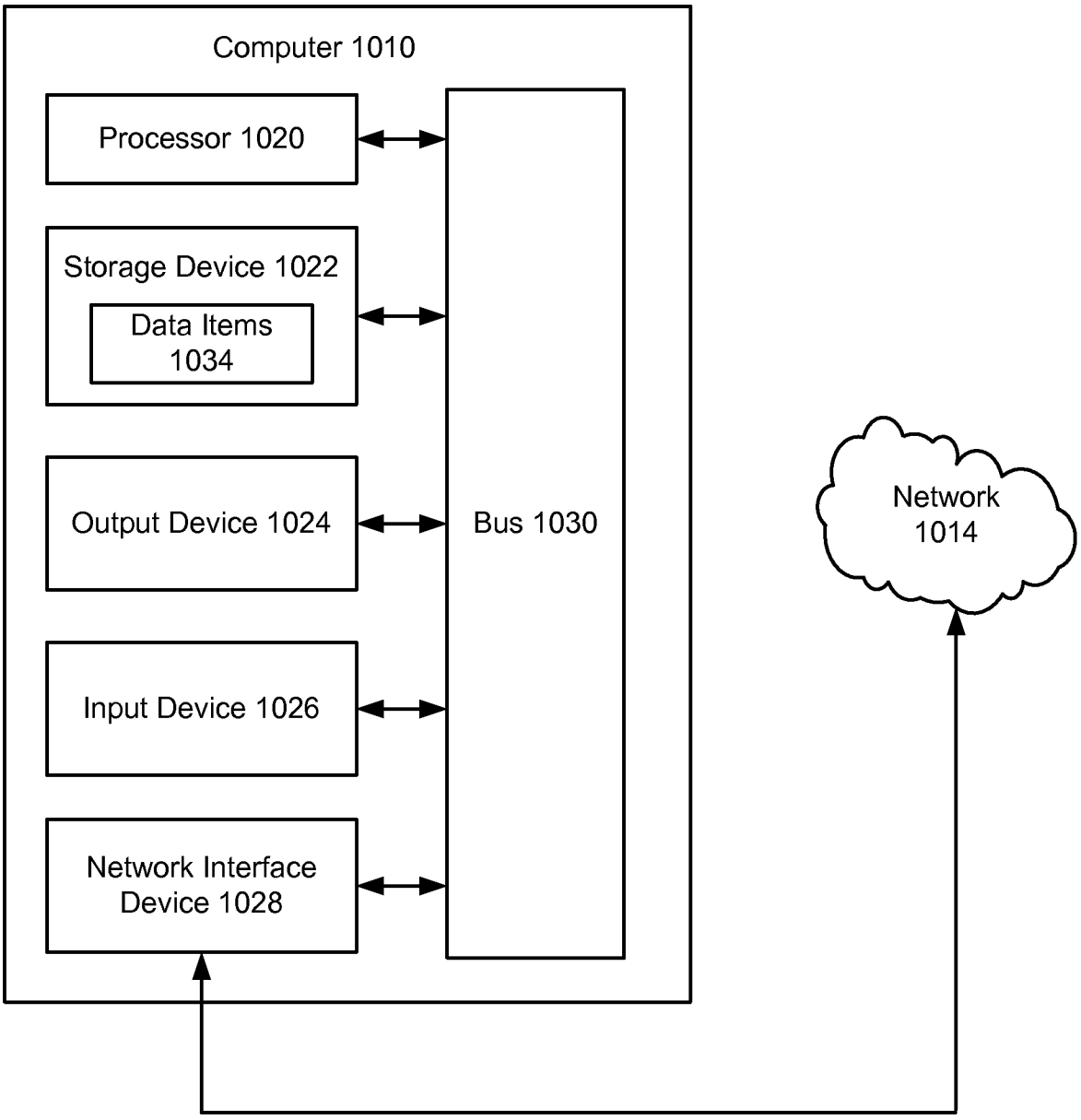

Computer 1010
Processor 1020
Storage Device 1022
Data Items 1034
Output Device 1024
Input Device 1026
Network Interface Device 1028
Bus 1030
Network 1014
1000

FIG. 10

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 19/321,167

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	350
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	770
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	880
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10			OR	x 200 =	2000
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 600 =	600
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	4600

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".

*** 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 found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
19/321,167	09/05/2025		5030	US-0691.12e | 56-10663	30	4

CONFIRMATION NO. 1975

FILING RECEIPT

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



Date Mailed: 09/26/2025

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.

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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 Applications for which benefit is claimed

This application is a CON of 19/038,702 01/27/2025
which is a CON of 18/593,854 03/01/2024 PAT 12,211,095
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: 09/25/2025

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 19/321,167**

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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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/321,167	09/05/2025	Michael Patrick Bueche JR.	US-0691.12e | 56-10663	1975

197306 7590 10/07/2025

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
10/07/2025	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
schreiner@carmichaelip.com
susan@carmichaelip.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 19/321,167	**Applicant(s)** Bueche et al.	
	Examiner FIKIRTE A GEREMEW	**Art Unit** OMBL	**AIA (FITF) Status** Yes

1. THE REQUEST FILED 05 September 2025 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) 756-193. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/FIKIRTE A GEREMEW/ PROGRAM SUPPORT SPECIALIST, OMBL	

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**11/30/2025 09:58:44 PM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	73377367	FILING DATE	09/05/2025
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Slater EP-0984410-A1.pdf	24	Foreign Reference	1880 KB
Takehara JP-2004023158 with translation.pdf	53	Foreign Reference	3087 KB
Yeo et al Submission of Transactions Adobe-print-pdf.pdf	10	Non Patent Literature	1813 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Slater EP-0984410-A1.pdf	32977E7698854E892BD930EE38B95AFED20A4F337C31F89D2

	8941FF35159C7A6925AAB978759B181A6FCFA7CEAF1FF8F6C1BBDCBCA5A8416D9862E26129FDF83
Takehara JP-2004023158 with translation.pdf	DD46413A03FB0141EB5B101CC4614BF1B30035756BDE67F8B8E4F19A407BDAA549930E83BCEBB5CE8DB118B78F260FD3164E4573BD1CF3BBBE4E7F0588758274
Yeo et al Submission of Transactions Adobe-print-pdf.pdf	1DCBA0C9C91EF5DA46A11563E7B5046218B013D3497F664219F9C961139648F9BD4E8496A4E39E00D7EFA9DC4DC37A0040AA88470C1BF78F5F5A8A0618E9933D

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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

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**11/30/2025 09:56:17 PM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	73377129	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	09/05/2025
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E2025ATL56535408**	**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)**

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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	Attorney Docket Number	US-0691.12e | 56-10663

	1	Plaintiff's Notice of Filing Claim Construction Presentation, filed in Civil Action No. 2:18-CV-245, dated May 23, 2019, 106 pgs.	☐
	2	PNC Bank to Offer Ease of Online Deposit Service Integrated QuickBooks to Small Business", RemoteDepositCapture.com, July 24, 2006, 2 pgs.	☐
	3	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.	☐
	4	Printout of news article dated February 13, 2008, announcing a Nokia phone providing audio cues for capturing a document image	☐
	5	Provisional patent application filed by Wells Fargo Bank, dated January 29, 2008, 134 pgs.	☐
	6	Public Law 108-100, 108 Congress; "An Act Check Clearing For the 21st Century Act", October 28, 2003, 117 STAT. 1177 (18 pgs)	☐
	7	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.	☐
	8	Ranjan, Amit, "Using a Camera with Windows Mobile 5", July 21, 2006	☐
	9	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)	☐
	10	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	☐
	11	Reed, John, "FT.com site: Mobile users branch out", ProQuest, Trade Journal, October 6, 2005	☐

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	Attorney Docket Number	US-0691.12e | 56-10663

	12	Remote Deposit Capture Basic Requirements, dated August 22, 2009, 1 pg.	☐
	13	Remote Deposit Capture.com Scanner Matrix, dated October 21, 2011, 3 pgs.	☐
	14	Remotedepositcapture, URL:www.remotedepositcapture.com, Cited in patent no. 7,900,822, as dated 2006 (5 pgs)	☐
	15	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)	☐
	16	RemoteDepositCapture.com, Remote Deposit Capture News Articles from July 6, 2006, "BankServ Announces New Remote Deposit Product Integrated with QuickBooks" (3 pgs)	☐
	17	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)	☐
	18	Reto Meier, Professional AndroidTM Application Development, Wiley Publishing (June 25, 2008)	☐
	19	Richey, J. C. et al., "EE 4530 Check Imaging," Nov. 18, 2008 (10 pgs).	☐
	20	Ritzer, J.R. "Hinky Dinky helped spearhead POS, remote banking movement", Bank Systems and Equipment, vol. 21, no. 12, Dec. 1984 (1 pg)	☐
	21	Rivlin, Alice M. et al., Chair, Vice Chair — Board of Governors, Committee on the Federal Reserve in the Payments Mechanism - Federal Reserve System, "The Federal Reserve in the Payments Mechanism", January 1998 (41 pgs)	☐
	22	Rockwell, The Megapixel Myth, KenRickwell.com, 2008, located on the Internet at: http://kenrockwell.com/tech/mpmyth.htm, 6 pgs.	☐

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	23	Rohs, M. et al., "A Conceptual Framework for Camera Phone-based Interaction Techniques", in PERVASIVE COMPUTING, Berlin Heidelberg, 2005, pp 171-189.	☐
	24	Rose, Sarah et al., "Best of the We: The Top 50 Financial Websites", Money, New York, Dec. 1999, vol. 28, Iss. 12 (8 pgs)	☐
	25	Rowles, Tony, USAA v. Wells Fargo No. 2:16-cv-245-JRGL e-mail correspondence dated January 24, 2019, 2 pgs.	☐
	26	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	☐
	27	SCH-i910 Portable Dualmode Smartphone User Guide by Samsung, Copyright 2009 Samsung Electronics Canada, downloadable from www.manualslib.com, 168 pgs.	☐
	28	Schindler, Scanner Pro Review (Dec. 27, 2016) retrieved from https://www.pcmag.com/reviews/scAnner-pro	☐
	29	Sechrest, Stuart et al., "Windows XP Performance", Microsoft, dated 6/1/2001, 20 pgs.	☐
	30	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,	☐
	31	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)	☐
	32	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	☐
	33	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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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	34	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).	☐
	35	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.	☐
	36	Sony Ericsson K800i - Product Overview, 2006, 2 pgs.	☐
	37	Sony Ericsson K800i, User Manual, Part 1, 2006, 98 pgs.	☐
	38	SoyBank Anywhere, "Consumer Internet Banking Service Agreement," December 6, 2004 (6 pgs).	☐
	39	Specifications for Electronic Exchange of Check and Image Data, DSTU X9.37 (Mar. 31, 2003)	☐
	40	Spencer, Harvey, "Controlling Image Quality at the Point of Capture" Check 21, Digital Check Corporation & HSA 2004	☐
	41	Spenser, Harvey, "White Paper Check 21 Controlling Image Quality At The Point of Capture", dated 2004, 7 pgs.	☐
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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)	2025-11-30
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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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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.**

Privacy Act Statement

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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.

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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.: 19/321,167 Examiner: TIEN C NGUYEN

Filed: September 5, 2025 Confirmation No.: 1975

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. 19/038,702, 18/593,854, 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-0691.12e | 56-10663) 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 30, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

Carmichael IP, PLLC
Cust. No. 135533

chris@carmichaelip.com
703-646-9251

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

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	1	Nokia N95 8GB User Guide, copyright 2009, (from the Wells Fargo Bank, N.A. IPR2019-00815, filed on March 20, 2019), Part 2 of 3, 6O pgs.	☐
	2	Nokia N95 8GB User Guide, copyright 2009, (from the Wells Fargo Bank, N.A. IPR2019-00815, filed on March 20, 2019), Part 3 of 3, 53 pgs.	☐
	3	Nokia N95 8GB User Guide, copyright 2009, located on the Internet at: https://www.nokia.com/en_int/phones/sites/default/files/user-guides/Nokia_N95_8GB_Extended_UG_en.pdf (excerpts attached as Exhibit 9 from the Defendant Wells Fargo Bank, N.A.'s Answer dat4ed August 14, 2018), 77 pgs.	☐
	4	Non-Final Office Action issue on U.S. Application 17/511,822 on September 16, 2022 (14538-731)	☐
	5	Non-Final Office Action issued on U.S. Application 14/293,159 on August 11, 2022 (14538-335)	☐
	6	Non-Final Office Action issued on U.S. Application 16/455,024 on September 7, 2022 (14538-662)	☐
	7	Non-Final Office Action issued on U.S. Application 17/071,678 on September 14, 2022 (14538-705)	☐
	8	Non-Final Office Action issued on U.S. Application 17/180,075 on October 4, 2022 (14538-715)	☐
	9	Non-Final Office Action issued on U.S. Application 17/568,849 on October 4, 2022 (14538-736)	☐
	10	Notice of Allowance from corresponding U.S. Appln No. 12/545,127 dated January 17, 2013 (7 pgs).	☐
	11	Notice of Allowance from corresponding U.S. Appln No. 12/545,127 dated October 15, 2014 (24 pgs).	☐

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	12	Office Action dated October 9, 2013 from corresponding U.S. Appln No. 12/545,127 (7 pgs).	☐
	13	Office Action from corresponding U.S. Appln No. 12/545,127 dated April 9, 2014 (6 pgs).	☐
	14	Online Deposit: Frequently Asked Questions, http://www.depositnow.com/faq.html, Copyright 2008 (1 pg).	☐
	15	Onlinecheck.com/Merchant Advisors, "Real-Time Check Debit", Merchant Advisors: Retail Check Processing Check Conversion, http://www.onlinecheck/wach/rcareal.htm, Cited in patent no. 7,900,822, as dated 2006 (3 pgs)	☐
	16	Oxley, Michael G., from committee on Financial Services; "Check Clearing For The 21st Century Act", 108th Congress, 1st Session House of Representatives report 108-132, June 2003 (20 pgs)	☐
	17	Oxley, Michael G., from the committee of conference; "Check Clearing For the 21st Century Act", 108th Congress, 1st Session Senate report 108-291, October 1, 2003 (27 pgs)	☐
	18	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.	☐
	19	Palacios, Rafael et al., "Automatic Processing of Brazilian Bank Checks". Cited in patent no. 7,900,822, as dated 2002 (28 pgs)	☐
	20	Panasonic Operating Instructions for Digital Camera/Lens Kit Model No. DMC-L1K, https://www.panasonic.com/content/dam/Panasonic/support_manual/Digital_Still_Camera/English_01-vqt0-vqt2/vqt0w95_L1_oi.pdf (attached as Exhibit 4 from the Defendant Wells Fargo Bank N.A.'s Answer dated August 14, 2018), 129 pgs.	☐
	21	Panini My Vision X Operator Manual, Panini, 2004, (cited in IPR2020-00093, US Patent No. 9,892,454), 51 pgs.	☐
	22	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.	☐

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	23	Parikh, T., "Mobile Phones and Paper Documents: Evaluating a New Approach for Capturing Microfinance Data in Rural India", CHI 2006 Proceedings, 2006, 10 pgs.	☐
	24	Parikh, T., "Using Mobile Phones for Secure, Distributed Document Processing in the Developing World", IEE Persuasive Computing, Vol. 4, No. 2, 2005, 9 pgs.	☐
	25	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.	☐
	26	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.	☐
	27	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.	☐
	28	Patel, Kunur, "How Mobile Technology is Changing Banking's Future" AdAge, September 21, 2009, 4 pages	☐
	29	Patel, Kunur, "How Mobile Technology is Changing Banking's Future", AdAge (September 21, 2009)	☐
	30	Patel, Kunur, Ad Age, "How Mobile Technology Ils Changing Banking's Future", dated September 21, 2009, 3 pgs.	☐
	31	Patent Disclaimer for US Patent No, 8,699,779, filed on March 4, 2019, 2 pgs.	☐
	32	Patent Disclaimer for US Patent No, 8,977,571, filed on February 20, 2019, 2 pgs.	☐
	33	Patent Disclaimer for US Patent No, 9,336,517, filed on March 4, 2019, 2 pgs.	☐

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	34	Patent Disclaimer for US Patent No, 9,818,090, filed on February 20, 2019, 2 pgs.	☐
	35	Patterson, Scott "USAA Deposit@Home — Another WOW moment for Net Banking", NextCU.com, 1/26/2007 (5 pgs)	☐
	36	Pbmplus — image file format conversion package, retrieved from https://web.archive.org/web/20040202224728/https://www.acme.com/software/pbmplus/	☐
	37	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	☐
	38	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	☐
	39	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	☐
	40	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	☐
	41	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	☐
	42	Petition filed by PNC Bank N.A. for Inter Partes Review of Patent 10,013,605, filed August 27, 2021, IPR2021-01399, 113 pages	☐
	43	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.	☐
	44	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.	☐

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	45	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.	☐
	46	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.	☐
	47	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.	☐
	48	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.	☐
	49	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.	☐
	50	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.	☐

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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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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.

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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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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☐ 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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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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

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	1	Claims as filed on February 12, 2013 for U.S. Appln No. 13/765,412 (1 pg).	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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):

☐ 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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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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

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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.

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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.

☐ 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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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.**

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.

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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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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]
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NON-PATENT LITERATURE DOCUMENTS Remove

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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	1	Zions Bancorporation, "Moneytech, the technology of money in our world: Remote Deposit," http://www.bankjunior.com/pground/moneytech/remote_deposit.jsp, 2007 (2 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.

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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

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First Named Inventor	Michael Patrick Bueche Jr.
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	Attorney Docket Number	US-0691.12e | 56-10663

	1	IPR Petition 2022-01593, Truist Bank v. United Services Automobile Association filed October 11, 2022	☐
	2	IPR2019-00815 Patent No. 9,818,090, Decision Denying Institution of Inter Parties Review, dated August 26, 2019, 28 pgs.	☐
	3	IPR2019-00815 Patent No. 9,818,090, Declaration of Peter Alexander, PhD. as filed in the IPR on March 20, 2019, 99 pgs.	☐
	4	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,	☐
	5	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.	☐
	6	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.	☐
	7	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.	☐
	8	IPR2019-00815 Patent No. 9,818,090, Petitioner's Supplementai Exhibit List, dated August 1, 2019, 5 pgs.	☐
	9	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.	☐
	10	IPR2019-00815, Decision Denying Institution (August 26, 2019)	☐
	11	IPR2019-00815, Declaration of Matthew A. Calman in Support of Patent Owner Preliminary Response, dated June 27, 2019, 25 pgs.	☐

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	12	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.	☐
	13	IPR2019-00815, Invalidity Chart, uploaded on June 27, 2019, 94 pgs.	☐
	14	IPR2019-00815, Supplemental Invalidity Chart, dated on June 27, 2019, 16 pgs.	☐
	15	IPR2019-00815, United Services Automobile Association ("USAA")'s Patent Owner Preliminary Response, dated June 27, 2019, 66 pgs.	☐
	16	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.	☐
	17	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.	☐
	18	IPR2019-01081, Declaration of Peter Alexander, Ph.D, dated June 5, 2019, 135 pgs.	☐
	19	IPR2019-01081, Final Written Decision (January 11, 2021)	☐
	20	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.	☐
	21	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.	☐
	22	IPR2019-01082, Final Written Decision (November 24, 2020)	☐

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	23	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.	☐
	24	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.	☐
	25	IPR2019-01083, Final Written Decision (November 24, 2021)	☐
	26	IPR2020-00090, Institution Decision (May 11, 2020)	☐
	27	IPR2020-00090, Termination Settlement (February 12, 2021)	☐
	28	IPR2020-00091, Institution Decision (May 11, 2020)	☐
	29	IPR2020-00091, Termination Settlement (February 12, 2021)	☐
	30	IPR2020-00092, Institution Decision (May 11, 2020)	☐
	31	IPR2020-00092, Termination-Settlement (February 12, 2021)	☐
	32	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.	☐
	33	IPR2020-00093, Decision Denying Institution (May 13, 2020)	☐

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	Application Number	19321167
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	34	IPR2020-00094, Decision Denying Institution (May 13, 2020)	☐
	35	IPR2020-00095, Institution Decision (June 2, 2020)	☐
	36	IPR2020-00095, Termination-Settlement (February 12, 2021)	☐
	37	IPR2020-00096, Institution Decision (June 2, 2020)	☐
	38	IPR2020-00096, Termination-Settlement (February 12, 2021)	☐
	39	IPR2020-00097, Institution Decision (June 2, 2020)	☐
	40	IPR2020-00097, Termination-Settlement (February 12, 2021)	☐
	41	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.	☐
	42	IPR2020-00882, Decision Denying Institution (November 6, 2020)	☐
	43	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.	☐
	44	IPR2020-00975, Decision Denying Institution (November 17, 2020)	☐

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	45	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.	☐
	46	IPR2020-00976, Decision Denying Institution (November 24, 2000)	☐
	47	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.	☐
	48	IPR2020-01101, Decision Denying Institution (January 26, 2021)	☐
	49	IPR2020-01516, Petition (August 25, 2020)	☐
	50	IPR2020-01516, Termination Settlement Pre-Institution (February 12, 2021)	☐

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EXAMINER SIGNATURE

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TIMING STATEMENT

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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

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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.

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First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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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).

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.

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☐ 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.

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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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.**

Privacy Act Statement

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	1	20160142625	A1	2016-05-19	Weksler et al.	
	2	20160335816	A1	2016-11-17	Thoppae et al.	
	3	20170039637	A1	2017-02-09	WANDELMER et al.	
	4	20170068421	A1	2017-03-09	CARLSON et al.	
	5	20170132583	A1	2017-05-11	Nair	

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	6	20170146602	A1	2017-05-25	Samp et al.	
	7	20170229149	A1	2017-08-10	Rothschild et al.	
	8	20170337610	A1	2017-11-23	Beguesse	
	9	20180025251	A1	2018-01-25	Welinder et al.	
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	12	20190122222	A1	2019-04-25	UECHI	
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	1	CBM2019-00028, Estridge, Bonnie "Is your phone smart enough?: The series that cuts through the technobabble to bring you the best advice on the latest gadgets", Coyright 2006 by XPRESS — A1 Nsr Media, 3 pgs.	☐
	2	CBM2019-00028, Jewell, Mark "Cell Phone Shipments Reach Record 208M", Copyright 2005 by Associated Press, 1 pg.	☐
	3	CBM2019-00028, Lawler, Ryan "Apple shows Intel-based Macs, surge in revenue", Copyright 2006 by The Yomiuri Shimbun, 2 pgs.	☐
	4	CBM2019-00028, Malykhina, Elena "Get Smart", Copyright 2006 by ProQuest information and Learning Company, 6 pgs.	☐
	5	CBM2019-00028, Nasaw, Daniel "Viruses Pose threat to 'Smart' Cellphones — Computer Programs Could Cripple Devices and Shut Down Wireless Networks", Copyright 2004 by Factiva, 2 pgs.	☐
	6	CBM2019-00028, Nokia 9500 Communicator user Guide, Copyright 2006 by Nokia Corporation, 112 pgs.	☐

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	7	CBM2019-00028, Palm Treo 700W Smartphone manual, Copyright 2005 by Paim, Inc., 96 pgs.	☐
	8	CBM2019-00028, Robinson, Daniel, "Client Week — Handsets advance at 3GSM", Copyright 2004 by VNU Business Publications Ltd., 2 pgs.	☐
	9	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.	☐
	10	CBM2019-00028, United Services Automobile Association ('USAA')'s Patent Owner Preliminary Response, dated July 8, 2019, 73 pgs.	☐
	11	CBM2019-00028, Wong, May "HP unveils new mobile computers", Copyright 2006 by The Buffalo News, 2 pgs.	☐
	12	CBM2019-00029 Patent No. 10,013,605, Declaration of Peter Alexander, Ph.D., dated March 28, 2019, 76 pgs.	☐
	13	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.	☐
	14	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.	☐
	15	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.	☐
	16	CBM2019-00029, Decision Denying Institution (October 1, 2019)	☐
	17	CBM2019-00029, Declaration of Matthew A. Calman in Support of Patent Owner Preliminary Response, dated July 17 2019, 29 pgs.	☐

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	18	CBM2019-00029, Defendant's Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 31, 2019, 28 pgs.	☐
	19	CBM2019-00029, HP User Guide, Additional Product Information, Copyright 2006 by Hewlett-Packard Development Company, L.P., 204 pgs.	☐
	20	CBM2019-00029, Palenchar, Joseph, "PDA Phone Adds WiFi VoIP, Turn-By-Turn GPS Navigation", Copyright 2006 by Reed Business Information, 2 pgs.	☐
	21	CBM2019-00029, Pocket PC User Manual, Version 1, dated May 2006 by Microsoft, 225 pgs.	☐
	22	CBM2019-00029, United Services Automobile Association (USAA)'s Patent Owner Preliminary Response, dated July 17, 2019, 76 pgs.	☐
	23	CBR online, "Diebold launches ATM depository technology", October 4, 2007, 5 Pgs.	☐
	24	Century Remote Deposit High-Speed Scanner User's Manual Release 2006, (Century Manual), Century Bank, 2006, (32 pgs).	☐
	25	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.	☐
	26	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.	☐
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	28	Cheq Information Technology White Paper, "Teller Scanner Performance and Scanner Design: Camera Position Relative to the Feeder", dated 2005, 7 pgs.	☐

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	29	Chiang, Chuck, The Bulletin, "Remote banking offered", http://bendbulletin.com/apps/pbcs.dll/article?AID=/20060201/BIZ0102/602010327&templ..., May 23, 2008 (2 pgs).	☐
	30	Claim Construction Memorandum Opinion and Order, filed in Civil Action No. 2:18-CV-245, dated June 13, 2019, 48 pgs.	☐
	31	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.	☐
	32	Claims as filed January 24, 2018 for U.S. Appln No. 15/878,821 (5 pgs).	☐
	33	Claims as filed January 31, 2018 for U.S. Appln No. 15/884,990 (6 pgs).	☐
	34	Claims as filed May 18, 2018 for U.S. Appln No. 15/983,983 (3 pgs).	☐
	35	Claims as filed on April 1, 2013 for U.S. Appln No. 13/854,521 (5 pgs).	☐
	36	Claims as filed on April 3, 2008 for U.S. Appln No. 12/062,163 (3 pgs).	☐
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	48	Claims as filed on December 29, 2005 for U.S. Appln No. 11/321,027 (3 pgs).	☐
	49	Claims as filed on December 8, 2010 for U.S. Appln No. 12/963,513 (7 pgs).	☐
	50	Claims as filed on December 9, 2015 for U.S. Appln No. 14/964,279 (5 pgs).	☐

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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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☐ See attached timing statement under 37 CFR 1.97(e).

☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	45	Nixon, Julie et al., "Fiserv Research Finds Banks are Interested in Offering Mobile Deposit Capture as an," Fiserv, Inc. Brookfield, Wis., (Business Wire), (02/20/2009), 2 pgs.	☐
	46	Nokia N73 – Full phone specifications	☐
	47	Nokia N90 Phone Features, 2005, 4 pgs.	☐
	48	Nokia N90 Review Digital Trends, dated February 11, 2019, obtained from the internet at: https://www.digitaltrends.com/cell-phone-reviews/nokia-n90-review/, 11 pgs.	☐
	49	Nokia N90 User Guide, 2005, 132 pgs.	☐
	50	Nokia N95 8GB User Guide, copyright 2009, (from the Wells Fargo Bank, N.A. IPR2019-00815, filed on March 20, 2019), Part 1 of 3, 67 pgs.	☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
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Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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).

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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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
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	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**11/30/2025 09:56:17 PM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	73377129	FILING DATE	09/05/2025
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 100

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
21-1989.OPINION.5-20-2022_1954430.pdf	27	Non Patent Literature	200 KB
23-1639.OPINION.6-12-2025_2529490.pdf	13	Non Patent Literature	136 KB
23-1687.OPINION.6-12-2025_2529482.pdf	25	Non Patent Literature	203 KB
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Ref Zhu CN1967565A translation Adobe-print-pdf.pdf	14	Foreign Reference	2538 KB
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IPR2022-01593 DI.pdf	A11FFBE14E031B0DD0FCF85B0A8E4788C8B3B4DCFA6F4389 A28162233DF328A3C9791D6AA567B3E9B5747A5F9B084921F9 8A4B953CB3CE0CBCEACB59532A1F57
IPR2022-01593 Termination Settlement Post-Institution.pdf	B4AEFF4C46F33464744C35DBDD25CDB2E99C3BF8BBC630F3 CA8D3DB43AF55B8AD33BC3D3B4262643E82FB8EFD1752458 2F840D70714570C9E5863DC49EEBCF23

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IPR2023-00829 Petition.pdf	0B1543207A8B578B0AC9DB03460B71B309445DDBA15DDA9C37B1F58DCE4F45FEE1FD29FC07F65C50C9CE7D5DCA4937509EB30EA87F74BD133BECF6907E03EA5C
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	1	IPR2020-01650, Decision Denying Institution (March 9, 2021)	☐
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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
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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).

☒ 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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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.**

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.
19/321,167	09/05/2025	Michael Patrick Bueche JR.	US-0691.12e | 56-10663	1975

197306 7590 12/22/2025

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

EXAMINER
NGUYEN, TIEN C

ART UNIT	PAPER NUMBER
3694	

NOTIFICATION DATE	DELIVERY MODE
12/22/2025	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
schreiner@carmichaelip.com
susan@carmichaelip.com

Office Action Summary	Application No. 19/321,167	Applicant(s) Bueche et al.	
	Examiner TIEN C NGUYEN	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 --

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 9/5/2025.

☐ 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) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-30 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 _____ 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 the Claims

1. The following office action in response to the application filed on 9/25/2025.

2. Claims 1-30 were previously presented.

3. Therefore, claims 1-30 are pending and addressed below.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope

of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit http://www.uspto.gov/forms/. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

5. Claims 1-30 of the claimed invention are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 12,211,095. Although the claims at issue are not identical, they are not patentably distinct from each other because claim 1 of U.S. Patent No. 12,211,095 discloses "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". However, claim 1 of instant application discloses "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, the determining including dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion". It would have been obvious to one having it would have been obvious to a person of ordinary skill in the art just before the effective filing date of the claimed invention to substitute "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" with "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, the determining including dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion" because the video frame of the live video of the

check would be determined more accurately and efficiently before submitting the check for deposit.

6. Claims 1, 9, 18 and 26 of the current application is rejected as unpatentable on the ground of nonstatutory obviousness-type double patenting over claims 1, 5, 10 and 14 of U.S. Patent No. 12.159,310.

Both claims 1, 9, 18 and 26 of the present application and claims 1, 5, 10 and 14 of U.S. Patent No. 12.159,310 are directed to a method and a system for mobile check deposit auto-capture functionality via video frame processing. Thus, claims 1, 5, 10 and 14 of U.S. Patent No. 12.159,310 teaches or suggests all of the limitations of claims 1, 9, 18 and 26 of the instant application. However, claims 1, 5, 10 and 14 of U.S. Patent No. 12.159,310 also contains additional limitations not found in claims 1, 9, 18 and 26 of the instant application, such as the limitations "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" of claims 1, 5, 10 and 14 of U.S. Patent No. 12.159,310. Accordingly, claims 1, 5, 10 and 14 of U.S. Patent No. 12.159,310 application is directed to a species of claims 1, 9, 18 and 26 of the current application (see MPEP § 804(II)(B)(2)).

7. Claim 1 of the current application is provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of co-pending U.S. Application No. 19/038,702. Although the claims at issue are not identical, they are not patentably distinct from each other because claim 1 of U.S. Application No. 19/038,702 discloses "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". However, claim 1 of

instant application discloses "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, the determining including dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion". It would have been obvious to one having it would have been obvious to a person of ordinary skill in the art just before the effective filing date of the claimed invention to substitute "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" with "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, the determining including dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion" because the video frame of the live video of the check would be determined more accurately and efficiently before submitting the check for deposit.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

8. Claim 1 of the current application is provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of co-pending U.S. Application No. 18/966,097 (filed on 6/30/2025). Both claim 1 of the present application and claim 1 of U.S. Application No. 18/966,097 are directed to a method and a system for mobile check deposit auto-capture functionality via video frame processing. Thus, claim 1 U.S. Application No. 18/966,097 teaches or suggests all of the limitations of claim 1 of the instant application. However, claim 1 U.S. Application No. 18/966,097 also contains additional limitations not found in claim 1 of the instant application, such as the limitations "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". Accordingly, claim 1 U.S. Application No. 18/966,097 is directed to a species of claim 1 of the current application (see MPEP § 804(II)(B)(2)).

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Nguyen whose telephone number is 571-270-5108. The examiner can normally be reached on Monday-Thursday (6am-2pm EST).

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 571-270-6108.

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.

/TIEN C NGUYEN/
Primary Examiner, Art Unit 3694

/BENNETT M SIGMOND/
Supervisory Patent Examiner, Art Unit 3694

Notice of References Cited	Application/Control No. 19/321,167	Applicant(s)/Patent Under Reexamination Bueche et al.	
	Examiner TIEN C NGUYEN	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-8977571-B1	2015-03-10	Bueche, Jr.; Michael Patrick	G06V30/2253	705/45
*	B	US-20140074709-A1	2014-03-13	Green; Travis Harrison Kroll	G06Q40/02	705/44
*	C	US-20100082470-A1	2010-04-01	Walach; Eugeniusz	G06Q40/02	455/466
*	D	US-20090313167-A1	2009-12-17	Dujari; Rajeev	G06Q40/06	705/42
*	E	US-20090167870-A1	2009-07-02	Caleca; Serge	H04N1/00244	348/211.3
*	F	US-20090171819-A1	2009-07-02	Emde; Martin Von der	G06Q40/12	705/30
*	G	US-20090171825-A1	2009-07-02	Roman; Alan P.	G06Q20/042	382/137
*	H	US-20090108080-A1	2009-04-30	Meyer; John F.	G06Q20/102	235/494
*	I	US-20090110281-A1	2009-04-30	Hirabayashi; Kazunori	G06V10/96	382/180
*	J	US-20090060396-A1	2009-03-05	Blessan; Marco	G06V30/18086	382/317
*	K	US-20090046938-A1	2009-02-19	Yoder; Gabriel J.	G06T9/20	382/242
*	L	US-20080316542-A1	2008-12-25	Mindrum; Gordon Scott	G06Q10/10	358/442
*	M	US-20080262953-A1	2008-10-23	Anderson; Don	G06Q40/12	705/35

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
	U	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).
	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
	19/321,167	Bueche et al.
	Examiner	Art Unit
	TIEN C NGUYEN	3694

CPC - Searched*		
Symbol	Date	Examiner
G06Q	11/29/2025	

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164)	11/29/2025	

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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 search.	11/29/2025	
Assignee search.	11/29/2025	
Inventors search.	11/29/2025	
IP Plus.com NPL searches.	11/29/2025	
Search SN# 18/593856,18/593854,19/038702,16/712182 and 15/792,966.	11/29/2025	

/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	19/321,167	Bueche et al.
	Examiner	Art Unit
	TIEN C NGUYEN	3694

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
705/ G06Q	35/ 40/02	11/29/2025	
705/ G06T	35/ 7/13	11/29/2025	
705/ G06T	35/ 2207/20164	11/29/2025	
705/ G06V	35/ 10/60	11/29/2025	

/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	212714	(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:42 AM
L2	2996	((("UNITED") near3 ("SERVICES") near3 ("AUTOMOBILE") near3 ("ASSOCIATION") near3 ("(USAA)"))).AS,AANM.	(US-PGPUB; USPAT)	OR	ON	ON	2025/11/29 06:43 AM
L3	514	((("BUECHE") near3 ("Michael")) OR (("PRASAD") near3 ("Bharat")) OR (("LIANG") near3 ("Minya")) OR (("MEDINA") near3 ("Reynaldo")) OR (("OAKES") near3 ("Charles"))).INV.	(US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT)	OR	ON	ON	2025/11/29 06:43 AM
L4	50	(Artificial Intelligence) Similar to: 19/321,167 with 0 CPC Selections and 0 Text Selections Text: (US-12169811-B1 OR US-8542921-B1 OR US-9390574-B2 OR US-20110206267-A1 OR US-12400257-B1 OR US-12175438-B1 OR US-8837806-B1 OR US-8712143-B2 OR US-20110211746-A1 OR US-8995012-B2 OR US-8059881-B1 OR US-9317745-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/11/29 06:44 AM

		EP-1429298-A2 OR US-8296236-B2 OR US-20160180168-A1 OR US-9639750-B2 OR WO-2025080792-A1 OR US-20210090086-A1 OR US-20160180165-A1 OR US-20150117749-A1 OR US-8620797-B1 OR US-8433123-B1 OR US-20120113489-A1 OR US-8620058-B2 OR US-20130094751-A1 OR US-20210256641-A1 OR US-20220245607-A1 OR US-8326015-B2 OR CA-2798424-C OR KR-20060014709-A OR US-20100208976-A2 OR TW-M598458-U OR US-8249983-B2 OR US-20170193596-A1 OR US-20150100400-A1 OR US-20250322395-A1 OR US-20140037183-A1 OR US-8437529-B1 OR KR-100438997-B1 OR TW-M594757-U OR CA-2798424-A1 OR US-8346578-B1 OR KR-101733467-B1 OR US-20150052042-A1 OR TW-M592556-U OR US-10402898-B2 OR US-7778457-B2 OR US-20100150424-A1 OR WO-0195062-A2 OR US-20030208438-A1).did.					
L5	35	L1 AND L4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT;	OR	ON	ON	2025/11/29 06:45 AM

			IBM_TDB)				
L6	3	L2 AND L4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:46 AM
L8	127	("8542921").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:47 AM
L9	53	L8 AND L1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:48 AM
L10	0	("12211095").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:48 AM
L11	4860	(mobil$3 OR (smart phone) OR (mobile phone) OR (cell phone)) WITH (check$3) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:50 AM
L12	4978	(mobil$3 OR (smart	(US-PGPUB; USPAT;	OR	ON	ON	2025/11/29

		phone) OR (mobile phone) OR (cell phone)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3)	USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				06:53 AM
L13	184605	(captur$3 OR obtain$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (imag$3 OR pictur$3 OR photo$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:55 AM
L14	3328	(generat$3 OR creat$3) near7 (video OR (live video)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:56 AM
L15	1678	(overlaying OR overlay OR overlaid$3) WITH (alignment$3 OR align$3) near7 (guide OR guidanc$3 OR instruction$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2025/11/29 06:59 AM

			PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L16	3207	(view$3 OR (camera view)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:00 AM
L17	6052	(monitor$3) near7 (video OR (live video)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:00 AM
L18	5278	(video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:00 AM
L19	4860	L11 AND L12	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2025/11/29 06:01 AM

			AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L20	1226	L19 AND L13	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:01 AM
L21	38	L20 AND L14	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:01 AM
L22	2	L21 AND L15	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE,	OR	ON	ON	2025/11/29 06:01 AM

			SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L23	2	L22 AND L16	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:01 AM
L24	2	L23 AND L17	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:01 AM
L25	2	L24 AND L18	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:01 AM
L26	212714	(G06Q40/02 OR G06T7/13 OR G06V10/60 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/11/29 06:01 AM

		G06T2207/20164).cpc.	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L27	2	L26 AND L25	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:02 AM
L28	1182	("1748489" | "2292825" | "3005282" | "3341820" | "3576972" | "3593913" | "3620553" | "3648242" | "3800124" | "3816943" | "4002356" | "4027142" | "4060711" | "4070649" | "4128202" | "4136471" | "4205780" | "4264808" | "4305216" | "4321672" | "4346442" | "4417136" | "4433436" | "4454610" | "RE31692" | "4523330" | "4636099" | "4640413" | "4644144" | "4722444" | "4722544" | "4727435" | "4737911" | "4774663" | "4790475" | "4806780" | "4837693" | "4890228" | "4896363" | "4927071" | "4934587" | "4960981" | "4975735" | "5022683" | "5053607" | "5077805" | "5091968" | "5122950" | "5134564" | "5146606" | "5157620" | "5159548" | "5164833" | "5175682" | "5187750" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:03 AM

		"20120036014" | "20120045112" | "20120052874" | "20120098705" | "20120099792" | "20120109793" | "20120113489" | "20120150767" | "20120185383" | "20120229872" | "20120230577" | "20120296768" | "20130021651" | "20130097076" | "20130120595" | "20130155474" | "20130191261" | "20130198071" | "20130201534" | "20130223721" | "20130297353" | "20130324160" | "20130332219" | "20130346306" | "20130346307" | "20140010467" | "20140032406" | "20140037183" | "20140067661" | "20140156501" | "20140197922" | "20140203508" | "20140207673" | "20140207674" | "20140236820" | "20140244476" | "20140258169" | "20140279453" | "20140351137" | "20140374486" | "20150039528" | "20150090782" | "20150134517" | "20150244994" | "20150294523" | "20150348591" | "20160026866" | "20160034590" | "20160142625" | "20160335816" | "20170039637" | "20170068421" | "20170132583" | "20170146602" | "20170229149" | "20170337610" | "20180025251" | "20180197118" |				

		"20190026577" | "20190122222" | "20190311227" | "20200311844" | "20210097615" | "20210360149").pn. OR ("12159310").urpn. AND (PGPB | USPT | USOC).dbnm.					
L29	460	L28 AND L26	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:03 AM
L30	50	(Artificial Intelligence) Similar to: 19/321,167 with 0 CPC Selections and 0 Text Selections Text: (US-12169811-B1 OR US-8542921-B1 OR US-9390574-B2 OR US-20110206267-A1 OR US-12400257-B1 OR US-12175438-B1 OR US-8837806-B1 OR US-8712143-B2 OR US-20110211746-A1 OR US-8995012-B2 OR US-8059881-B1 OR US-9317745-B2 OR EP-1429298-A2 OR US-8296236-B2 OR US-20160180168-A1 OR US-9639750-B2 OR WO-2025080792-A1 OR US-20210090086-A1 OR US-20160180165-A1 OR US-20150117749-A1 OR US-8620797-B1 OR US-8433123-B1 OR US-20120113489-A1 OR US-8620058-B2 OR US-20130094751-A1	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/11/29 06:04 AM

		OR US-20210256641-A1 OR US-20220245607-A1 OR US-8326015-B2 OR CA-2798424-C OR KR-20060014709-A OR US-20100208976-A2 OR TW-M598458-U OR US-8249983-B2 OR US-20170193596-A1 OR US-20150100400-A1 OR US-20250322395-A1 OR US-20140037183-A1 OR US-8437529-B1 OR KR-100438997-B1 OR TW-M594757-U OR CA-2798424-A1 OR US-8346578-B1 OR KR-101733467-B1 OR US-20150052042-A1 OR TW-M592556-U OR US-10402898-B2 OR US-7778457-B2 OR US-20100150424-A1 OR WO-0195062-A2 OR US-20030208438-A1).did.					
L31	8	L30 AND L29	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:04 AM
L32	8	L31 AND L26	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA,	OR	ON	ON	2025/11/29 06:05 AM

			VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L33	2	L32 AND L19	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:06 AM
L34	1023	(determin$3) WITH (video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:07 AM
L35	34	(satisfy OR satisf$3) near7 (criteria$3 OR requirement$3) WITH (monitor$3) near7 (video OR (live video)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:08 AM
L36	2483556	(advis$3 OR notif$3 OR feedback$3) near7 (user$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2025/11/29 06:08 AM

			EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L37	0	L34 AND L35	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:09 AM
L38	0	L37 AND L36	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:09 AM
L39	319	(satisfy OR satisf$3) near7 (criteria$3 OR requirement$3) WITH (video OR (live video)) near30 (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO;	OR	ON	ON	2025/11/29 06:10 AM

			JPO; DERWENT; IBM_TDB)				
L40	16	L39 AND L34	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:10 AM
L41	15	L40 AND L36	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:11 AM
L42	19	("2022/0391482").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:11 AM
L43	212714	(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:11 AM
L44	0	L43 AND L42	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:11 AM
L45	9483	(updat$3) WITH	(US-PGPUB; USPAT;	OR	ON	ON	2025/11/29

		(balanc$3) near7 (account$3)	USOCR)				06:12 AM
L46	123229	(bank$3 OR financial$3) near7 (institution$3)	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:12 AM
L47	975	(optical$3) near7 (character$3 OR (character recognition)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:12 AM
L48	4403	L45 AND L46	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:13 AM
L49	53	L48 AND L47	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:13 AM
L50	5278	(video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:14 AM
L51	3207	(view$3 OR (camera view)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:14 AM
L52	4860	(mobil$3 OR (smart phone) OR (mobile phone) OR (cell phone)) WITH (check$3) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/11/29 06:14 AM

			HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L53	53	L52 AND L49	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:14 AM
L54	2	L53 AND L50	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:14 AM
L55	2	L54 AND L51	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/11/29 06:15 AM
L56	4	L55 AND L43	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:15 AM
L57	0	L41 AND L56	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:16 AM
L58	202	(divid$3 OR dividing) WITH (video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2025/11/29 06:54 AM

			MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L59	989972	(segment$3) WITH ((check$3 OR echeck$3 OR echeque OR cheque OR (check image) OR (check picture) OR (check photo)) near7 (deposit$3 OR imag$3 OR pictur$3))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:56 AM
L61	1593259	((check$3 OR echeck$3 OR echeque OR cheque OR (check image) OR (check picture) OR (check photo)) near7 (deposit$3 OR imag$3 OR pictur$3)) near10 (background$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:57 AM
L62	319	(satisfy OR satisf$3) near7 (criteria$3 OR requirement$3) WITH (video OR (live video)) near30 (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:57 AM

L63	4860	(mobil$3 OR (smart phone) OR (mobile phone) OR (cell phone)) WITH (check$3) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:57 AM
L64	54	L58 AND L59	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:58 AM
L65	14	L64 AND L61	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:58 AM
L66	0	L65 AND L62	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO,	OR	ON	ON	2025/11/29 06:58 AM

			MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L67	0	L66 AND L63	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:58 AM
L68	212714	(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:58 AM
L69	38	L20 AND L14	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:58 AM
L70	0	L69 AND L65	(US-PGPUB; USPAT;	OR	ON	ON	2025/11/29

			USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				06:59 AM
L71	0	L65 AND L68	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/11/29 06:59 AM

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BIB DATA SHEET

CONFIRMATION NO. 1975

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
19/321,167	09/05/2025 RULE	705	3694	US-0691.12e | 56-10663

APPLICANTS

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

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Reynaldo Medina, San Antonio, TX;
Charles Lee Oakes III, Boerne, TX;

**** CONTINUING DATA ***************************

This application is a CON of 19/038,702 01/27/2025
which is a CON of 18/593,854 03/01/2024 PAT 12211095
which is a CON of 17/161,235 01/28/2021 ABN
which is a CON of 16/712,182 12/12/2019 PAT 11341465
which is a CON of 16/280,455 02/20/2019 ABN
which is a CON of 15/792,966 10/25/2017 PAT 10235660
which is a CON of 15/392,950 12/28/2016 PAT 9818090
which is a CON of 13/922,686 06/20/2013 PAT 9569756
which is a CON of 12/545,127 08/21/2009 PAT 8977571

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

09/25/2025

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
❑ Yes ☑ No	❑ Yes ☑ No	/TIEN C NGUYEN/ Examiner's Signature	❑ TN Initials	TX	8	30	4

ADDRESS

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

TITLE

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

FILING FEE RECEIVED	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT	❑ All Fees ❑ 1.16 Fees (Filing) ❑ 1.17 Fees (Processing Ext. of time) ❑ 1.18 Fees (Issue)

BIB (Rev. 05/07).

0.00	No._____ for following:	❑ Other _____ ❑ Credit

Search History 19321167

Report Run Date: 2025-11-29 UTC
Searches: 28
Markers: 0

Search #	Timestamp	Results	Page
1	2025-11-29 12:45 UTC	3,399,989	3
2	2025-11-29 12:45 UTC	3,399,989	3
3	2025-11-29 12:51 UTC	2,705,974	3
4	2025-11-29 12:54 UTC	814,180	3
5	2025-11-29 12:59 UTC	3,043,260	4
6	2025-11-29 13:01 UTC	2,841,834	4
7	2025-11-29 14:00 UTC	0	4
8	2025-11-29 14:01 UTC	0	4
9	2025-11-29 14:02 UTC	0	4
10	2025-11-29 14:03 UTC	0	5
11	2025-11-29 14:04 UTC	0	5
12	2025-11-29 14:04 UTC	0	5
13	2025-11-29 14:04 UTC	0	6
14	2025-11-29 14:04 UTC	0	6
15	2025-11-29 14:05 UTC	0	6
16	2025-11-29 14:05 UTC	0	6
17	2025-11-29 14:05 UTC	0	7
18	2025-11-29 14:06 UTC	0	7
19	2025-11-29 14:06 UTC	0	8
20	2025-11-29 14:07 UTC	0	8
21	2025-11-29 14:07 UTC	0	9
22	2025-11-29 14:07 UTC	0	9
23	2025-11-29 14:09 UTC	0	10
24	2025-11-29 14:09 UTC	0	10
25	2025-11-29 14:10 UTC	0	11
26	2025-11-29 14:10 UTC	0	12
27	2025-11-29 14:10 UTC	0	12
28	2025-11-29 14:12 UTC	0	13

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 **2025-11-29** 12:45 UTC | 3,399,989 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Text
mobile check deposit and determining that a video frame of the live video of the check satisfy the monitoring criteria

Concept Modifiers: None

Filters (1):
Publication Date: To 2019-08-21

2 **2025-11-29** 12:45 UTC | 3,399,989 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 1

Concept Modifiers: None

Filters: Same as Search 1

3 **2025-11-29** 12:51 UTC | 2,705,974 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Text
mobile check deposit via a video frame of the live video of the check

Concept Modifiers: None

Filters: Same as Search 1

4 **2025-11-29** 12:54 UTC | 814,180 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Text
mobile check deposit via a video frame

Concept Modifiers: None

Filters: Same as Search 1

5 **2025-11-29** 12:59 UTC | 3,043,260 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Text
check deposit via a mobile phone and a video frame

Concept Modifiers: None

Filters: Same as Search 1

6 **2025-11-29** 13:01 UTC | 2,841,834 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Text
check deposit via a mobile phone

Concept Modifiers: None

Filters: Same as Search 1

7 **2025-11-29** 14:00 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 6

Concept Modifiers: None

Filters (2):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)

8 **2025-11-29** 14:01 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 6

Concept Modifiers: None

Filters (3):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)

9 **2025-11-29** 14:02 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 6

Concept Modifiers: None

Filters (4):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)

10 **2025-11-29 14:03 UTC | 0 results from**

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 6

Concept Modifiers: None

Filters (5):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)

11 **2025-11-29 14:04 UTC | 0 results from**

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 6

Concept Modifiers: None

Filters (6):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)

12 **2025-11-29 14:04 UTC | 0 results from**

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Text
check deposit

Concept Modifiers: None

Filters: Same as Search 11

13 2025-11-29 14:04 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters: Same as Search 11

14 2025-11-29 14:04 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters: Same as Search 11

15 2025-11-29 14:05 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (7):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

16 2025-11-29 14:05 UTC | 0 results from

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (8):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)

Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)

17 **2025-11-29 14:05 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (9):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)

18 **2025-11-29 14:06 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (10):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR

instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)
Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

19 **2025-11-29 14:06 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (11):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)
Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)

20 **2025-11-29 14:07 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (12):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)

Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)

Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)

21 **2025-11-29 14:07 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (13):

Publication Date: To 2019-08-21

Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)

Classic Syntax limited to: (check) near7 (image OR picture OR photo)

Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)

Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)

Classic Syntax limited to: (deposit) near7 (check)

Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)

Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)

Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)

Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

22 **2025-11-29 14:07 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (14):

Publication Date: To 2019-08-21

Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)

Classic Syntax limited to: (check) near7 (image OR picture OR photo)

Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)

Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)

Classic Syntax limited to: (deposit) near7 (check)

Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)

Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)

Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)

Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)

23 **2025-11-29** 14:09 UTC | 0 results from

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (15):

Publication Date: To 2019-08-21

Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)

Classic Syntax limited to: (check) near7 (image OR picture OR photo)

Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)

Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)

Classic Syntax limited to: (deposit) near7 (check)

Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)

Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)

Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)

Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)

Classic Syntax limited to: (optical) nearn (character OR (character recognition)) and (check)

24 **2025-11-29** 14:09 UTC | 0 results from

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (16):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)
Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)
Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)
Classic Syntax limited to: (optical) nearn (character OR (character recognition)) and (check)
Classic Syntax limited to: (check) and (digital) near7 (image OR picture)

25 **2025-11-29 14:10 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (17):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)
Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image

OR picture)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)
Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)
Classic Syntax limited to: (optical) nearn (character OR (character recognition)) and (check)
Classic Syntax limited to: (check) and (digital) near7 (image OR picture)
Classic Syntax limited to: (video OR (live video) or camera) and (frame or frames) WITH (check) near7 (deposit OR image OR picture)

26 **2025-11-29 14:10 UTC | 0 results from**

De-Dup: None | **Relevance Cut-off:** None | **Sort:** Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (18):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)
Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)
Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)
Classic Syntax limited to: (optical) nearn (character OR (character recognition)) and (check)
Classic Syntax limited to: (check) and (digital) near7 (image OR picture)
Classic Syntax limited to: (video OR (live video) or camera) and (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)

27 **2025-11-29 14:10 UTC | 0 results from**

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (19):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)
Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)
Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)
Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)
Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)
Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)
Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)
Classic Syntax limited to: (optical) nearn (character OR (character recognition)) and (check)
Classic Syntax limited to: (check) and (digital) near7 (image OR picture)
Classic Syntax limited to: (video OR (live video) or camera) and (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)

28 **2025-11-29 14:12 UTC | 0 results from**

De-Dup: None | Relevance Cut-off: None | Sort: Relevance

Main Concept: Same as Search 12

Concept Modifiers: None

Filters (20):
Publication Date: To 2019-08-21
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) nearn (check) near7 (deposit)
Classic Syntax limited to: (check) near7 (image OR picture OR photo)
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)
Classic Syntax limited to: (video OR (live video) or camera) nearn (frame or frames) WITH (check) near7 (deposit OR image OR picture)
Classic Syntax limited to: (deposit) near7 (check)

Classic Syntax limited to: (generate) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (overlaying OR overlay OR overlaid) WITH (alignment OR align) nearn (guide OR guidance OR instruction or instructions)

Classic Syntax limited to: (view OR (camera view)) and (check) nearn (deposit)

Classic Syntax limited to: (monitor or monitoring) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check)

Classic Syntax limited to: (determine) WITH (video) nearn (frame OR frame) WITH (check) nearn (deposit)

Classic Syntax limited to: (criteria OR requirement) WITH (monitor) nearn (video OR (live video)) and (check) nearn (deposit OR image OR picture)

Classic Syntax limited to: (advise OR notify OR feedback) nearn (user or users or customer or customers)

Classic Syntax limited to: (optical) nearn (character OR (character recognition)) and (check)

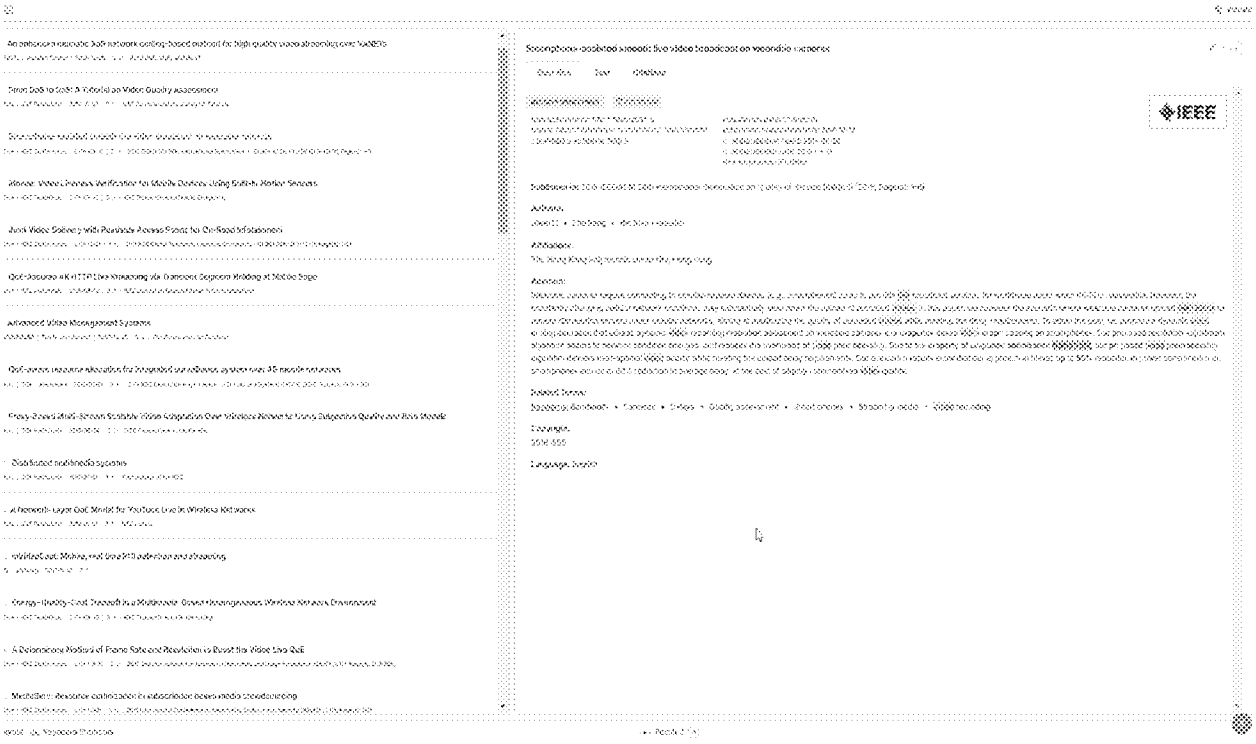
Classic Syntax limited to: (check) and (digital) near7 (image OR picture)

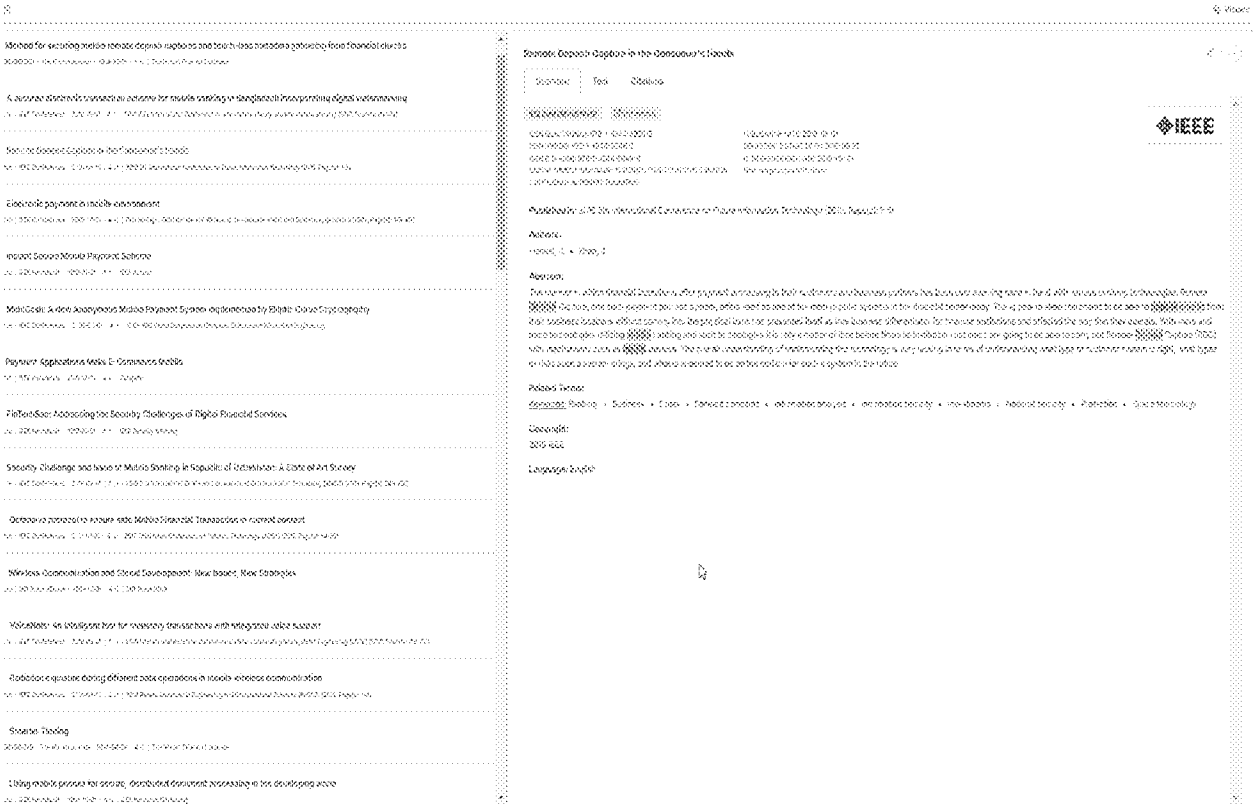
Classic Syntax limited to: (video OR (live video) or camera) and (frame or frames) WITH (check) near7 (deposit OR image OR picture)

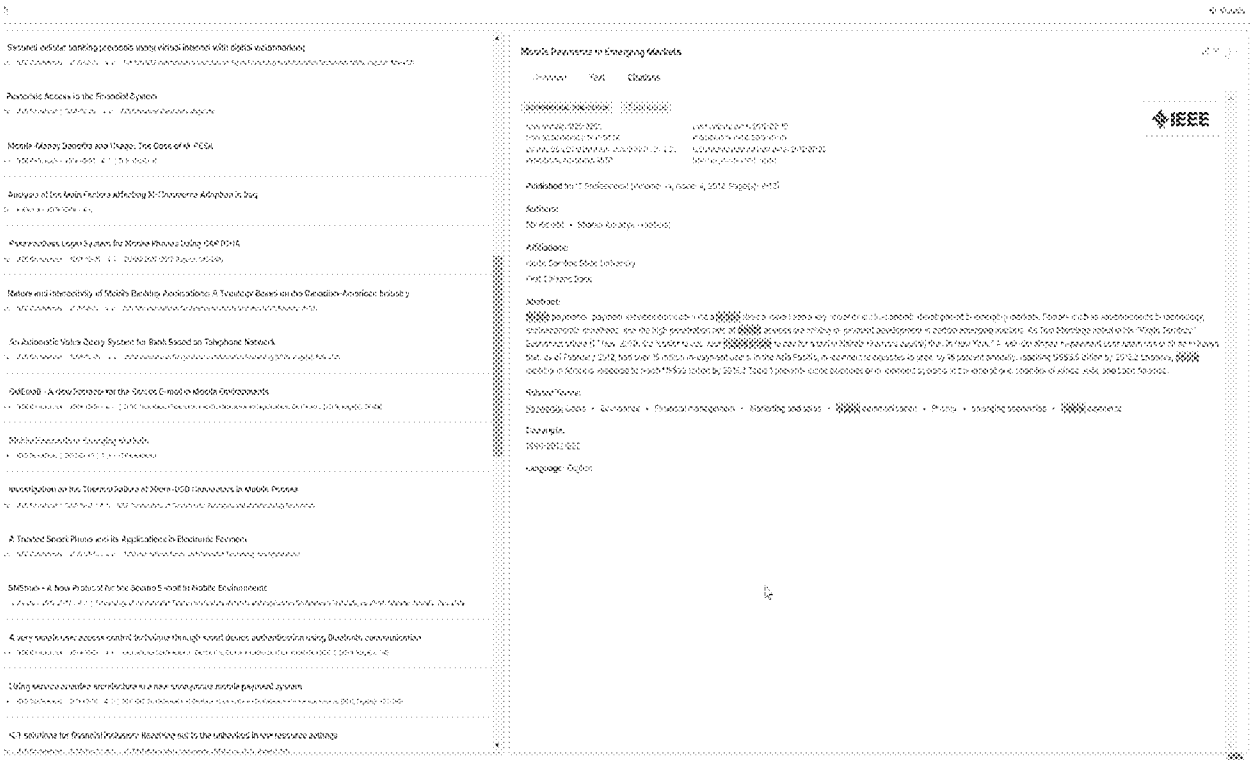
Classic Syntax limited to: (mobile OR (smart phone) OR (mobile phone) OR (cell phone)) and (check) near7 (deposit)

Classic Syntax limited to: (check) near7 (image OR picture OR photo)

Classic Syntax limited to: (camera or video) and (light or (check position) or (light contrast) or (light brightness))







Mobile Payments in Emerging Markets

Abstract

Published in: IT Professional (Volume: 13, Issue: 1, 2011, Page(s): 44-51)

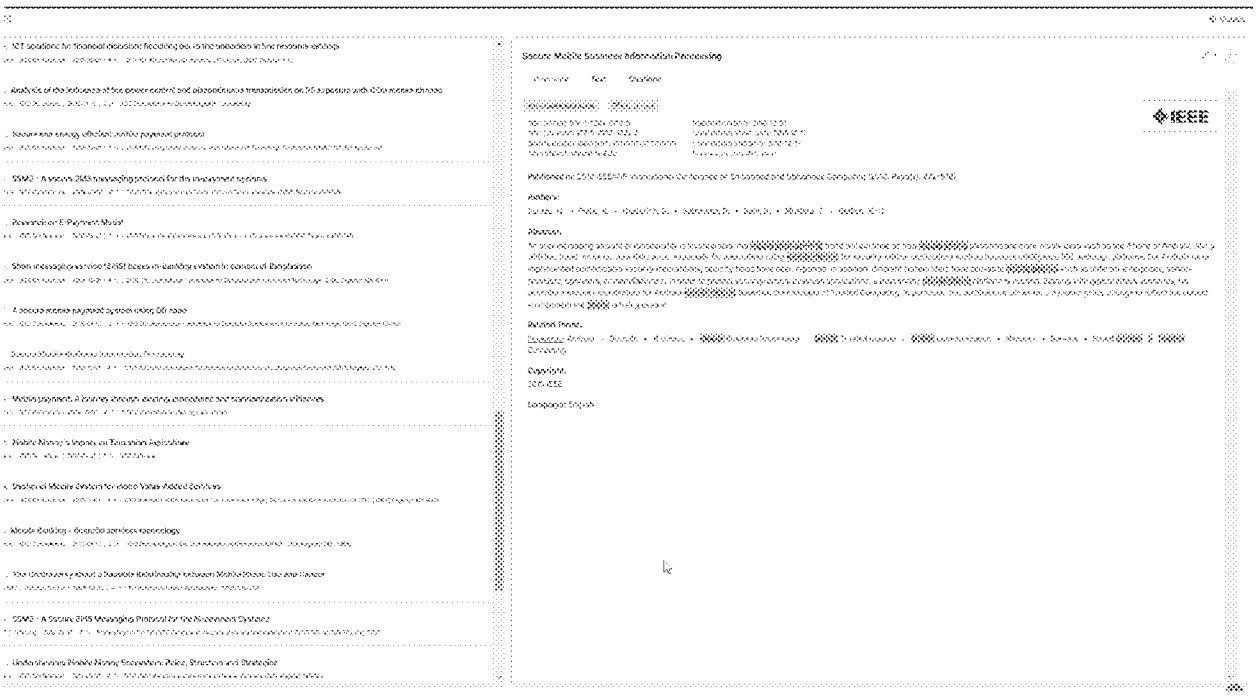
Authors

Abstract

Publication Info

Copyright

Language: English



Secure Mobile Business Information Processing

Abstract

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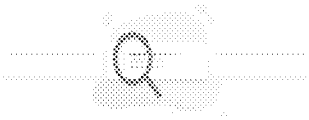
Authors

Abstract

Publication Info

Copyright

Language: English



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.: 19/321,167 Examiner: Tien C. Nguyen

Filed: September 5, 2025 Confirmation No.: 1975

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

* * *

RESPONSE

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

Commissioner:

In response to the Office Action dated December 22, 2025, please enter the following remarks.

Remarks begin on page 2 of this paper.

REMARKS

Applicant respectfully requests reconsideration of this application in view of the following remarks.

Claims 1-30 are pending, with claims 1, 9, 18, and 26 being independent.

In the outstanding Office Action dated December 22, 2025, claims 1-30 were rejected on the ground of nonstatutory obviousness-type double patenting over claims 1-30 of U.S. Pat. No. 12,211,095 (hereinafter the ‘095 patent); claims 1, 9, 18, and 26 were rejected on the ground of nonstatutory obviousness-type double patenting over claims 1, 5, 10, and 14 of U.S. Pat. No. 12,159,310 (hereinafter the ‘310 patent); claim 1 was provisionally rejected on the ground of nonstatutory obviousness-type double patenting over claim 1 of U.S. Appln. No. 19/038,702 (hereinafter the ‘702 application); and claim 1 was provisionally rejected on the ground of nonstatutory obviousness-type double patenting over claim 1 of U.S. Appln. No. 18/988,097 (hereinafter the ‘097 application).

With respect to the provisional rejections, Applicant notes that the ‘702 application remains pending and that, after the mailing of the Office Action, the ‘097 application issued as U.S. Pat. No. 12,505,414 on December 23, 2025 (hereinafter the ‘414 patent).

Without acceding to the rejections, Applicant has filed on even date herewith a Terminal Disclaimer over each of the ‘095 patent, the ‘310 patent, the ‘414 patent, and the ‘702 application to obviate the rejections.

Accordingly, withdrawal of the rejections is respectfully requested.

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-0691.12e | 56-10663) 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: December 24, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

Stephen T. Schreiner
Reg. No. 43,097

Cust. No. 135533
Carmichael IP, PLLC

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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 #
19/321,167	**12/24/2025 02:17:27 AM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	73741789	FILING DATE	09/05/2025
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
2025-12-24_US-0691-12e_Response-NFOA-v2.pdf		3	-	84 KB
2025-12-24_US-0691-12e_Response-NFOA-v2-A....pdf	(1-1)	1	Amendment/Request for Reconsideration-After Non-Final Rejection	65 KB
2025-12-24_US-0691-12e_Response-NFOA-v2-REM.pdf	(2-3)	2	Applicant Arguments/Remarks Made in an Amendment	49 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)

2025-12-24_US-0691-12e_Response-NFOA-v2.pdf	380A2FF9120D17BAFD08596AD10A7BBB40CF933A61C365528A5930E7893B325A9D6289941DB10856DE926B4AB261DF74D53A51E5677A6F9F89A3AE2C901E2563
2025-12-24_US-0691-12e_Response-NFOA-v2-A....pdf	9F05BC40445139DBD115BC2B279364EAC0A496E9D9AF7D3191951D19C918AFA1B5A1BEBBC3A1E283526F14C7207E972D52529B1417A7B599701BA49E71C163B3
2025-12-24_US-0691-12e_Response-NFOA-v2-REM.pdf	E9CF1627E7B2AA480B7DBD84438F9F148604DB32BDC85A4B3AB7189918506FF5F25100DC3F06EB7E25DCF614BA0CAB6B46BE32845B8B501B8A1BB97BA212211B

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

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

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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First Named Inventor: Michael P. Bueche, Jr. Art Unit: 3694

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Respectfully submitted,

Date: December 24, 2025

By: /Christopher R. Abidin/
Christopher R. Abidin
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chris@carmichaelip.com
703-646-9251

UNITED STATES PATENT AND TRADEMARK OFFICE

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

TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
19321167	**09/05/2025**	**Michael Bueche**	**US-0691.12e | 56-10663**

Title of Invention

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

☑ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☑ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent interest
United Services Automobile Association (USAA)	100%
Total	**100%**

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)

Application #	Filing Date

as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.
In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

Patent #
12211095
12159310
12505414

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.
In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
• expires for failure to pay a maintenance fee;
• is held unenforceable;
• is found invalid by a court of competent jurisdiction;
• is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
• has all claims canceled by a reexamination certificate;

• is reissued; or
• is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.



Terminal disclaimer fee under 37 CFR 1.20(d) included with Electronic Terminal Disclaimer request.

Applicant claims the following entity status:
Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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 is of record in this application

Signature	Name	Registration #
/Christopher R. Abidin/	Christopher Abidin	74742

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 #
19/321,167	**12/24/2025 02:12:45 AM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	73741534	FILING DATE	09/05/2025
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
petition-request.pdf	3	Terminal Disclaimer-Filed (Electronic)	45 KB
grantLetter.pdf	1	Terminal Disclaimer-Electronic-Approved	18 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
petition-request.pdf	1CACEA12B21F12ABD4B54A29E707B861367737F0ECF5D7F6C682C581CA0E95AF6E7F1E990EBBDD277CA5079D2E9B7D1B53BBEB84F4342C46AE3B989CA9CF4AD7

grantLetter.pdf

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3F0187B6AD6064BB9316BF0B317E99F9651A683ACA9E68C2C
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UNITED STATES
PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

APPROVAL LETTER

APPLICATION #	FILING DATE	APPLICANT/PATENT UNDER REEXAMINATION
19/321,167	**09/05/2025**	**Michael Bueche**

Title of Invention

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

Electronic terminal disclaimer filed on 12/24/2025

☑ Approved

This patent is subject to a Terminal Disclaimer

Approved / Disapproved by: Electronic Terminal Disclaimer automatically approved

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 #
19/321,167	**12/24/2025 02:12:45 AM Z ET**	**US-0691.12e | 56-10663**

Title of Invention

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Application Information

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CONFIRMATION #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	73741534	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	09/05/2025
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E2025BN313059602**	**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($)	QUANTITY	ITEM TOTAL($)
1814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	183.00	1	183.00
			TOTAL AMOUNT:	**$183.00**

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.

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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 02/02/2026

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

EXAMINER	
NGUYEN, TIEN C	
ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 02/02/2026

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/321,167	09/05/2025	Michael Patrick Bueche JR.	US-0691.12e | 56-10663	1975

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	05/04/2026

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 02/02/2026
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.
19/321,167	09/05/2025	Michael Patrick Bueche JR.	US-0691.12e | 56-10663	1975

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nonprovisional	UNDISCOUNTED	$1290	$0.00	$0.00	$1290	05/04/2026

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TIEN C	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. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/321,167	09/05/2025	Michael Patrick Bueche JR.	US-0691.12e | 56-10663	1975

197306 7590 02/02/2026

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

EXAMINER	
NGUYEN, TIEN C	
ART UNIT	PAPER NUMBER
3694	

DATE MAILED: 02/02/2026

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.

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. 19/321,167	Applicant(s) Bueche et al.	
	Examiner TIEN C NGUYEN	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 12/24/2025.
   ☐ 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 1-30 . 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 _____.

/TIEN C NGUYEN/
Primary Examiner, Art Unit 3694

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.

Examiner's Statement of Reasons for Allowance

1. The following is an Allowance in response the amendments filed on 12/24/2025.

2. Claims 1-30 were previously presented.

3. The previous double patenting rejections of the claims 1-30 have been withdrawn in the light of the filing valid Terminal Disclaimer on 12/24/2025.

4. Therefore, claims 1-30 are pending and allowed below.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance:

Walach (2010/0082470) teaches a method and a system for depositing a negotiable instrument, such as a check, using a cellular phone camera. The depositor images the check for deposit by taking a photograph of the check with his cellular phone camera and sends the photograph as a MMS to the depositor's bank. The system enables validating image quality, automatically recognizing code line and verifying a courtesy amount of the check so that the check is deposited into the customer's bank account. Dujari et al. (2009/0313167) teaches a method and a system for electronic deposit of a financial instrument, comprising: an intake portion configured to receive a financial transaction document associated with a user, wherein the intake subsystem is at a location remote from the user; an imaging device configured to receive the financial transaction document from the intake portion and to obtain an electronic image of the financial transaction document at the location; a identification means coupled to the imaging device and configured to electronically determine identification information about the user based upon data from the electronic image of the financial transaction document; an instruction subsystem remote from the user and configured to receive handling instructions from the user regarding the financial transaction document; and a depositing subsystem coupled to

the instruction subsystem and configured to electronically transmit data to a financial institution related instructions for performing a deposit transaction associated with the financial transaction document and an account associated with the user, wherein the financial institution is remote from the user and remote from the location. Caleca et al. (20090167870) teaches a photographer system and a server. The photographer system should include at least one local computer and a digital camera; however, multiple local computers and digital cameras can be included in each photographer system. The digital camera is used to take digital images of a subject against a solid colored background. The digital image is then transferred from the digital camera to the local computer. The background of the digital image is then removed such that only the subject remains. The digital image is then uploaded to the server. Before the consumer accesses the digital image on the server, the photographer can upload a variety of background digital images. The photographer can also log in to the server to create, edit, and save various settings associated with all the consumers associated with the photographer, or groups of consumers associated with the photographer. A consumer can then connect to the server over the network, and view the digital image. The consumer can choose from the variety of background digital images made available by the photographer and view the digital image with each one of these background digital images. The consumer may then select and purchase one or more prints of the digital image. The server will then contact the photographer that uploaded the digital image(s) or some other designated party, preferably via email, to notify the party that an order has been placed.

However, the combination of prior arts of record would be hind-sight reasoning to combine the individual elements disclosed in the prior art in order to achieve Applicant's claimed invention.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien C. Nguyen whose telephone number is 571-270-5108. The examiner can normally be reached on Monday-Friday (6am-2pm EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Sigmond can be reached on 303-297-4411. The fax phone number for the organization where this application or proceeding is assigned is 571-270-6108.

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.

/TIEN C NGUYEN/
Primary Examiner, Art Unit 3694

Notice of References Cited	Application/Control No. 19/321,167	Applicant(s)/Patent Under Reexamination Bueche et al.	
	Examiner TIEN C NGUYEN	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-8977571-B1	2015-03-10	Bueche, Jr.; Michael Patrick	G06V30/2253	705/45
*	B	US-20140074709-A1	2014-03-13	Green; Travis Harrison Kroll	G06Q40/02	705/44
*	C	US-20100082470-A1	2010-04-01	Walach; Eugeniusz	G06Q40/02	455/466
*	D	US-20090313167-A1	2009-12-17	Dujari; Rajeev	G06Q40/06	705/42
*	E	US-20090167870-A1	2009-07-02	Caleca; Serge	H04N1/00244	348/211.3
*	F	US-20090171819-A1	2009-07-02	Emde; Martin Von der	G06Q40/12	705/30
*	G	US-20090171825-A1	2009-07-02	Roman; Alan P.	G06Q20/042	382/137
*	H	US-20090108080-A1	2009-04-30	Meyer; John F.	G06Q20/102	235/494
*	I	US-20090110281-A1	2009-04-30	Hirabayashi; Kazunori	G06V10/96	382/180
*	J	US-20090060396-A1	2009-03-05	Blessan; Marco	G06V30/18086	382/317
*	K	US-20090046938-A1	2009-02-19	Yoder; Gabriel J.	G06T9/20	382/242
*	L	US-20080316542-A1	2008-12-25	Mindrum; Gordon Scott	G06Q10/10	358/442
*	M	US-20080262953-A1	2008-10-23	Anderson; Don	G06Q40/12	705/35

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title, Date, Publisher, Edition or Volume, Pertinent Pages
	U	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).
	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
	19/321,167	Bueche et al.
	Examiner	Art Unit
	TIEN C NGUYEN	3694

CPC - Searched*		
Symbol	Date	Examiner
G06Q	01/05/2026	

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164)	01/05/2026	

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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
Updated PE2E search.	01/05/2026	
Assignee search.	01/05/2026	
Inventors search.	01/05/2026	
IP Plus.com NPL searches.	01/05/2026	
Search SN# 18/593856,18/593854,19/038702,16/712182 and 15/792,966.	01/05/2026	

/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	19/321,167	Bueche et al.
	Examiner	Art Unit
	TIEN C NGUYEN	3694

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
705/ G06Q	35/ 40/02	01/05/2026	
705/ G06T	35/ 7/13	01/05/2026	
705/ G06T	35/ 2207/20164	01/05/2026	
705/ G06V	35/ 10/60	01/05/2026	

/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	19/321,167	Bueche et al.
	Examiner	**Art Unit**
	TIEN C NGUYEN	3694

CPC						
Symbol					**Type**	**Version**
G06Q	/	40	/	02	F	2013-01-01
G06V	/	10	/	60	I	2022-01-01
G06T	/	7	/	13	I	2017-01-01
G06T	/	2207	/	20164	A	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	30	
/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	05 January 2026	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20251224

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	19/321,167	Bueche et al.
	Examiner	Art Unit
	TIEN C NGUYEN	3694

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06Q	/	40	/	00	

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)	30	
/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	05 January 2026	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20251224

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	19/321,167	Bueche et al.
	Examiner	Art Unit
	TIEN C NGUYEN	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	10	19	19	28	28								
2	2	11	11	20	20	29	29								
3	3	12	12	21	21	30	30								
4	4	13	13	22	22										
5	5	14	14	23	23										
6	6	15	15	24	24										
7	7	16	16	25	25										
8	8	17	17	26	26										
9	9	18	18	27	27										

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/TIEN C NGUYEN/ Primary Examiner, Art Unit 3694	05 January 2026	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20251224

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	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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	11068976	B1	2021-07-20	Voutour et al.	
	2	11070868	B1	2021-07-20	Mortensen et al.	
	3	11121989	B1	2021-09-14	Castinado et al.	
	4	11182753	B1	2021-11-23	Oakes, III et al.	
	5	11222315	B1	2022-01-11	Prasad et al.	
	6	11232517	B1	2022-01-25	Medina et al.	
	7	11288898	B1	2022-03-29	Moon	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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	10	12159310	B1	2024-12-03	Bueche, Jr. et al.	
	11	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	20010004235	A1	2001-06-21	Maloney, William C.	
	2	20010014881	A1	2001-08-16	Drummond, Jay Paul et al.	
	3	20010016084	A1	2001-08-23	Pollard, Stephen Bernard et al.	
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	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
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	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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	40	20020147798	A1	2002-10-10	Huang, Hsi-Hsun	
	41	20020150279	A1	2002-10-17	Scott, Dennis et al.	
	42	20020152160	A1	2002-10-17	Allen-Rouman, Terry et al.	
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	44	20020152164	A1	2002-10-17	Dutta, Rabindranath et al.	
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	63	20030038227	A1	2003-02-27	Sesek, Robert et al.	
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	74	20030081824	A1	2003-05-01	Mennie, Douglas U. et al.	
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	85	20030135457	A1	2003-07-17	Stewart, Whitney Hilton et al.	
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	96	20030212904	A1	2003-11-13	Randle, William M. et al.	
	97	20030213841	A1	2003-11-20	Josephson, Stanley M. et al.	
	98	20030217005	A1	2003-11-20	Drummond, Jay Paul et al.	
	99	20030218061	A1	2003-11-27	Filatov, Alexander	
	100	20030225705	A1	2003-12-04	Park, Gregory Ernest et al.	
	101	20030231285	A1	2003-12-18	Ferguson, R. Daniel	
	102	20030233278	A1	2003-12-18	Marshall, T. Thaddeus	
	103	20030233318	A1	2003-12-18	King, Douglas W. et al.	
	104	20040010466	A1	2004-01-15	Anderson, David F.	
	105	20040010803	A1	2004-01-15	Berstis, Viktors	

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	107	20040013284	A1	2004-01-22	Yu, Hong Heather	
	108	20040017482	A1	2004-01-29	Weitman, Jacob	
	109	20040024626	A1	2004-02-05	Bruijning, Jeroen	
	110	20040024708	A1	2004-02-05	Masuda, Kazuo et al.	
	111	20040029591	A1	2004-02-12	Chapman, Peter William et al.	
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	114	20040058705	A1	2004-03-25	Morgan, Russell et al.	
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	118	20040069841	A1	2004-04-15	Wong, Galen C. et al.	
	119	20040071333	A1	2004-04-15	Douglas, Donald J. et al.	
	120	20040075754	A1	2004-04-22	Nakajima, Yasumasa et al.	
	121	20040076320	A1	2004-04-22	Downs, Charles H. JR.	
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	129	20040109596	A1	2004-06-10	Doran, Wayne M.	
	130	20040110975	A1	2004-06-10	Osinski, Piotr et al.	
	131	20040117302	A1	2004-06-17	Weichert, Margaret M. et al.	
	132	20040122754	A1	2004-06-24	Stevens, Harden Evans III	
	133	20040133511	A1	2004-07-08	Smith, Merrill Brooks et al.	
	134	20040136586	A1	2004-07-15	Okamura, Yukihiro	
	135	20040138974	A1	2004-07-15	Shimamura, Atsushi et al.	
	136	20040148235	A1	2004-07-29	Craig, Mark S. et al.	
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	140	20040171371	A1	2004-09-02	Paul, Glenn	
	141	20040193878	A1	2004-09-30	Dillinger, Markus et al.	
	142	20040201695	A1	2004-10-14	Inasaka, Rei	
	143	20040201741	A1	2004-10-14	Ban, Shinichi	
	144	20040202349	A1	2004-10-14	Erol, Berna et al.	
	145	20040205459	A1	2004-10-14	Green, Brett A.	
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	151	20040236647	A1	2004-11-25	Acharya, Ravi	
	152	20040236688	A1	2004-11-25	Bozeman, William O.	
	153	20040238619	A1	2004-12-02	Nagasaka, Keiji et al.	
	154	20040240722	A1	2004-12-02	Tsuji, Keiji et al.	
	155	20040245324	A1	2004-12-09	Chen, Cheng-Sung	
	156	20040247199	A1	2004-12-09	Murai, Kiyoaki et al.	
	157	20040248600	A1	2004-12-09	Kim, Duk-Soo	
	158	20040252679	A1	2004-12-16	Williams, Tim et al.	
	159	20040260636	A1	2004-12-23	Marceau, Stephen Michael et al.	
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	162	20050001421	A1	2005-01-06	Luth, Brad A. et al.	
	163	20050001924	A1	2005-01-06	Honda, Tsutomu	
	164	20050010108	A1	2005-01-13	Rahn, John Richard et al.	
	165	20050015341	A1	2005-01-20	Jackson, Walter C.	
	166	20050015342	A1	2005-01-20	Murata, Sadao et al.	
	167	20050021466	A1	2005-01-27	Buchanan, Danne L. et al.	
	168	20050030388	A1	2005-02-10	Stavely, Donald J. et al.	
	169	20050033645	A1	2005-02-10	Duphily, Michele R.	
	170	20050033685	A1	2005-02-10	Reyes, Thomas D.	
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	173	20050034046	A1	2005-02-10	Berkmann, Jens et al.	
	174	20050035193	A1	2005-02-17	Gustin, Robin Haley et al.	
	175	20050036665	A1	2005-02-17	Higuchi, Teruyuki	
	176	20050038746	A1	2005-02-17	Latimer, Paul J. et al.	
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	178	20050044042	A1	2005-02-24	Mendiola, Dennis et al.	
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	181	20050071283	A1	2005-03-31	Randle, William M. et al.	
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	184	20050078192	A1	2005-04-14	Sakurai, Keiichi et al.	
	185	20050078336	A1	2005-04-14	Ferlitsch, Andrew Rodney	
	186	20050080725	A1	2005-04-14	Pick, Elizabeth Jane	
	187	20050082364	A1	2005-04-21	Alvarez, David R. et al.	
	188	20050086140	A1	2005-04-21	Ireland, Phillip Michael William et al.	
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	191	20050091117	A1	2005-04-28	Phillips, Cheryl et al.	
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	195	20050097019	A1	2005-05-05	Jacobs, Ronald F.	
	196	20050097046	A1	2005-05-05	Singfield, Joy Shantia	
	197	20050097046	A1	2005-05-05	Singfield, Joy Shantia	
	198	20050097050	A1	2005-05-05	Orcutt, Laura Lee	
	199	20050100216	A1	2005-05-12	Myers, Gregory et al.	
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	206	20050125338	A1	2005-06-09	Tidwell, Lisa C. et al.	
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	209	20050128333	A1	2005-06-16	Park, Myoung-hoon et al.	
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	211	20050133586	A1	2005-06-23	Rekeweg, James et al.	
	212	20050143136	A1	2005-06-30	Lev, Tvsi et al.	
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	217	20050168566	A1	2005-08-04	Tada, Naoki et al.	
	218	20050171899	A1	2005-08-04	Dunn, John P. et al.	
	219	20050171907	A1	2005-08-04	Lewis, John M.	
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	224	20050190269	A1	2005-09-01	Grignani, Raphael	
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	228	20050209961	A1	2005-09-22	Michelsen, Michael J. et al.	
	229	20050216409	A1	2005-09-29	McMonagle, Patrick S. et al.	
	230	20050216410	A1	2005-09-29	Davis, Steven et al.	
	231	20050220324	A1	2005-10-06	Klein, Robert D. et al.	
	232	20050228733	A1	2005-10-13	Bent, Bruce et al.	
	233	20050238257	A1	2005-10-27	Kaneda, Kitahiro et al.	
	234	20050252955	A1	2005-11-17	Sugai, Kiyoshi et al.	
	235	20050267843	A1	2005-12-01	Acharya, Ravi V. et al.	
	236	20050268107	A1	2005-12-01	Harris, William H. et al.	
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	239	20050273430	A1	2005-12-08	Pliha, Robert Kenneth	
	240	20050278250	A1	2005-12-15	Zair, Kays	
	241	20050281448	A1	2005-12-22	Lugg, Richard P.	
	242	20050281450	A1	2005-12-22	Richardson, Joseph L.	
	243	20050281450	A1	2005-12-22	Richardson, Joseph L.	
	244	20050281471	A1	2005-12-22	LeComte, Daniel	
	245	20050281474	A1	2005-12-22	Huang, Jincheng	
	246	20050289030	A1	2005-12-29	Smith, Maurice R.	
	247	20050289059	A1	2005-12-29	Brewington, James Gabriel et al.	
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	40	20070019243	A1	2007-01-25	Sato et al.	
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	62	20070086642	A1	2007-04-19	Foth et al.	
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	73	20070122024	A1	2007-05-31	Haas et al.	
	74	20070127805	A1	2007-06-07	Foth et al.	
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	85	20070171288	A1	2007-07-26	Inoue et al.	
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	87	20070172148	A1	2007-07-26	Hawley	
	88	20070175977	A1	2007-08-02	Bauer et al.	
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	90	20070183000	A1	2007-08-09	Eisen et al.	
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	128	20080059376	A1	2008-03-06	Davis et al.	
	129	20080063253	A1	2008-03-13	Wood	
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	139	20080097899	A1	2008-04-24	JACKSON et al.	
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	150	20080141117	A1	2008-06-12	King et al.	
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	161	20080214180	A1	2008-09-04	Cunningham et al.	
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	172	20080316542	A1	2008-12-25	Mindrum et al.	
	173	20090024520	A1	2009-01-22	Drory et al.	
	174	20090046938	A1	2009-02-19	Yoder	
	175	20090060396	A1	2009-03-05	Blessan et al.	
	176	20090066987	A1	2009-03-12	Inokuchi	
	177	20090076921	A1	2009-03-19	Nelson et al.	
	178	20090092287	A1	2009-04-09	Moraleda et al.	
	179	20090092309	A1	2009-04-09	Calman et al.	
	180	20090108080	A1	2009-04-30	Meyer et al.	
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	183	20090114716	A1	2009-05-07	Ramachandran	
	184	20090132813	A1	2009-05-21	Schibuk	
	185	20090141962	A1	2009-06-04	Borgia et al.	
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	194	20090185241	A1	2009-07-23	Nepomniachtchi	
	195	20090185737	A1	2009-07-23	Nepomniachtchi	
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	197	20090190823	A1	2009-07-30	Walters	
	198	20090192938	A1	2009-07-30	Amos	
	199	20090222347	A1	2009-09-03	Whitten	
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	202	20090240574	A1	2009-09-24	Carpenter et al.	
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	205	20090254447	A1	2009-10-08	Blades	
	206	20090257641	A1	2009-10-15	Liu et al.	
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	208	20090284637	A1	2009-11-19	Parulski et al.	Entire Document
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	212	20100016016	A1	2010-01-21	Brundage et al.	
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	216	20100057578	A1	2010-03-04	Blair et al.	
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	227	20100150424	A1	2010-06-17	Nepomniachtchi et al.	
	228	20100161408	A1	2010-06-24	Karson et al.	
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	249	20110310442	A1	2011-12-22	Popadic et al.	
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	256	20120113489	A1	2012-05-10	Heit et al.	
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	260	20120230577	A1	2012-09-13	Calman et al.	
	261	20120296768	A1	2012-11-22	FREMONT-SMITH et al.	
	262	20130021651	A9	2013-01-24	Popadic et al.	
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	264	20130097076	A1	2013-04-18	Love	
	265	20130120595	A1	2013-05-16	Roach et al.	
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	267	20130191261	A1	2013-07-25	Chandler et al.	
	268	20130198071	A1	2013-08-01	Jurss	
	269	20130201534	A1	2013-08-08	Carlen et al.	

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
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	34	Wells Fargo'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, 7 pgs.	☐
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	36	White, J.M. et al., "Image Thresholding for Optical Character Recognition and Other Applications Requiring Character Image Extraction", IBM J. RES. Development, July 1983, vol. 27, no. 4 (12 pgs)	☐
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	45	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.	☐
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Name/Print	Christopher R. Abidin	Registration Number	74742

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	Attorney Docket Number	US-0691.12e | 56-10663

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EXAMINER SIGNATURE

Examiner Signature	/TIEN C NGUYEN/	Date Considered	01/05/2026

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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

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.

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

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	48	Claims as filed September 8, 2014 for U.S. Appln No. 14/479,478 (5 pgs).	☐
	49	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	☐
	50	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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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

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SIZE FEE ASSERTION

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

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	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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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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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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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First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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	1	IPR Petition 2022-01593, Truist Bank v. United Services Automobile Association filed October 11, 2022	☐
	2	IPR2019-00815 Patent No. 9,818,090, Decision Denying Institution of Inter Parties Review, dated August 26, 2019, 28 pgs.	☐
	3	IPR2019-00815 Patent No. 9,818,090, Declaration of Peter Alexander, PhD. as filed in the IPR on March 20, 2019, 99 pgs.	☐
	4	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,	☐
	5	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.	☐
	6	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.	☐
	7	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.	☐
	8	IPR2019-00815 Patent No. 9,818,090, Petitioner's Supplementai Exhibit List, dated August 1, 2019, 5 pgs.	☐
	9	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.	☐
	10	IPR2019-00815, Decision Denying Institution (August 26, 2019)	☐
	11	IPR2019-00815, Declaration of Matthew A. Calman in Support of Patent Owner Preliminary Response, dated June 27, 2019, 25 pgs.	☐

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	12	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.	☐
	13	IPR2019-00815, Invalidity Chart, uploaded on June 27, 2019, 94 pgs.	☐
	14	IPR2019-00815, Supplemental Invalidity Chart, dated on June 27, 2019, 16 pgs.	☐
	15	IPR2019-00815, United Services Automobile Association ("USAA")'s Patent Owner Preliminary Response, dated June 27, 2019, 66 pgs.	☐
	16	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.	☐
	17	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.	☐
	18	IPR2019-01081, Declaration of Peter Alexander, Ph.D, dated June 5, 2019, 135 pgs.	☐
	19	IPR2019-01081, Final Written Decision (January 11, 2021)	☐
	20	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.	☐
	21	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.	☐
	22	IPR2019-01082, Final Written Decision (November 24, 2020)	☐

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	23	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.	☐
	24	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.	☐
	25	IPR2019-01083, Final Written Decision (November 24, 2021)	☐
	26	IPR2020-00090, Institution Decision (May 11, 2020)	☐
	27	IPR2020-00090, Termination Settlement (February 12, 2021)	☐
	28	IPR2020-00091, Institution Decision (May 11, 2020)	☐
	29	IPR2020-00091, Termination Settlement (February 12, 2021)	☐
	30	IPR2020-00092, Institution Decision (May 11, 2020)	☐
	31	IPR2020-00092, Termination-Settlement (February 12, 2021)	☐
	32	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.	☐
	33	IPR2020-00093, Decision Denying Institution (May 13, 2020)	☐

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	34	IPR2020-00094, Decision Denying Institution (May 13, 2020)	☐
	35	IPR2020-00095, Institution Decision (June 2, 2020)	☐
	36	IPR2020-00095, Termination-Settlement (February 12, 2021)	☐
	37	IPR2020-00096, Institution Decision (June 2, 2020)	☐
	38	IPR2020-00096, Termination-Settlement (February 12, 2021)	☐
	39	IPR2020-00097, Institution Decision (June 2, 2020)	☐
	40	IPR2020-00097, Termination-Settlement (February 12, 2021)	☐
	41	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.	☐
	42	IPR2020-00882, Decision Denying Institution (November 6, 2020)	☐
	43	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.	☐
	44	IPR2020-00975, Decision Denying Institution (November 17, 2020)	☐

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	45	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.	☐
	46	IPR2020-00976, Decision Denying Institution (November 24, 2000)	☐
	47	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.	☐
	48	IPR2020-01101, Decision Denying Institution (January 26, 2021)	☐
	49	IPR2020-01516, Petition (August 25, 2020)	☐
	50	IPR2020-01516, Termination Settlement Pre-Institution (February 12, 2021)	☐

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Examiner Signature	/TIEN C NGUYEN/	Date Considered	01/05/2026

*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).

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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.

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☐ 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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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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

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	1	Nokia N95 8GB User Guide, copyright 2009, (from the Wells Fargo Bank, N.A. IPR2019-00815, filed on March 20, 2019), Part 2 of 3, 6O pgs.	☐
	2	Nokia N95 8GB User Guide, copyright 2009, (from the Wells Fargo Bank, N.A. IPR2019-00815, filed on March 20, 2019), Part 3 of 3, 53 pgs.	☐
	3	Nokia N95 8GB User Guide, copyright 2009, located on the Internet at: https://www.nokia.com/en_int/phones/sites/default/files/user-guides/Nokia_N95_8GB_Extended_UG_en.pdf (excerpts attached as Exhibit 9 from the Defendant Wells Fargo Bank, N.A.'s Answer dat4ed August 14, 2018), 77 pgs.	☐
	4	Non-Final Office Action issue on U.S. Application 17/511,822 on September 16, 2022 (14538-731)	☐
	5	Non-Final Office Action issued on U.S. Application 14/293,159 on August 11, 2022 (14538-335)	☐
	6	Non-Final Office Action issued on U.S. Application 16/455,024 on September 7, 2022 (14538-662)	☐
	7	Non-Final Office Action issued on U.S. Application 17/071,678 on September 14, 2022 (14538-705)	☐
	8	Non-Final Office Action issued on U.S. Application 17/180,075 on October 4, 2022 (14538-715)	☐
	9	Non-Final Office Action issued on U.S. Application 17/568,849 on October 4, 2022 (14538-736)	☐
	10	Notice of Allowance from corresponding U.S. Appln No. 12/545,127 dated January 17, 2013 (7 pgs).	☐
	11	Notice of Allowance from corresponding U.S. Appln No. 12/545,127 dated October 15, 2014 (24 pgs).	☐

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	12	Office Action dated October 9, 2013 from corresponding U.S. Appln No. 12/545,127 (7 pgs).	☐
	13	Office Action from corresponding U.S. Appln No. 12/545,127 dated April 9, 2014 (6 pgs).	☐
	14	Online Deposit: Frequently Asked Questions, http://www.depositnow.com/faq.html, Copyright 2008 (1 pg).	☐
	15	Onlinecheck.com/Merchant Advisors, "Real-Time Check Debit", Merchant Advisors: Retail Check Processing Check Conversion, http://www.onlinecheck/wach/rcareal.htm, Cited in patent no. 7,900,822, as dated 2006 (3 pgs)	☐
	16	Oxley, Michael G., from committee on Financial Services; "Check Clearing For The 21st Century Act", 108th Congress, 1st Session House of Representatives report 108-132, June 2003 (20 pgs)	☐
	17	Oxley, Michael G., from the committee of conference; "Check Clearing For the 21st Century Act", 108th Congress, 1st Session Senate report 108-291, October 1, 2003 (27 pgs)	☐
	18	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.	☐
	19	Palacios, Rafael et al., "Automatic Processing of Brazilian Bank Checks". Cited in patent no. 7,900,822, as dated 2002 (28 pgs)	☐
	20	Panasonic Operating Instructions for Digital Camera/Lens Kit Model No. DMC-L1K, https://www.panasonic.com/content/dam/Panasonic/support_manual/Digital_Still_Camera/English_01-vqt0-vqt2/vqt0w95_L1_oi.pdf (attached as Exhibit 4 from the Defendant Wells Fargo Bank N.A.'s Answer dated August 14, 2018), 129 pgs.	☐
	21	Panini My Vision X Operator Manual, Panini, 2004, (cited in IPR2020-00093, US Patent No. 9,892,454), 51 pgs.	☐
	22	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.	☐

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	23	Parikh, T., "Mobile Phones and Paper Documents: Evaluating a New Approach for Capturing Microfinance Data in Rural India", CHI 2006 Proceedings, 2006, 10 pgs.	☐
	24	Parikh, T., "Using Mobile Phones for Secure, Distributed Document Processing in the Developing World", IEE Persuasive Computing, Vol. 4, No. 2, 2005, 9 pgs.	☐
	25	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.	☐
	26	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.	☐
	27	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.	☐
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	29	Patel, Kunur, "How Mobile Technology is Changing Banking's Future", AdAge (September 21, 2009)	☐
	30	Patel, Kunur, Ad Age, "How Mobile Technology Ils Changing Banking's Future", dated September 21, 2009, 3 pgs.	☐
	31	Patent Disclaimer for US Patent No, 8,699,779, filed on March 4, 2019, 2 pgs.	☐
	32	Patent Disclaimer for US Patent No, 8,977,571, filed on February 20, 2019, 2 pgs.	☐
	33	Patent Disclaimer for US Patent No, 9,336,517, filed on March 4, 2019, 2 pgs.	☐

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	34	Patent Disclaimer for US Patent No, 9,818,090, filed on February 20, 2019, 2 pgs.	☐
	35	Patterson, Scott "USAA Deposit@Home — Another WOW moment for Net Banking", NextCU.com, 1/26/2007 (5 pgs)	☐
	36	Pbmplus — image file format conversion package, retrieved from https://web.archive.org/web/20040202224728/https://www.acme.com/software/pbmplus/	☐
	37	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	☐
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	43	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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	45	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.	☐
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	49	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.	☐
	50	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.	☐

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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

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	1	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)	☐
	2	Consumer Assistance & Information — Check 21, https://www.fdic.gov/consumers/assistance/protection/check21.html (FDIC)	☐
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	4	Craig Varearn, "Image Deposit Solutions" Emerging Solutions for More Efficient Check Processing", November 2005, 16 pages.	☐
	5	Craig, Ben, "Resisting Electronic Payment Systems: Burning Down the House?", Federal Reserve Bank of Cleveland, July 1999 (4 pgs)	☐
	6	Creativepaymentsolutions.com, "Creative Payment Solutions - Websolution," www.creativepaymentsolution.com/cps/financialservices/websolution/default.html, Copyright 2008, Creative Payment Solutions, Inc. (1 pg).	☐
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	10	Curtin, Denis P., A Short Course in Digital Photography Chapter 7 Graphic File Formats	☐
	11	Dance, Christopher, "Mobile Document Imaging", Xerox, Research Centre Europe, XRCE Image Processing Area, November 2004	☐

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	12	David B. Humphrey & Robert Hunt, Getting Rid of Paper: Savings From Check 21, Working Paper No. 12-12, Research Department, Federal Reserve Bank of Philadelphia, (May 2012), available on the Internet at: https:// philadelphiafed.org/-/media/research-and-data/publications/working-papers/2012/wp12-12.pdf (attached as Exhibit 14 from the Defendant Wells Fargo Bank, N.A.'s Answer dated August 14, 2018), 29 pgs.	☐
	13	DCT, MITEK SYSTEMS, INC. v. UNITED SERVICES AUTOMOBILE ASSOCIATION, No. 21-1989 (Fed. Cir. 2022) (slip op.)	☐
	14	DCT, MITEK SYSTEMS, INC. v. UNITED SERVICES AUTOMOBILE ASSOCIATION, No. 23-1687 (Fed. Cir. 2025) (slip op.)	☐
	15	DCT, United Services Automobile Association v. PNC Bank N.A., No. 23-1639 (Fed. Cir. 2025) (slip op.)	☐
	16	DCT, United Services Automobile Association v. PNC Bank N.A., No. 23-1778 (Fed. Cir. 2025) (slip op.)	☐
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	19	De Jesus, A. 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," Panini, 2004, pp 1-22.	☐
	20	De Jesus, Angie et al., "Distributed Check Processing In a Check 21 Environment", dated November, 2004, 22 pgs.	☐
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	23	Declaration of Peter Alexander, Ph.D., CBM2019-0004, November 8, 2018, 180 pgs.	☐
	24	Defendant Wells Fargo Bank, N.A.'s Amended Answer, Affirmative Defenses, and Counterclaims to Plaintiff's Complaint, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-366, dated April 12, 2019, 32 pgs.	☐
	25	Defendant Wells Fargo Bank, N.A.'s Answer, Affirmative Defenses, and Counterclaims to Plaintiffs Complaint, dated August 14, 2018, 64 pgs.	☐
	26	Defendant Wells Fargo Bank, N.A.'s Second Amended Answer, Affirmative Defenses, and Counterclaims To Plaintiffs Amended Complaint, United Services Automobile Association v. Wells Fargo Bank, N.A., Civil Action No. 2:18-cv-245, dated August 1, 2019, 72 pgs.	☐
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	28	Defendant's Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 31, 2019, 111 pgs.	☐
	29	Defendant's Claim Construction Brief, filed in Civil Action No. 2:18-CV-366, dated May 31, 2019, 28 pgs.	☐
	30	DeYoung, Robert; "The Financial Performance of Pure Play Internet Banks"; Federal Reserve Bank of Chicago Economic Perspectives; 2001; pages 60-75; Vol. 25, No. 1 (16pgs)	☐
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	33	Digital Photography Now, Nokia N73 Review, October 28, 2006	☐

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	34	Digital Transactions News, "An ACH-Image Proposal For Check Roils Banks and Networks" 5/26/2006 (3 pgs)	☐
	35	Dinan, R.F. et al., "Image Plus High Performance Transaction System", IBM Systems Journal, 1990 vol. 29, No. 3 (14 pgs)	☐
	36	Ding, Y. et al., "Background removal for check processing using morphology in Two-and Three-Dimensional Vision Systems for Inspection, Control, and Metrology". Vol. 5606, pp 19-26, SPIE 2004	☐
	37	Doermann, D. et al., "The function of documents", Image and Vision Computing, Vol. 16, 1998, pp 799-814.	☐
	38	Doermann, David et al., "Progress in Camera-Based Document Image Analysis," Proceedings of the Seventh International Conference on Document Analysis and Recognition (ICDAR 2003) 0-7695-1960-1/03, 2003 IEEE (11 pages).	☐
	39	DOERMANN, David, et al., Progress in Camera-Based Document Image Analysis, Proceedings of the Seventh Int'l Conf. on Document Analysis and Recognition, 2003, 11 pages.	☐
	40	Duvall, Mel, "Remote Deposit Capture," Baseline, Vol. 1, Issue 70, March 2007, 2 pgs.	☐
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	42	eCU Technologies, "Upost Remote Deposit Solution," Retrieved from the internet https://www.eutechnologies.com/products/upost.html, downloaded 2009 (1_pg).	☐
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	44	ElectronicPaymentProviders, Inc., "FAQs: ACH/ARC, CheckVerification/Conversion/Guarantee, RCK Check Re-Presentment," http://www.useapp.com/faq.htm, downloaded October 18, 2006 (3 pgs).	☐

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	45	Ex Parte Quayle Action from corresponding U.S. Appln No. 12/545,127 dated June 25, 2014 (6 pgs).	☐
	46	Excerpts from American National Standard for Financial Services, ANS, X9.100-140-2004-Specifications for an Image Repiacement Document — IRD, October 1, 2004, 16 pgs.	☐
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Signature	/Christopher R. Abidin/	Date (YYYY-MM-DD)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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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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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BIB DATA SHEET

CONFIRMATION NO. 1975

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
19/321,167	09/05/2025 RULE	705	3694	US-0691.12e | 56-10663

APPLICANTS

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

INVENTORS

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;

**** CONTINUING DATA ***************************

This application is a CON of 19/038,702 01/27/2025
which is a CON of 18/593,854 03/01/2024 PAT 12211095
which is a CON of 17/161,235 01/28/2021 ABN
which is a CON of 16/712,182 12/12/2019 PAT 11341465
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which is a CON of 15/792,966 10/25/2017 PAT 10235660
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which is a CON of 13/922,686 06/20/2013 PAT 9569756
which is a CON of 12/545,127 08/21/2009 PAT 8977571

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

09/25/2025

Foreign Priority claimed	❑ Yes ☑ No		STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
35 USC 119(a-d) conditions met	❑ Yes ☑ No	❑ Met after Allowance	TX	8	30	4
Verified and Acknowledged	/TIEN C NGUYEN/ Examiner's Signature	TN Initials				

ADDRESS

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

TITLE

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

FILING FEE RECEIVED	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT	❑ All Fees ❑ 1.16 Fees (Filing) ❑ 1.17 Fees (Processing Ext. of time) ❑ 1.18 Fees (Issue)

BIB (Rev. 05/07).

0.00	No._____ for following:	❑ Other _____ ❑ Credit

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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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	1	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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EXAMINER SIGNATURE

Examiner Signature	/TIEN C NGUYEN/	Date Considered	01/05/2026

*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

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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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☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).

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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
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Attorney Docket Number	US-0691.12e | 56-10663

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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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.**

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.

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L74	50	(Artificial Intelligence) Similar to: 19/321,167 # with 0 CPC Selections and 0 Text Selections Text: (US-8542921-B1 OR US-9946923-B1 OR US-10706466-B1 OR US-11915310-B1 OR US-11295377-B1 OR US-10380683-B1 OR US-9390574-B2 OR US-12175438-B1 OR US-20120230577-A1 OR US-8837806-B1 OR US-8712143-B2 OR US-20110211746-A1 OR EP-1429298-A2 OR US-9639750-B2 OR US-20160180168-A1 OR WO-2025080792-A1 OR US-20150117749-A1 OR US-20130132291-A1 OR US-20120113489-A1 OR US-8620058-B2 OR US-20130094751-A1 OR US-20210256641-A1 OR US-20220245607-A1 OR US-8326015-B2 OR CA-2798424-C OR US-20100208976-A2 OR CN-113902548-B OR TW-M598458-U OR US-20170193596-A1 OR US-20040006523-A1 OR US-20140037183-A1 OR KR-100438997-B1 OR TW-M594757-U OR CA-2798424-A1 OR US-8346578-B1 OR KR-101733467-B1 OR TW-201631542-A OR KR-20240116165-A OR US-20150052042-A1 OR US-20150213549-A1 OR TW-M592556-U OR US-10402898-B2 OR US-7778457-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2026/01/05 06:59 AM

		US-20100150424-A1 OR WO-0210959-A2 OR US-12079862-B1 OR US-20030208438-A1 OR US-10360641-B2 OR KR-20090024015-A OR US-20220222749-A1).did.					
L75	50	(Artificial Intelligence) Similar to: 19/321,167 # with 0 CPC Selections and 5 Text Selections Text: (US-20120113489-A1 OR US-8837806-B1 OR US-20100208976-A2 OR US-10706466-B1 OR US-11295377-B1 OR US-8890978-B1 OR CA-2756913-A1 OR US-7580952-B2 OR US-8542921-B1 OR US-9946923-B1 OR US-11915310-B1 OR US-7949176-B2 OR US-9760788-B2 OR US-11176362-B1 OR US-20220036061-A1 OR US-10699146-B2 OR US-20190171906-A1 OR US-10380683-B1 OR US-20130094751-A1 OR US-8620058-B2 OR US-20080208727-A1 OR US-7567725-B2 OR US-7778457-B2 OR US-20100150424-A1 OR CA-2734202-A1 OR CN-101536031-B OR JP-2012533962-A OR US-12175438-B1 OR US-20120020532-A1 OR JP-H07200720-A OR AU-2021107632-A4 OR US-8326015-B2 OR JP-5330246-B2 OR US-20090041344-A1 OR US-7953268-B2 OR US-8406530-B2 OR EP-2546801-B1 OR US-20200293812-A1 OR DE-102016100134-A1 OR US-11210550-B2 OR WO-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2026/01/05 06:59 AM

		2025080792-A1 OR US-20120230577-A1 OR WO-2015171815-A1 OR CA-2734202-C OR US-10423826-B2 OR US-7035461-B2 OR EP-1394723-A2 OR US-8712143-B2 OR US-20110211746-A1 OR EP-2637138-A1).did.					
L76	50	(Artificial Intelligence) Similar to: 19/321,167 # with 4 CPC Selections and 5 Text Selections Text: (US-10706466-B1 OR US-8837806-B1 OR US-11295377-B1 OR US-20200293812-A1 OR US-11210550-B2 OR WO-2015171815-A1 OR US-9117117-B2 OR US-20150098628-A1 OR DE-102016100134-A1 OR US-11915310-B1 OR US-20160205283-A1 OR US-10380683-B1 OR US-8542921-B1 OR US-8989515-B2 OR EP-2803016-B1 OR US-20130182970-A1 OR US-11087407-B2 OR US-10664919-B2 OR US-10657600-B2 OR US-20170109830-A1 OR US-20170046788-A1 OR US-8879120-B2 OR US-20130182002-A1 OR US-20140328520-A1 OR US-8971587-B2 OR CN-116188508-A OR US-20120113489-A1 OR US-10970779-B2 OR US-20080208727-A1 OR US-20170293818-A1 OR US-20220245607-A1 OR US-8890978-B1 OR US-20100208976-A2 OR WO-2015100294-A1 OR DE-102023111652-A1 OR CA-2756913-A1 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2026/01/05 06:00 AM

		US-12322115-B2 OR US-20110026051-A1 OR CN-102576456-B OR CN-1842821-A OR BE-1026095-B1 OR JP-5906188-B2 OR JP-4807950-B2 OR CN-120088330-B OR JP-2013501264-A OR US-20020001393-A1 OR US-7949176-B2 OR KR-100828194-B1 OR WO-2013158166-A1 OR US-8620058-B2).did.					
L77	214560	(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:00 AM
L78	39	L77 AND L74	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:00 AM
L79	23	L77 AND L75	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2026/01/05 06:00 AM

			NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L80	12	L79 AND L78	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:00 AM
L81	12	L80 AND L76	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:01 AM
L82	131	("8542921").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:01 AM
L83	1	("12211095").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:02 AM
L84	0	("12505414").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:02 AM
L85	4887	(mobil$3 OR (smart phone) OR (mobile phone) OR (cell phone)) WITH (check$3) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO,	OR	ON	ON	2026/01/05 06:03 AM

			MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L86	187191	(captur$3 OR obtain$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (imag$3 OR pictur$3 OR photo$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:03 AM
L87	3381	(generat$3 OR creat$3) near7 (video OR (live video)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:03 AM
L88	1690	(overlaying OR overlay OR overlaid$3) WITH (alignment$3 OR align$3) near7 (guide OR guidanc$3 OR instruction$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:03 AM
L89	3231	(view$3 OR (camera	(US-PGPUB; USPAT;	OR	ON	ON	2026/01/05

		view)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3)	USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				06:03 AM
L90	6115	(monitor$3) near7 (video OR (live video)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:03 AM
L91	5381	(video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:03 AM
L92	1241	L85 AND L86	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2026/01/05 06:03 AM

			NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L93	42	L92 AND L87	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:03 AM
L94	3	L93 AND L88	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:04 AM
L95	3	L94 AND L89	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:04 AM
L96	3	L95 AND L90	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2026/01/05 06:04 AM

			AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L97	3	L96 AND L91	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:04 AM
L98	214560	(G06Q40/02 OR G06T7/13 OR G06V10/60 OR G06T2207/20164).cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:04 AM
L99	3	L98 AND L97	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO,	OR	ON	ON	2026/01/05 06:05 AM

			RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L101	1	("12159310").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:06 AM
L103	1040	(determin$3) WITH (video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:07 AM
L104	34	(satisfy OR satisf$3) near7 (criteria$3 OR requirement$3) WITH (monitor$3) near7 (video OR (live video)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:07 AM
L105	2512356	(advis$3 OR notif$3 OR feedback$3) near7 (user$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:07 AM

L106	328	(satisfy OR satisf$3) near7 (criteria$3 OR requirement$3) WITH (video OR (live video)) near30 (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:07 AM
L107	9548	(updat$3) WITH (balanc$3) near7 (account$3)	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:08 AM
L108	123975	(bank$3 OR financial$3) near7 (institution$3)	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:08 AM
L109	980	(optical$3) near7 (character$3 OR (character recognition)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:08 AM
L110	5381	(video) near7 (frame OR fram$3) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3 OR imag$3 OR pictur$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:08 AM
L111	3231	(view$3 OR (camera view)) WITH (check$3 OR echeck$3 OR echeque OR cheque) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL,	OR	ON	ON	2026/01/05 06:08 AM

			PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L112	4887	(mobil$3 OR (smart phone) OR (mobile phone) OR (cell phone)) WITH (check$3) near7 (deposit$3)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:08 AM
L113	0	L103 AND L104	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:08 AM
L114	0	L113 AND L105	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:08 AM
L115	16	L106 AND L103	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2026/01/05 06:08 AM

			AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L116	15	L115 AND L105	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:08 AM
L117	0	L116 AND L107	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:09 AM
L118	0	L117 AND L108	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO,	OR	ON	ON	2026/01/05 06:09 AM

			RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L119	9141	L107 AND L108	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:09 AM
L120	61	L119 AND L109	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:09 AM
L121	5	L120 AND L110	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:09 AM
L122	5	L121 AND L111	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2026/01/05 06:09 AM

			CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L123	5	L122 AND L112	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:10 AM
L124	5	L123 AND L98	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:10 AM
L125	3	L124 AND L99	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK,	OR	ON	ON	2026/01/05 06:10 AM

			TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L126	0	("12505414").urpn. AND (PGPB | USPT | USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:10 AM
L131	121	("7391934" | "7421107" | "7587066" | "7698222" | "7702588" | "7856402" | "7905396" | "7949587" | "8027928" | "8050997" | "8060442" | "8296230" | "8300917" | "8406500" | "8464933" | "8582862" | "8605982" | "8638363" | "8660952" | "8708227" | "8745073" | "8811711" | "8958605" | "8959033" | "8995012" | "9064248" | "9324073" | "9384392" | "9569756" | "9640041" | "9652690" | "9672510" | "9721177" | "9747509" | "9779392" | "9852406" | "10026119" | "10192108" | "10210522" | "10217375" | "10402790" | "10460381" | "10504185" | "10540714" | "10552810" | "10635898" | "10692230" | "10699146" | "10706466" | "10762579" | "10769598" | "10789496" | "10853771" | "10855914" | "10909362" | "11064111" | "11127008" | "11145169" | "11157731" | "11159733" | "11200550" | "11216884" | "11244319" | "11282086" | "11295377" | "11295378" | "11315217" | "11321709" |	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/01/05 06:16 AM

		"11348075" | "11373150" | "11449841" | "11516383" | "11531973" | "11562332" | "11610294" | "11640627" | "11676285" | "11694268" | "11704627" | "11710210" | "20030080958" | "20060036537" | "20080140579" | "20090306885" | "20120040717" | "20130198069" | "20130204783" | "20140074697" | "20140114852" | "20140122332" | "20140270461" | "20150116520" | "20150120564" | "20170099439" | "20170270508" | "20180276528" | "20200042955" | "20200389600" | "20210303919" | "20210360149" | "20210383558" | "20220138909" | "20220245607" | "20220277086" | "20220335393" | "20220343301" | "20220343474" | "20220358575" | "20230038844" | "20230060395" | "20230060464" | "20230084370" | "20230109047" | "20230133158" | "20230196319" | "20230196706" | "20230237623" | "20230281629" | "20230359057" | "20230409631" | "20240037762").pn. AND (PGPB | USPT | USOC).dbnm.				
L133	214560	(G06Q40/02 OR G06T7/13 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2026/01/05 06:18 AM

		G06V10/60 OR G06T2207/20164).cpc.	AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L134	30	L133 AND L131	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:18 AM
L135	0	L120 AND L134	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/01/05 06:19 AM
L136	0	L134 AND L65	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO,	OR	ON	ON	2026/01/05 06:19 AM

			RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				

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
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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	7114649	B2	2006-10-03	Nelson et al.	
	2	7116446	B2	2006-10-03	Maurer	
	3	7117171	B1	2006-10-03	Pollin	
	4	7120461	B2	2006-10-10	Cho	
	5	7120461	B2	2006-10-10	Cho	
	6	7139594	B2	2006-11-21	Nagatomo	
	7	7140539	B1	2006-11-28	Crews et al.	
	8	7156311	B2	2007-01-02	Attia et al.	

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	9	7163347	B2	2007-01-16	Lugg	
	10	7178721	B2	2007-02-20	Maloney	
	11	7181430	B1	2007-02-20	Buchanan et al.	
	12	7184980	B2	2007-02-27	Allen-Rouman et al.	
	13	7197173	B2	2007-03-27	Jones et al.	
	14	7200255	B2	2007-04-03	Jones et al.	
	15	7204412	B2	2007-04-17	Foss, Jr.	
	16	7207478	B1	2007-04-24	Blackson et al.	
	17	7216106	B1	2007-05-08	Buchanan et al.	
	18	7219082	B2	2007-05-15	Forte	
	19	7219831	B2	2007-05-22	Murata	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	20	7240336	B1	2007-07-03	Baker	
	21	7245765	B2	2007-07-17	Myers et al.	
	22	7249076	B1	2007-07-24	Pendleton et al.	
	23	7252224	B2	2007-08-07	Verma	
	24	7257246	B1	2007-08-14	Brodie et al.	
	25	7266230	B2	2007-09-04	Doran	
	26	7290034	B2	2007-10-30	Budd et al.	
	27	7296734	B2	2007-11-20	Pliha	
	28	7299970	B1	2007-11-27	Ching	
	29	7299979	B2	2007-11-27	Phillips et al.	
	30	7313543	B1	2007-12-25	Crane et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	31	7314163	B1	2008-01-01	Crews et al.	
	32	7321874	B2	2008-01-22	Dilip et al.	
	33	7321875	B2	2008-01-22	Dilip et al.	
	34	7325725	B2	2008-02-05	Foss, Jr.	
	35	7328190	B2	2008-02-05	Smith et al.	
	36	7330604	B2	2008-02-12	Wu et al.	
	37	7331523	B2	2008-02-19	Meier et al.	
	38	7336813	B2	2008-02-26	Prakash et al.	
	39	7343320	B1	2008-03-11	Treyz et al.	
	40	7349566	B2	2008-03-25	Jones et al.	
	41	7349585	B2	2008-03-25	li	

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	42	7356505	B2	2008-04-08	March	
	43	7369713	B2	2008-05-06	Suino	
	44	7377425	B1	2008-05-27	Ma et al.	
	45	7379978	B2	2008-05-27	Anderson et al.	
	46	7385631	B2	2008-06-10	Maeno et al.	
	47	7386511	B2	2008-06-10	Buchanan et al.	
	48	7388683	B2	2008-06-17	Rodriguez et al.	
	49	7389912	B2	2008-06-24	Carlson et al.	
	50	7391897	B2	2008-06-24	Jones et al.	
	51	7391934	B2	2008-06-24	Goodall et al.	
	52	7392935	B2	2008-07-01	Byrne et al.	

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	53	7401048	B2	2008-07-15	Rosedale et al.	
	54	7403917	B1	2008-07-22	Larsen	
	55	7406198	B2	2008-07-29	Aoki et al.	
	56	7419093	B1	2008-09-02	Blackson et al.	
	57	7421107	B2	2008-09-02	Lugg	
	58	7421410	B1	2008-09-02	Schechtman et al.	
	59	7427016	B2	2008-09-23	Chimento	
	60	7433098	B2	2008-10-07	Klein et al.	
	61	7437327	B2	2008-10-14	Lam et al.	
	62	7440924	B2	2008-10-21	Buchanan et al.	
	63	7447347	B2	2008-11-04	Weber	

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	64	7455220	B2	2008-11-25	Phillips et al.	
	65	7455221	B2	2008-11-25	Sheaffer	
	66	7460108	B2	2008-12-02	Tamura	
	67	7460700	B2	2008-12-02	Tsunashima et al.	
	68	7461779	B2	2008-12-09	Ramachandran	
	69	7461780	B2	2008-12-09	Potts et al.	
	70	7471818	B1	2008-12-30	Price et al.	
	71	7475040	B2	2009-01-06	Buchanan et al.	
	72	7477923	B2	2009-01-13	Wallmark et al.	
	73	7480382	B2	2009-01-20	Dunbar et al.	
	74	7480422	B2	2009-01-20	Ackley et al.	

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	75	7489953	B2	2009-02-10	Griffin	
	76	7490242	B2	2009-02-10	Torres et al.	
	77	7497429	B2	2009-03-03	Reynders et al.	
	78	7503486	B2	2009-03-17	Ahles et al.	
	79	7505759	B1	2009-03-17	Rahman	
	80	7506261	B2	2009-03-17	Satou et al.	
	81	7509287	B2	2009-03-24	Nutahara et al.	
	82	7512564	B1	2009-03-31	Geer	
	83	7519560	B2	2009-04-14	Lam et al.	
	84	7520420	B2	2009-04-21	Phillips et al.	
	85	7520422	B1	2009-04-21	Robinson et al.	

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	86	7536354	B1	2009-05-19	deGroeve et al.	
	87	7536440	B2	2009-05-19	Budd et al.	
	88	7539646	B2	2009-05-26	Gilder et al.	
	89	7540408	B2	2009-06-02	Levine et al.	
	90	7542598	B2	2009-06-02	Jones et al.	
	91	7545529	B2	2009-06-09	Borrey et al.	
	92	7548641	B2	2009-06-16	Gilson et al.	
	93	7566002	B2	2009-07-28	Love et al.	
	94	7568615	B2	2009-08-04	Corona et al.	
	95	7571848	B2	2009-08-11	Cohen et al.	
	96	7577614	B1	2009-08-18	Warren et al.	

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	97	7587066	B2	2009-09-08	Cordery et al.	
	98	7587363	B2	2009-09-08	Cataline et al.	
	99	7590275	B2	2009-09-15	Clarke et al.	
	100	7599543	B2	2009-10-06	Jones et al.	
	101	7599888	B2	2009-10-06	Manfre et al.	
	102	7602956	B2	2009-10-13	Jones et al.	
	103	7606762	B1	2009-10-20	Heit	
	104	7609873	B2	2009-10-27	Foth et al.	
	105	7619721	B2	2009-11-17	Jones et al.	
	106	7620231	B2	2009-11-17	Jones et al.	
	107	7620604	B1	2009-11-17	Bueche, Jr.	

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	108	7630518	B2	2009-12-08	Frew et al.	
	109	7644037	B1	2010-01-05	Ostrovsky	
	110	7644043	B2	2010-01-05	Minowa	
	111	7647275	B2	2010-01-12	Jones	
	112	7647897	B2	2010-01-19	Ootomo et al.	
	113	7668363	B2	2010-02-23	Price et al.	
	114	7672940	B2	2010-03-02	Viola et al.	
	115	7676409	B1	2010-03-09	Ahmad	
	116	7680732	B1	2010-03-16	Davies et al.	
	117	7680735	B1	2010-03-16	Loy	
	118	7689482	B2	2010-03-30	Lam et al.	

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	119	7697776	B2	2010-04-13	Wu et al.	
	120	7698222	B1	2010-04-13	Bueche, Jr.	
	121	7702588	B2	2010-04-20	Gilder et al.	
	122	7734545	B1	2010-06-08	Fogliano et al.	
	123	7743979	B2	2010-06-29	Fredman	
	124	7753268	B1	2010-07-13	Robinson et al.	
	125	7761358	B2	2010-07-20	Craig et al.	
	126	7766223	B1	2010-08-03	Mello et al.	
	127	7766244	B1	2010-08-03	Field et al.	
	128	7769650	B2	2010-08-03	Bleunven et al.	
	129	7778457	B2	2010-08-17	Nepomniachtchi et al.	

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	130	7778457	B2	2010-08-17	Nepomniachtchi et al.	
	131	7792752	B1	2010-09-07	Kay	
	132	7792753	B1	2010-09-07	Slater et al.	
	133	7792753	B1	2010-09-07	Slater et al.	
	134	7793833	B2	2010-09-14	Yoon et al.	
	135	7810714	B2	2010-10-12	Murata	
	136	7812986	B2	2010-10-12	Graham et al.	
	137	7818245	B2	2010-10-19	Prakash et al.	
	138	7856402	B1	2010-12-21	Kay	
	139	7865425	B2	2011-01-04	Waelbroeck et al.	
	140	7873200	B1	2011-01-18	Oakes, III et al.	

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	141	7873200	B1	2011-01-18	Oakes, III et al.	
	142	7873556	B1	2011-01-18	Dolan et al.	
	143	7876949	B1	2011-01-25	Oakes, III et al.	
	144	7885451	B1	2011-02-08	Walls et al.	
	145	7885880	B1	2011-02-08	Prasad et al.	
	146	7894094	B2	2011-02-22	Nacman et al.	
	147	7896232	B1	2011-03-01	Prasad et al.	
	148	7900822	B1	2011-03-08	Prasad et al.	
	149	7903863	B2	2011-03-08	Jones et al.	
	150	7904386	B2	2011-03-08	Kalra et al.	
	151	7912785	B1	2011-03-22	Kay	

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	152	7935441	B2	2011-05-03	Tononishi	
	153	7949587	B1	2011-05-24	Morris et al.	
	154	7950698	B2	2011-05-31	Popadic et al.	
	155	7953441	B2	2011-05-31	Lors	
	156	7962411	B1	2011-06-14	Prasad et al.	
	157	7970677	B1	2011-06-28	Oakes, III et al.	
	158	7974869	B1	2011-07-05	Sharma et al.	
	159	7974899	B1	2011-07-05	Prasad et al.	
	160	7978900	B2	2011-07-12	Nepomniachtchi et al.	
	161	7987231	B2	2011-07-26	Karkanias	
	162	7996312	B1	2011-08-09	Beck et al.	

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	163	7996314	B1	2011-08-09	Smith et al.	
	164	7996315	B1	2011-08-09	Smith et al.	
	165	7996316	B1	2011-08-09	Smith et al.	
	166	8000514	B2	2011-08-16	Nepomniachtchi et al.	
	167	8001051	B1	2011-08-16	Smith et al.	
	168	8009931	B2	2011-08-30	Li et al.	
	169	8045784	B2	2011-10-25	Price et al.	
	170	8046301	B1	2011-10-25	Smith et al.	
	171	8051453	B2	2011-11-01	Arseneau et al.	
	172	8060442	B1	2011-11-15	Hecht et al.	
	173	8064729	B2	2011-11-22	Li et al.	

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	174	8116533	B2	2012-02-14	Kiplinger et al.	
	175	8118654	B1	2012-02-21	Nicolas et al.	
	176	8131636	B1	2012-03-06	Viera et al.	
	177	8203640	B2	2012-06-19	Kim et al.	
	178	8204293	B2	2012-06-19	Csulits et al.	
	179	8235284	B1	2012-08-07	Prasad et al.	
	180	8275715	B2	2012-09-25	Caruso et al.	
	181	8320657	B1	2012-11-27	Burks et al.	
	182	8341077	B1	2012-12-25	Nichols et al.	
	183	8351678	B1	2013-01-08	Medina, III	
	184	8358826	B1	2013-01-22	Medina, III et al.	Entire Document

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	185	8369650	B2	2013-02-05	Zamfir et al.	
	186	8374963	B1	2013-02-12	Billman	
	187	8391599	B1	2013-03-05	Medina, III	
	188	8392332	B1	2013-03-05	Oakes, III et al.	
	189	8401962	B1	2013-03-19	Bent et al.	
	190	8422758	B1	2013-04-16	Bueche, Jr.	Entire Document
	191	8433127	B1	2013-04-30	Harpel et al.	
	192	8433647	B1	2013-04-30	Yarbrough	
	193	8452689	B1	2013-05-28	Medina, III	
	194	8464933	B1	2013-06-18	Prasad et al.	
	195	8483473	B2	2013-07-09	Roach et al.	

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	196	8531518	B1	2013-09-10	Zomet	
	197	8538124	B1	2013-09-17	Harpel et al.	
	198	8542921	B1	2013-09-24	Medina	
	199	8548267	B1	2013-10-01	Yacoub et al.	
	200	8559766	B2	2013-10-15	Tilt et al.	
	201	8582862	B2	2013-11-12	Nepomniachtchi et al.	
	202	8611635	B1	2013-12-17	Medina, III	
	203	8660952	B1	2014-02-25	Viera et al.	
	204	8708227	B1	2014-04-29	Oakes, III et al.	
	205	8725607	B2	2014-05-13	Dunn et al.	
	206	8731321	B2	2014-05-20	Fujiwara et al.	

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	207	8732081	B1	2014-05-20	Oakes, III et al.	
	208	8751345	B1	2014-06-10	Borzych et al.	
	209	8751356	B1	2014-06-10	Garcia	
	210	8751379	B1	2014-06-10	Bueche, Jr.	
	211	8768038	B1	2014-07-01	Sherman et al.	
	212	8768836	B1	2014-07-01	Acharya	
	213	8799147	B1	2014-08-05	Walls et al.	
	214	8818033	B1	2014-08-26	Liu et al.	
	215	8824772	B2	2014-09-02	Viera et al.	
	216	8837806	B1	2014-09-16	Ethington et al.	
	217	8843405	B1	2014-09-23	Hartman et al.	

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	218	8929640	B1	2015-01-06	Mennie et al.	
	219	8950033	B1	2015-02-10	Keeler	
	220	8977571	B1	2015-03-10	Bueche, Jr. et al.	
	221	8990862	B1	2015-03-24	Smith	
	222	9009071	B1	2015-04-14	Watson et al.	
	223	9036040	B1	2015-05-19	Danko	
	224	9058512	B1	2015-06-16	Medina, III	
	225	9064284	B1	2015-06-23	Janiszeski et al.	
	226	9129340	B1	2015-09-08	Medina, III et al.	
	227	9159101	B1	2015-10-13	Pollack et al.	
	228	9177197	B1	2015-11-03	Prasad et al.	

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	229	9177198	B1	2015-11-03	Prasad et al.	
	230	9195986	B2	2015-11-24	Christy et al.	
	231	9224136	B1	2015-12-29	Oakes, III et al.	
	232	9235860	B1	2016-01-12	Boucher et al.	
	233	9270804	B2	2016-02-23	Dees et al.	
	234	9286514	B1	2016-03-15	Newman	
	235	9311634	B1	2016-04-12	Hildebrand	
	236	9336517	B1	2016-05-10	Prasad et al.	
	237	9384409	B1	2016-07-05	Ming	
	238	9390339	B1	2016-07-12	Danko	
	239	9401011	B2	2016-07-26	Medina, III et al.	

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	240	9424569	B1	2016-08-23	Sherman et al.	
	241	9569756	B1	2017-02-14	Bueche, Jr. et al.	Entire Document
	242	9613467	B2	2017-04-04	Roberts et al.	
	243	9613469	B2	2017-04-04	Fish et al.	
	244	9619872	B1	2017-04-11	Medina, III et al.	
	245	9626183	B1	2017-04-18	Smith et al.	
	246	9626662	B1	2017-04-18	Prasad et al.	
	247	9674396	B1	2017-06-06	Pashintsev et al.	
	248	9779392	B1	2017-10-03	Prasad et al.	
	249	9779452	B1	2017-10-03	Medina et al.	
	250	9785929	B1	2017-10-10	Watson et al.	

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	251	9792654	B1	2017-10-17	Limas et al.	
	252	9818090	B1	2017-11-14	Bueche, Jr. et al.	
	253	9818090	B1	2017-11-14	Bueche, Jr. et al.	
	254	9824453	B1	2017-11-21	Collins et al.	
	255	9872454	B2	2018-01-23	Davies	
	256	9886642	B1	2018-02-06	Danko	
	257	9898778	B1	2018-02-20	Pollack et al.	
	258	9898808	B1	2018-02-20	Medina, III et al.	
	259	9904848	B1	2018-02-27	Newman	
	260	9946923	B1	2018-04-17	Medina	
	261	RE31692	E	1984-10-02	Tyburski et al.	

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	262	RE44274	E	2013-06-11	Popadic et al.	
	263	10013605	B1	2018-07-03	Oakes, III et al.	
	264	10013681	B1	2018-07-03	Oakes, III et al.	
	265	10157326	B2	2018-12-18	Long et al.	
	266	10181087	B1	2019-01-15	Danko	
	267	10210767	B2	2019-02-19	Johansen et al.	
	268	10217375	B2	2019-02-26	Waldron et al.	
	269	10235660	B1	2019-03-19	Bueche, Jr. et al.	
	270	10325420	B1	2019-06-18	Moon	
	271	10354235	B1	2019-07-16	Medina, III	
	272	10360448	B1	2019-07-23	Newman	

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	273	10373136	B1	2019-08-06	Pollack et al.	
	274	10380559	B1	2019-08-13	Oakes, III et al.	
	275	10380562	B1	2019-08-13	Prasad et al.	
	276	10380565	B1	2019-08-13	Prasad	
	277	10380683	B1	2019-08-13	Voutour et al.	
	278	10380993	B1	2019-08-13	Clauer Salyers	
	279	10402638	B1	2019-09-03	Oakes, III et al.	
	280	10402790	B1	2019-09-03	Clark et al.	
	281	10460295	B1	2019-10-29	Oakes, III et al.	
	282	10482432	B1	2019-11-19	Oakes, III et al.	
	283	10504185	B1	2019-12-10	Buentello	

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	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
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☐ 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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	25	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.	☐
	26	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.	☐
	27	Check Clearing for the 21st Century Act, H. R. Rep. No. 108-132, June 2, 2003, 20 pgs.	☐
	28	Cheq Information Technology White Paper, "Teller Scanner Performance and Scanner Design: Camera Position Relative to the Feeder", dated 2005, 7 pgs.	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

	29	Chiang, Chuck, The Bulletin, "Remote banking offered", http://bendbulletin.com/apps/pbcs.dll/article?AID=/20060201/BIZ0102/602010327&templ..., May 23, 2008 (2 pgs).	☐
	30	Claim Construction Memorandum Opinion and Order, filed in Civil Action No. 2:18-CV-245, dated June 13, 2019, 48 pgs.	☐
	31	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.	☐
	32	Claims as filed January 24, 2018 for U.S. Appln No. 15/878,821 (5 pgs).	☐
	33	Claims as filed January 31, 2018 for U.S. Appln No. 15/884,990 (6 pgs).	☐
	34	Claims as filed May 18, 2018 for U.S. Appln No. 15/983,983 (3 pgs).	☐
	35	Claims as filed on April 1, 2013 for U.S. Appln No. 13/854,521 (5 pgs).	☐
	36	Claims as filed on April 3, 2008 for U.S. Appln No. 12/062,163 (3 pgs).	☐
	37	Claims as filed on April 3, 2008 for U.S. Appln No. 12/062,175 (3 pgs).	☐
	38	Claims as filed on April 30, 2013 for U.S. Appln No. 13/874,145 (5 pgs).	☐
	39	Claims as filed on April 9, 2018 for U.S. Appln No. 15/948,510 (5 pgs)	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
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	Attorney Docket Number	US-0691.12e | 56-10663

	40	Claims as filed on April 9, 2018 for U.S. Appln No. 15/948,549 (5 pgs)	☐
	41	Claims as filed on August 19, 2010 for U.S. Appln No. 12/859,752 (5 pgs).	☐
	42	Claims as filed on August 21, 2009 for U.S. Appln No. 12/545,127 (5 pgs).	☐
	43	Claims as filed on December 15, 2011 for U.S. Appln No. 13/327,478 (4 pgs).	☐
	44	Claims as filed on December 20, 2006 for U.S. Appln No. 11/613,671 (3 pgs).	☐
	45	Claims as filed on December 20, 2012 for U.S. Appln No. 13/722,576 (4 pgs).	☐
	46	Claims as filed on December 28, 2016 for U.S. Appln No. 15/392,950 (5 pgs).	☐
	47	Claims as filed on December 29, 2005 for U.S. Appln No. 11/320,998 (3 pgs).	☐
	48	Claims as filed on December 29, 2005 for U.S. Appln No. 11/321,027 (3 pgs).	☐
	49	Claims as filed on December 8, 2010 for U.S. Appln No. 12/963,513 (7 pgs).	☐
	50	Claims as filed on December 9, 2015 for U.S. Appln No. 14/964,279 (5 pgs).	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

If you wish to add additional non-patent literature document citation information, please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/TIEN C NGUYEN/	Date Considered	01/05/2026

*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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	19321167
Filing Date	2025-09-05
First Named Inventor	Michael Patrick Bueche Jr.
Art Unit	3694
Examiner Name	TIEN C NGUYEN
Attorney Docket Number	US-0691.12e | 56-10663

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)	2025-11-30
Name/Print	Christopher R. Abidin	Registration Number	74742

INFORMATION DISCLOSURE STATEMENT BY APPLICANT		
	Application Number	19321167
	Filing Date	2025-09-05
	First Named Inventor	Michael Patrick Bueche Jr.
	Art Unit	3694
	Examiner Name	TIEN C NGUYEN
	Attorney Docket Number	US-0691.12e | 56-10663

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.**

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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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**04/20/2026 03:28:23 AM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	75361166	FILING DATE	09/05/2025
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
web85b.pdf	3	Issue Fee Payment (PTO-85B)	58 KB
web85bfeeaddress.pdf	1	Maintenance Fee Address Change	26 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
web85b.pdf	F6392E92E500B5977C9E7BAA795F28EE6ECB6C57BDBE33C1 FE87D1FBEA7D6A43C27522896F42E0410CE9FAD2819573B04 4F4745A21ABA717C2BDD38EC444DA9A

web85bfeeaddress.pdf

8AA9BA988422031BBE94EB3C52DC051CBF236AA0222D1F00
B95A1C516CCFAD47EA904D3A494AFD62639358267BF255AD
B5D5F2858A3D8D5274A665A8D9B52D16

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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Ceremonial Copy Requested

APPLICATION #	ATTORNEY DOCKET #	FILED ON
19321167	**US-0691.12e | 56-10663**	**09/05/2025**

Applicant requests a courtesy ceremonial copy of the electronic patent grant for application 19321167 on 04/20/2026 03:28:23 AM. Applicant understands that the electronic patent grant is the official statutory patent grant.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**04/20/2026 03:28:23 AM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	75361166	AUTHORIZED BY	-
CUSTOMER #	197306	FILING DATE	09/05/2025
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 504184	**E20264J428406021**	**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**

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.

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ISSUE FEE TRANSMITTAL FORM

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
19321167	**09/05/2025**	**Michael Bueche**	**US-0691.12e | 56-10663**

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	05/04/2026
CONFIRMATION #	1975	ISSUE FEE DUE	$ 1290
EXAMINER	TIEN NGUYEN	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
For printing on the patent front page, list to be displayed as entered

Carmichael IP, PLLC

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	04/20/2026

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PATENT AND TRADEMARK OFFICE

P.O. Box 1450
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www.uspto.gov

FEE ADDRESS INDICATION FORM

APPLICATION #	ATTORNEY DOCKET #	FILING DATE
19321167	**US-0691.12e | 56-10663**	**09/05/2025**

Title of Invention

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

Application Information

ART UNIT	3694	FIRST NAMED INVENTOR	Michael Bueche
EXAMINER	TIEN NGUYEN		

INSTRUCTIONS: In order for the fee address identified on this form to be effective, the issue fee must have been paid for the application listed on this form. Only an address represented by a customer number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application. For more information on customer numbers, see the Manual of Patent Examining Procedure (MPEP) § 403

Maintenance Fee Address

Please recognize as the Fee Address under the provisions of 37 CFR 1.363 the address associated with:

77488 - USAA IP Counsel

9800 Fredericksburg Road
San Antonio, TX 78288
UNITED STATES

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.

Signature	Name	Registration #	Date
/Christopher R. Abidin/	Christopher Abidin	74742	04/20/2026

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.: 19/321,167 Examiner: TIEN C NGUYEN

Filed: September 5, 2025 Confirmation No.: 1975

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 (at pages 2-3 of the Notice of Allowance dated February 2, 2026), 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-0691.12e | 56-10663) 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: April 20, 2026

By: /Christopher R. Abidin/
Christopher R. Abidin
Reg. No. 74,742

Steven T. Schreiner
Reg. No. 43,097

Carmichael IP, PLLC
Customer No. 135533

chris@carmichaelip.com
(703) 646-9251

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/321,167	**04/20/2026 03:23:40 AM Z ET**	**US-0691.12e | 56-10663**

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 #	1975	FILED BY	Christopher Abidin
PATENT CENTER #	75361164	FILING DATE	09/05/2025
CUSTOMER #	197306	FIRST NAMED INVENTOR	Michael Patrick Bueche JR.
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2026-04-20_US-0691-12e_Comments-on-Reasons-for-Allowance.pdf	2	Miscellaneous Incoming Letter	57 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2026-04-20_US-0691-12e_Comments-on-Reasons-for-Allowance.pdf	672ED0108652653A0D69668A39D8488AEFED1282DAEE6B87FD98B6F1B8C5E35DA7F1CA18CE7B027620D64EB5A70D14B1AFCA8092727C558123B57B5E16480AF4

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New International Application Filed with the USPTO as a Receiving Office

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APPLICATION #	FILING OR 371(C) DATE	REQUEST ID
19/321,167	09/05/2025	25755208

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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8607 Westwood Center Drive, Suite 270
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(application filed on or after May 29, 2000)

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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.

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Patent

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(12) **United States Patent**
Bueche, Jr. et al.

(10) **Patent No.: US 12,632,899 B1**
(45) **Date of Patent: *May 19, 2026**

(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.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **19/321,167**

(22) Filed: **Sep. 5, 2025**

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(63) Continuation of application No. 19/038,702, filed on Jan. 27, 2025, which is a continuation of application (Continued)

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(52) **U.S. Cl.**
CPC ***G06Q 40/02*** (2013.01); ***G06T 7/13*** (2017.01); ***G06V 10/60*** (2022.01); *G06T 2207/20164* (2013.01)

(58) **Field of Classification Search**
CPC . G06Q 40/02; G06T 7/13; G06T 2207/20164; G06V 10/60
See application file for complete search history.

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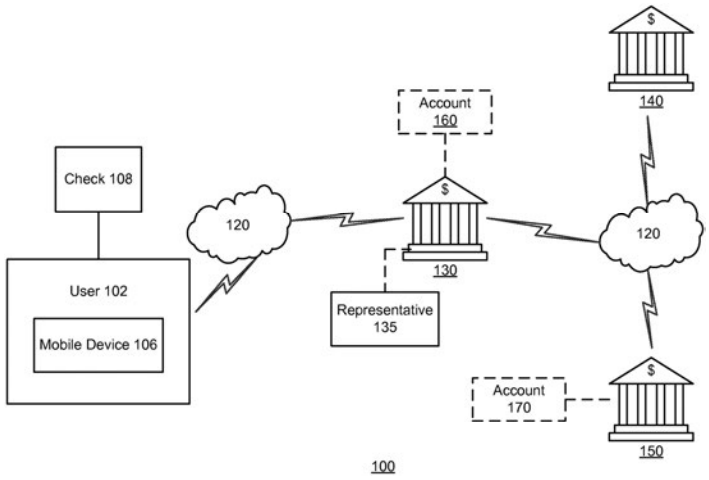
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Primary Examiner — Tien C Nguyen
(74) *Attorney, Agent, or Firm* — Carmichael IP, PLLC

(57) **ABSTRACT**

Embodiments include a system for mobile check deposit enabling auto-capture functionality via video frame processing. The system includes a mobile device with a camera, processor, and memory storing instructions that, when executed by the processor, configure the mobile device to generate a live video of a check in the camera's field of view, monitor the live video with respect to at least one monitoring criterion, and automatically capture a frame of the live video when that frame satisfies the monitoring criterion. The monitoring criterion may be based on light contrast, light brightness, check positioning, check dimensions, character spacing, skewing, warping, corner detection, edge detection, and MICR line detection. The mobile device may be configured to confirm that mobile check deposit can go forward
(Continued)



after optical character recognition (OCR) is performed on the check, a MICR line of the check is recognized, and an amount of the check is validated.

30 Claims, 8 Drawing Sheets

Related U.S. Application Data

No. 18/593,854, filed on Mar. 1, 2024, now Pat. No. 12,211,095, which is a 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.

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G06V 10/60 (2022.01)

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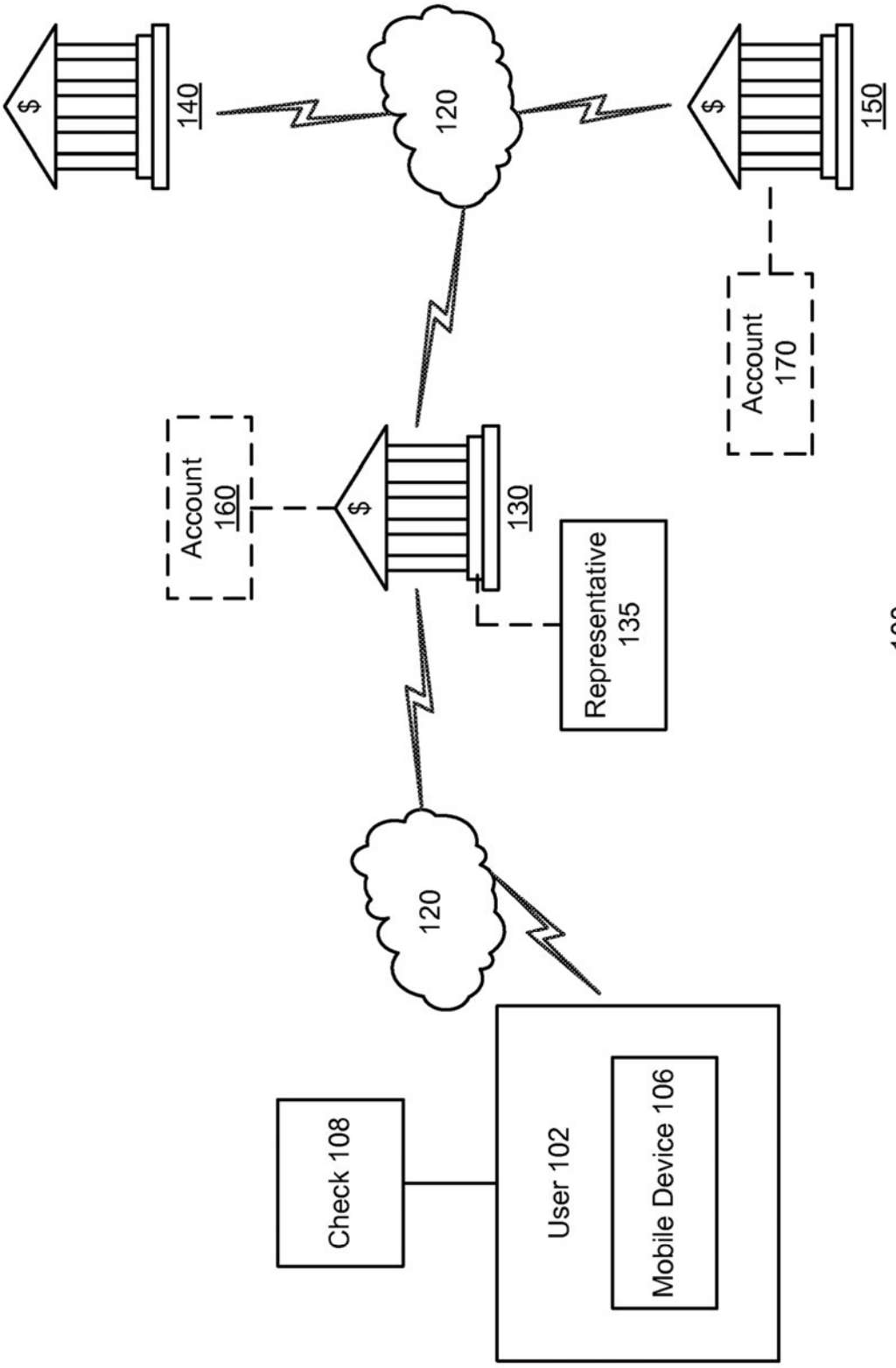


FIG. 1

FIFTH THIRD EX1033
Page 761 of 784

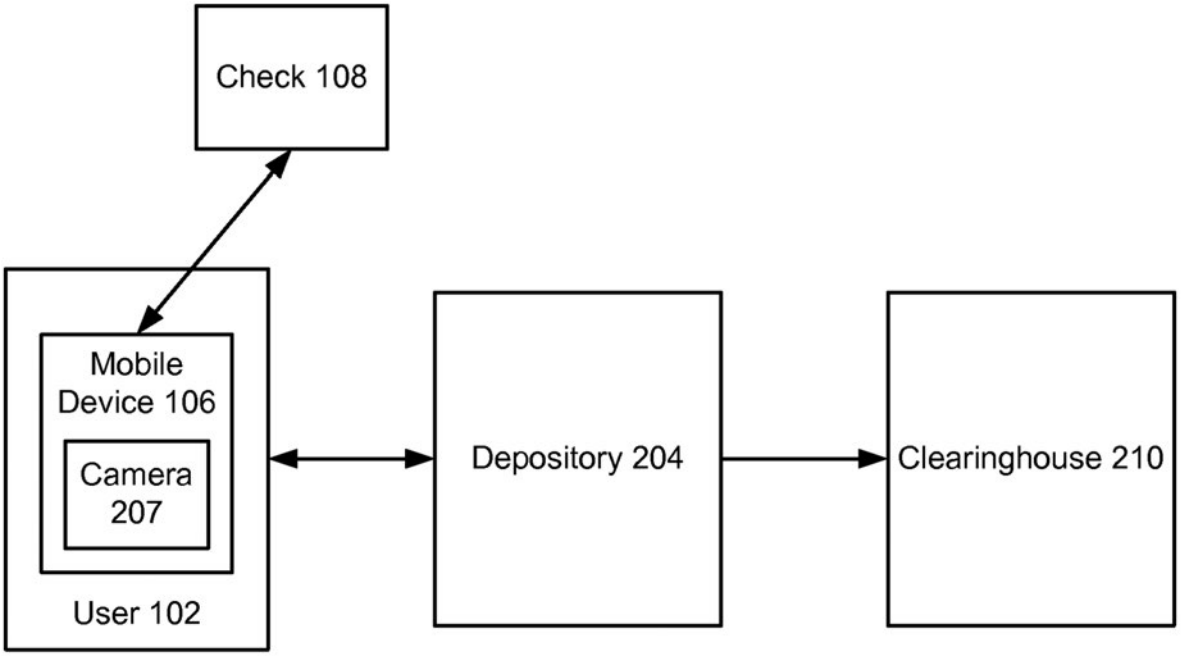

Check 108
Mobile Device 106
Camera 207
User 102
Depository 204
Clearinghouse 210
200

FIG. 2

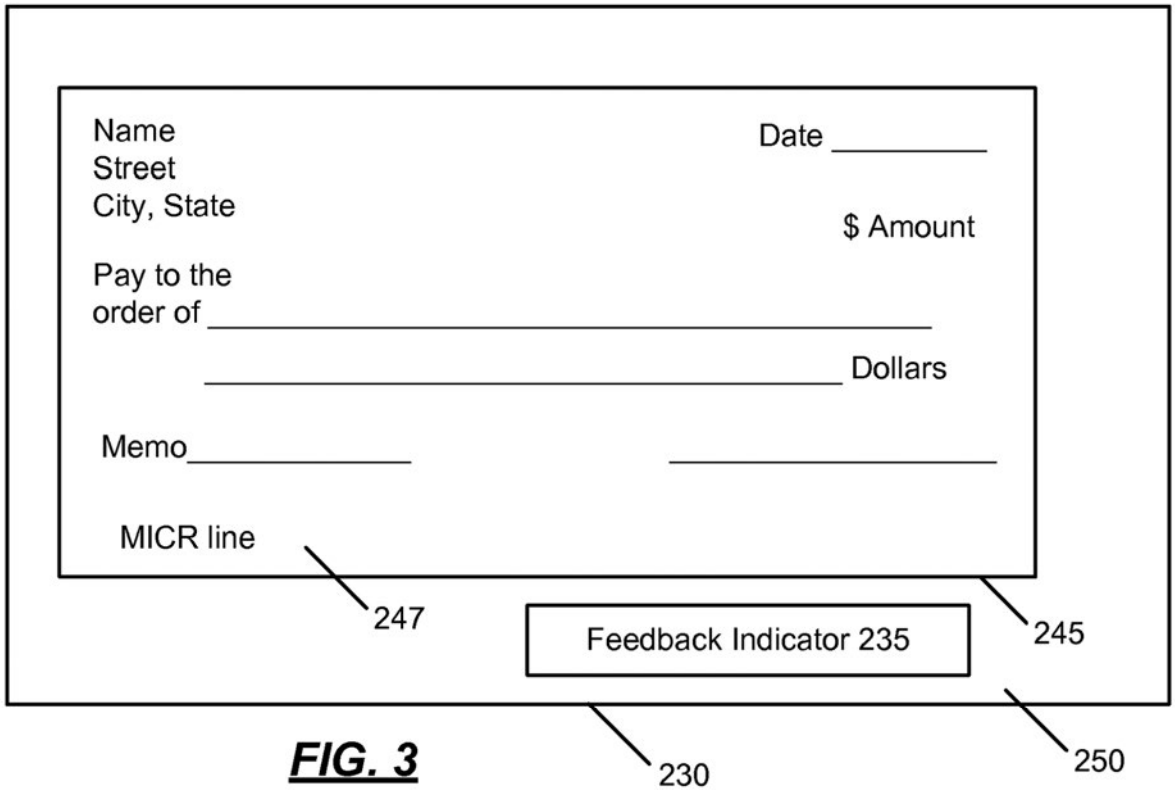

Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
247
245
Feedback Indicator 235
230
250

FIG. 3

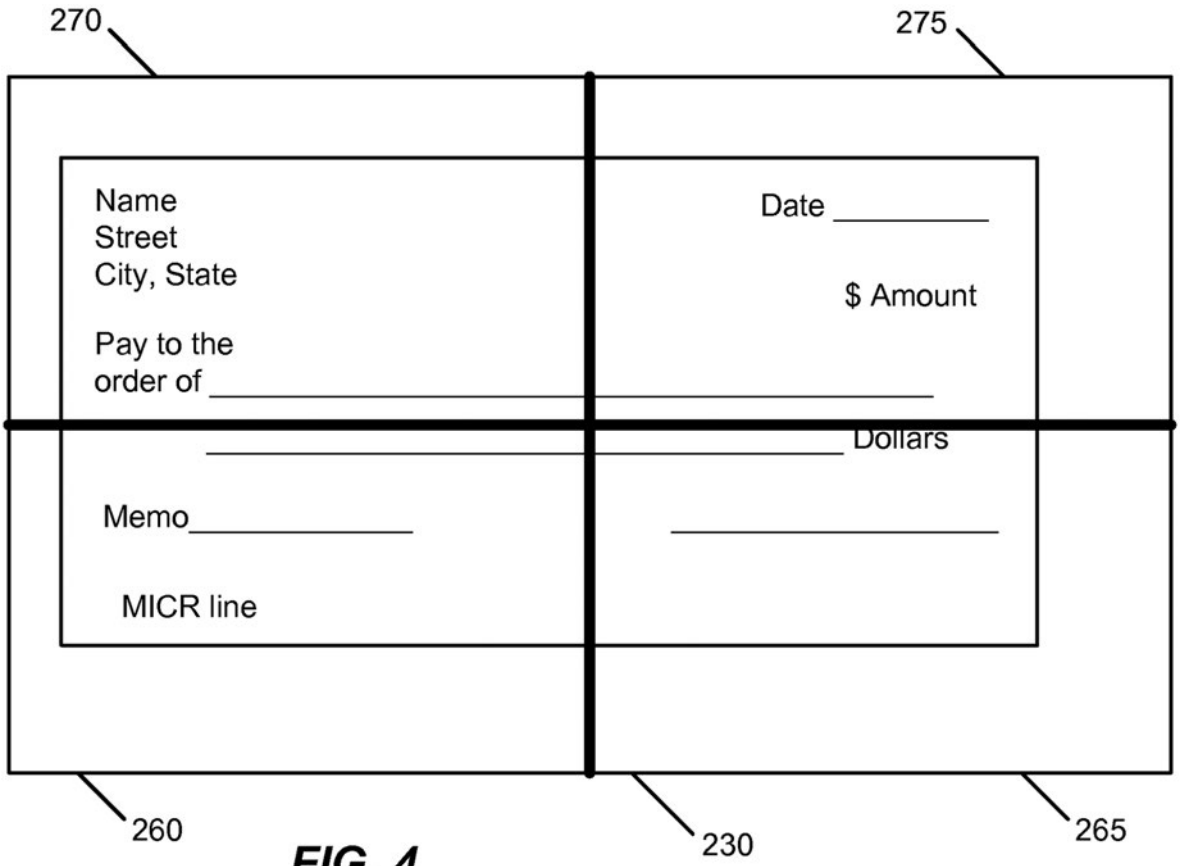
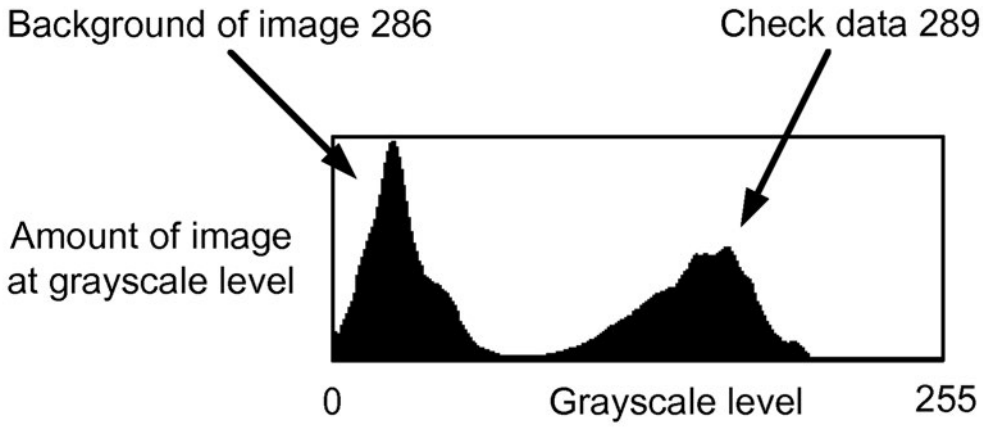
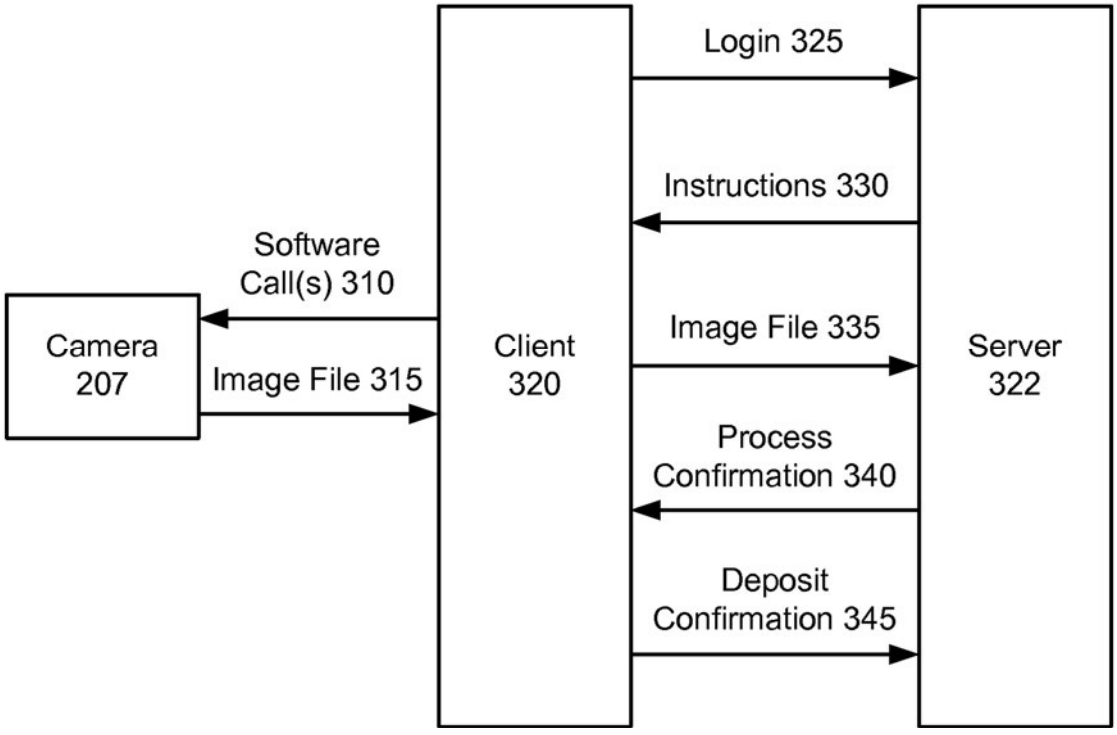

270
275
Name
Street
City, State
Date _____
$ Amount
Pay to the
order of _____
_____ Dollars
Memo_____
_____
MICR line
260
230
265

FIG. 4



280

FIG. 5



300

FIG. 6

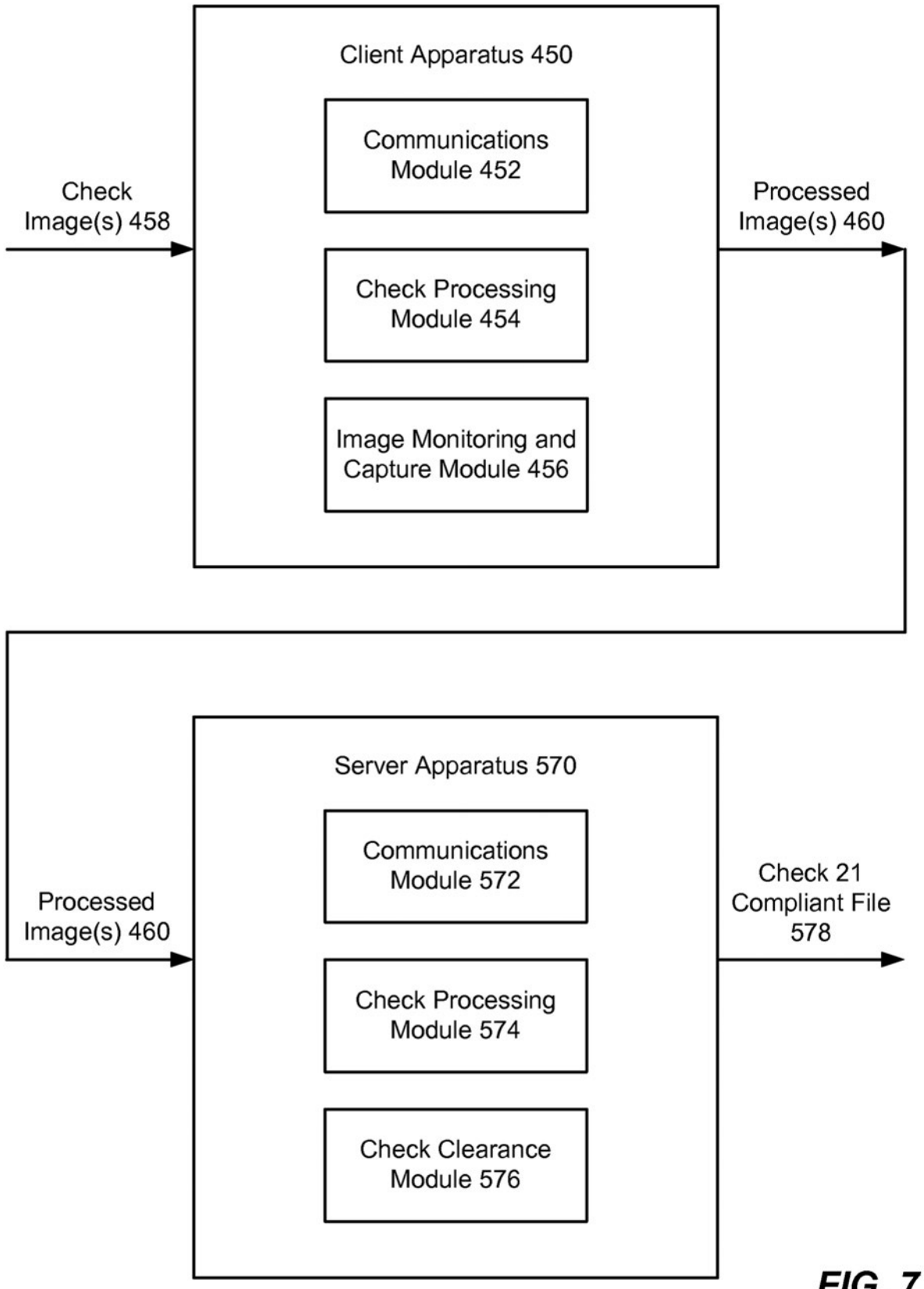

Client Apparatus 450
Communications Module 452
Check Processing Module 454
Image Monitoring and Capture Module 456
Check Image(s) 458
Processed Image(s) 460
Server Apparatus 570
Communications Module 572
Check Processing Module 574
Check Clearance Module 576
Processed Image(s) 460
Check 21 Compliant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

FIG. 7

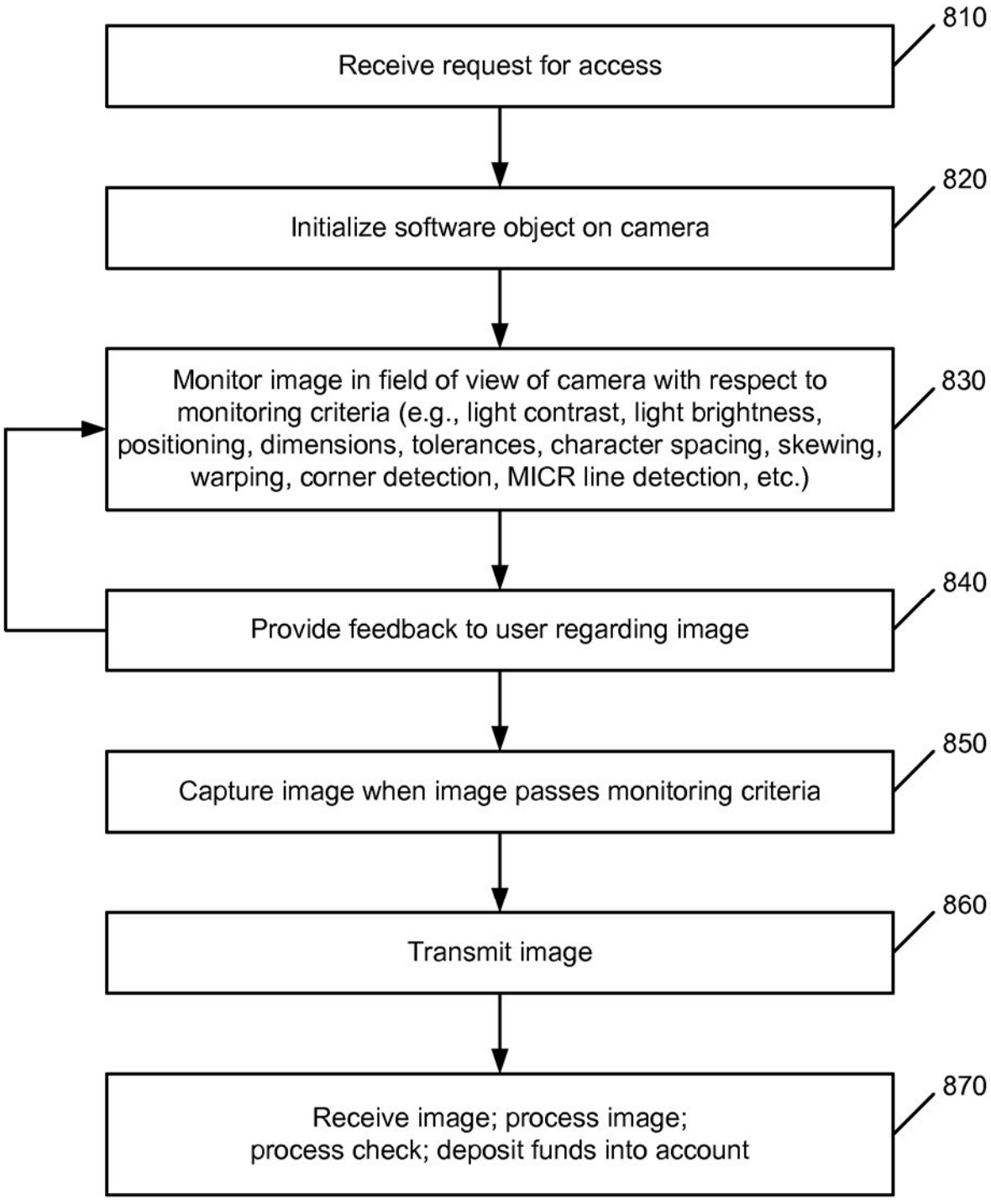

Receive request for access
810
Initialize software object on camera
820
Monitor image in field of view of camera with respect to monitoring criteria (e.g., light contrast, light brightness, positioning, dimensions, tolerances, character spacing, skewing, warping, corner detection, MICR line detection, 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

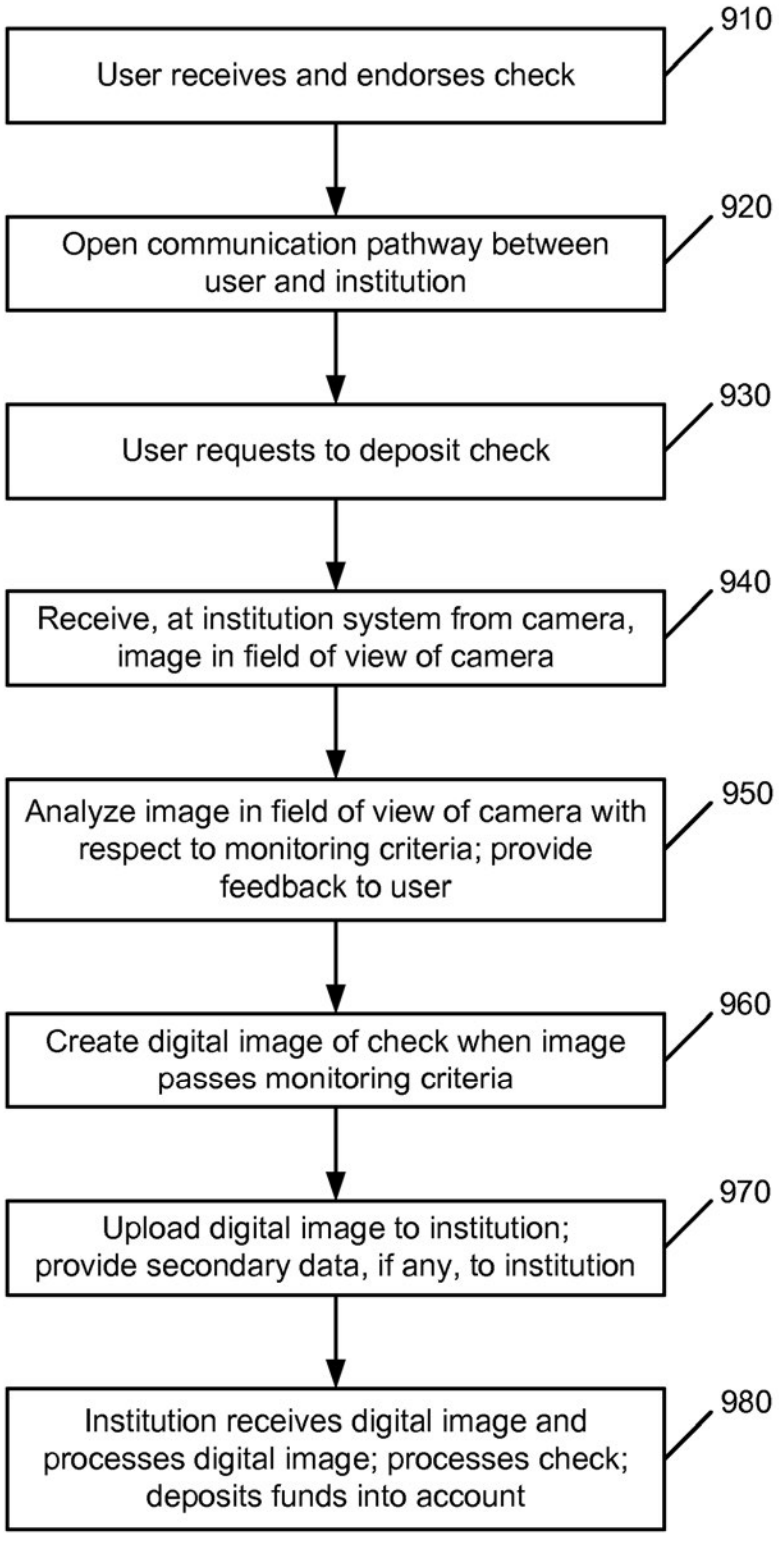

910
User receives and endorses check
920
Open communication pathway between user and institution
930
User requests to deposit check
940
Receive, at institution system from camera, image in field of view of camera
950
Analyze image in field of view of camera with respect to monitoring criteria; provide 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

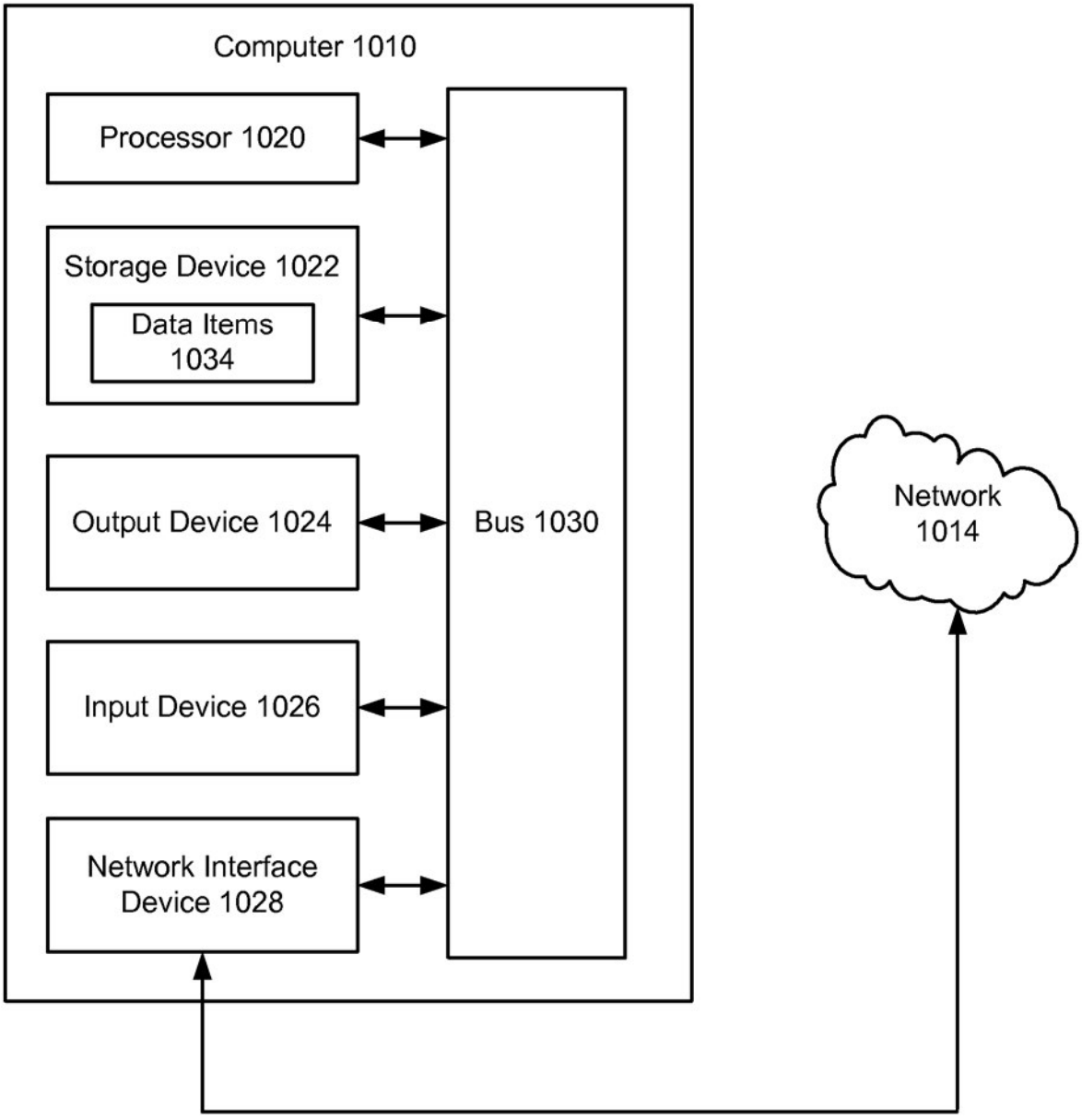

Computer 1010
Processor 1020
Storage Device 1022
Data Items 1034
Output Device 1024
Input Device 1026
Network Interface Device 1028
Bus 1030
Network 1014
1000

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 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.

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 AP is 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 (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.

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 system enabling mobile check deposit auto-capture functionality via video frame processing, the system comprising:

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer for controlling the camera, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

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, the determining including dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion;

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

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;

a server, remote from the user's mobile device, comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the server to perform operations including:

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

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, the user's mobile device receiving an indication of a result of the server's processing after the transmitting the digital image of the check from the user's mobile device; and

a computer comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the computer to update 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 system of claim **1**, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

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

6. The system 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.

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

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

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera, the system being configured to perform operations including:

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;

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, the digital image of the check being the captured video frame or being based on the captured video frame; and

processing the 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; and

a bank computer programmed to update 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 and verifying that the digital image of the check is acceptable for mobile check deposit.

10. The system of claim **9**, wherein the system is configured to perform additional operations including:

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 system of claim **9**, further comprising one or more computers programmed to perform operations comprising the monitoring, the determining, or both the monitoring and the determining.

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

14. The system of claim **9**, wherein the system is configured to perform additional operations including:

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,

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.

15. The system of claim **14**, wherein 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 system of claim **11**, wherein the one or more computers include the bank computer.

17. The system of claim **9**, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

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; and

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

a computer comprising a processor coupled to a memory storing instructions that, when executed by the processor, cause the computer to update 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.

19. The system of claim **18**, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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 system 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 system 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 system of claim **20**, wherein the plurality of monitoring criteria includes criteria based on light brightness, skewing, and warping.

23. The system of claim **18**, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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,

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 system of claim **18**, wherein the digital image is a modified version of the captured video frame.

25. The system of claim **18**, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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

a mobile device of a user, the user's mobile device including a camera, a processor, and a memory coupled to the processor, the memory storing:

a software abstraction layer, the software abstraction layer comprising instructions that, when executed by the processor, control the camera; and

a downloaded app, the downloaded app associated with a bank to control check deposit by controlling the camera through the software abstraction layer, the downloaded app comprising instructions that, when executed by the processor, cause the user's mobile device to perform operations including:

providing instructions to the user for capturing 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; and

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;

the system configured to perform image processing operations on an 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

a computer programmed to update 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 and the verifying that the image of the check is acceptable for mobile check deposit.

27. The system of claim **26**, wherein the downloaded app causes the user's mobile device to perform additional operations including:

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

30. The system of claim **26**, wherein the determining includes dividing the video frame into segments comprising check data and background data and analyzing the segments to determine that the video frame satisfies the at least one monitoring criterion.

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