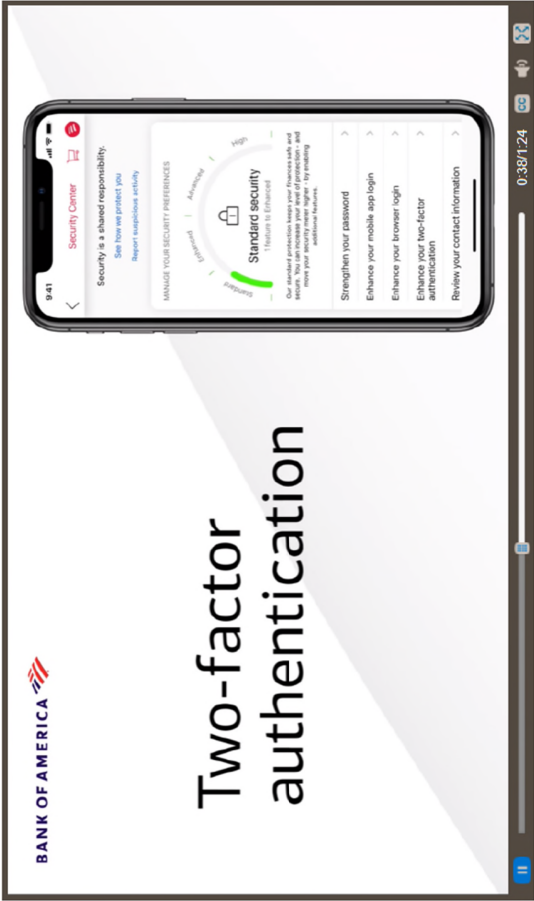


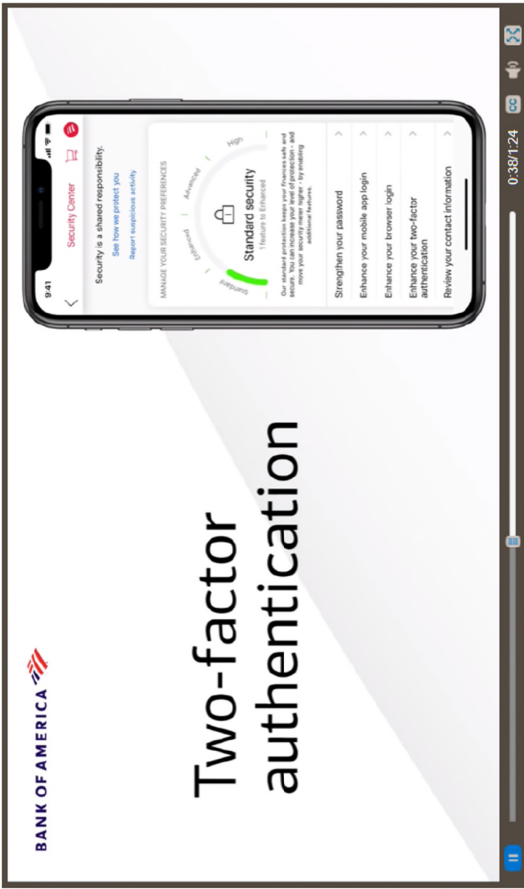
EXHIBIT A-2

Exhibit A: Defendants' Infringement of U.S. Patent No. 6,993,658

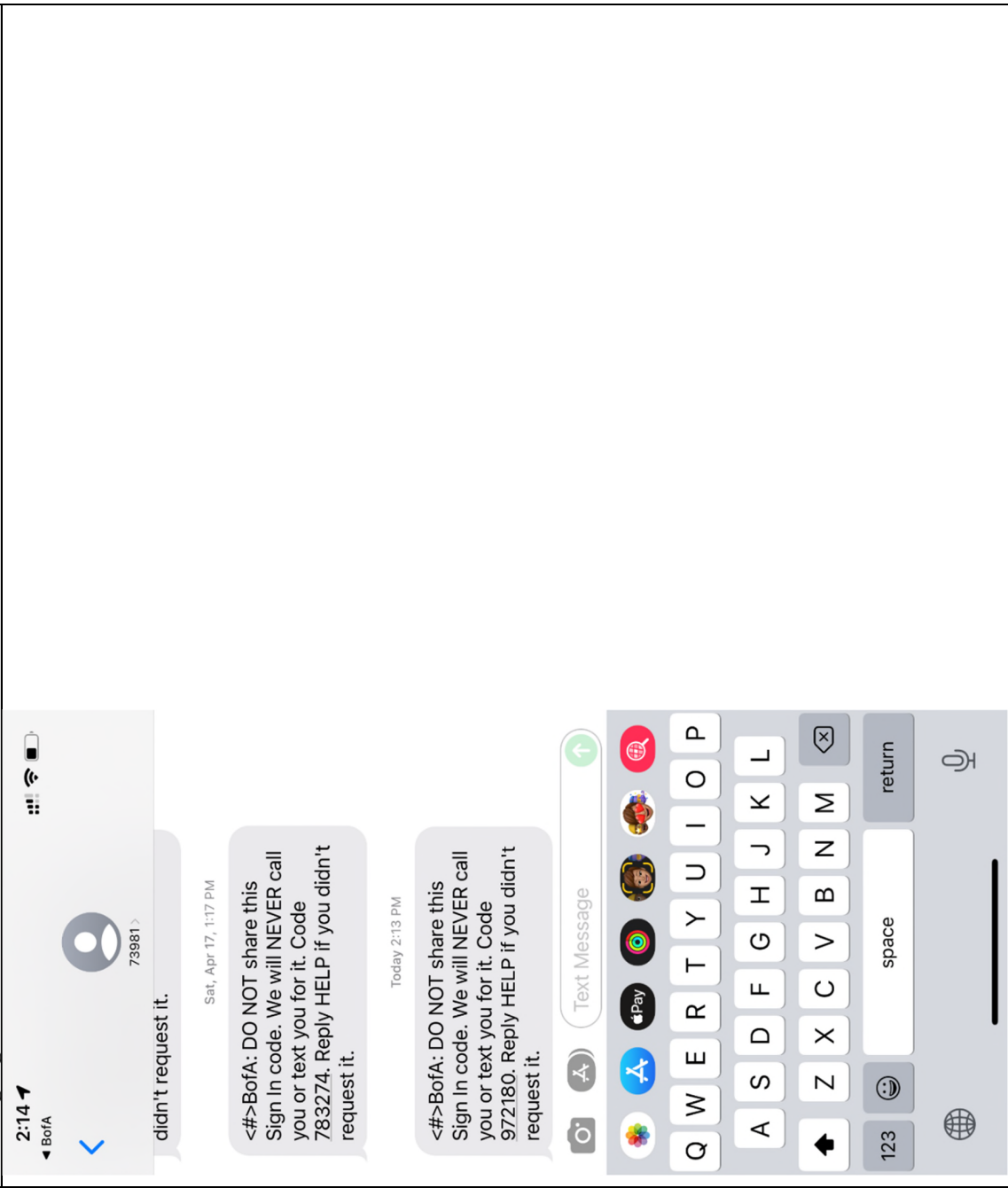
Claim 1	Infringing Product/Structure/Act
1[pre] A method of authenticating a user on a first secure computer network, the user having a user account on said first secure computer network, the method comprising:	The preamble is not limiting. To the extent the preamble is limiting, Bank of America Corporation and Bank of America, N.A., (“Defendants”) perform the claimed method through providing customer access to their online banking system, and the systems and applications that provide two-factor authentication to Defendants’ customers as part of the sign-on procedure for Defendants’ online banking system (the “Accused Instrumentalities”). Defendants’ customers access the Accused Instrumentalities through at least Defendants’ website (https://www.bankofamerica.com/), the Bank of America Mobile Banking application for Apple iOS, and the Bank of America Mobile Banking application for the Android Operating System.

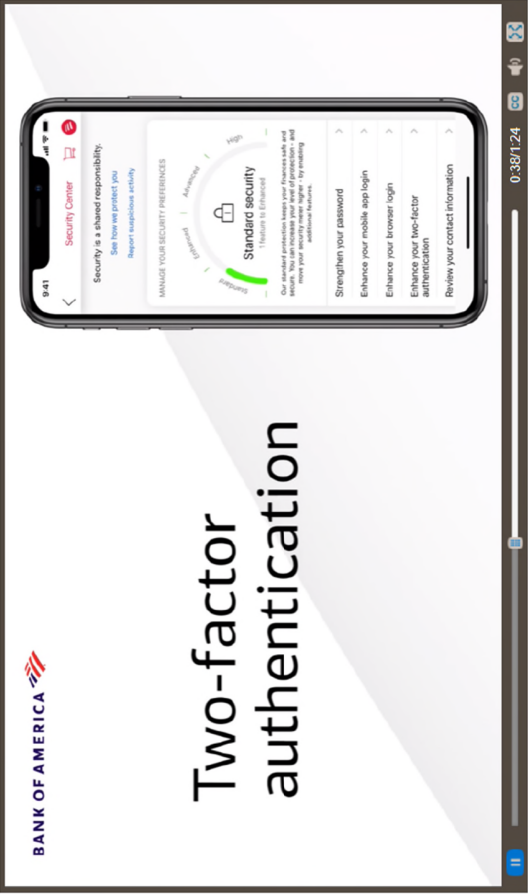
Claim 1	Infringing Product/Structure/Act
	2:13     User ID Password ☐ Save User ID ☐ Set up Face ID LOG IN Forgot ID/Password My Balance™ Enroll Locations Contact us Investing in securities involves risks, and there is always the potential of losing money when you invest in securities. You should review any planned financial transactions that may have tax or legal implications with your personal tax or legal advisor. Securities products are provided by Merrill Lynch, Pierce, Fenner & Smith Incorporated (also referred to as "MLPF&S" or "Merrill"), a registered broker-dealer, registered investment advisor, Member SIPC, and a wholly-owned subsidiary of Bank of America Corporation ("BoFA Corp."). MLPF&S makes available certain investment products sponsored, managed, distributed or provided by companies that are affiliates of BoFA Corp. Bank of America Private Bank operates through Bank of America, N.A., and other subsidiaries of BoFA Corp. Trust and fiduciary services are provided by Bank of America Private Bank, a division of Bank of America, N.A., Member FDIC, and a wholly-owned subsidiary of BoFA Corp. Insurance Products are offered through Merrill Lynch Life Agency Inc. (MLLA) and/or Banc of America Insurance Services, Inc., both of which are licensed insurance agencies

Claim 1	Infringing Product/Structure/Act
	The screenshot shows the Bank of America Security Center app interface. At the top, it says 'BANK OF AMERICA' with the logo. Below that, 'Security Center' is displayed. A message states: 'Security is a shared responsibility. See how we protect you. Report suspicious activity.' Underneath is a section titled 'MANAGE YOUR SECURITY PREFERENCES' with a circular progress indicator showing 'Standard security' at 100% and 'Future is Enhanced' at 0%. Below this, there are several options to enhance security: 'Strengthen your password', 'Enhance your mobile app login', 'Enhance your browser login', 'Enhance your two-factor authentication', and 'Review your contact information'. Each option has a right-pointing arrow. At the bottom of the screen, there is a 'View transcript' link and a blue arrow icon. Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center. See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.
1[a] associating the user with a personal communication device possessed by the user, said personal communication device in	Defendants use the Accused Instrumentalities to associate a user with a user's personal communication device (e.g., a cell phone, mobile phone, or smartphone), which communicates via a cell phone network. The cell phone network is different from the first secure computer network associated with the Accused Instrumentalities.

Claim 1	Infringing Product/Structure/Act
communication over a second network, wherein said second network is a cell phone network different from the first secure computer network;	For example, as shown below, the personal communication device is associated with the user such that it can receive codes via the Short Message Service (SMS):  Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identify with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

Claim 1	Infringing Product/Structure/Act
	2:13   Request Authorization Code To verify your identity, we need to send an authorization code to your phone xxx-xxx-1436 HOW WOULD YOU LIKE TO RECEIVE IT? Text message ☒ Phone call ☐ The code expires 10 minutes after you request it. Having trouble receiving your code by phone? You are consenting to be contacted at the phone number selected for the purpose of receiving an authorization code. If you selected text message, Wireless and text message fees may apply from your carrier. Supported carriers include: AT&T, Sprint, T-Mobile, US Cellular, Verizon, or any other branded wireless operator.  Secure Area Privacy Security Advertising Practices Legal Info & Disclosures Equal Housing Lender  Bank of America, N.A. Member FDIC. © 2021 Bank of America Corporation. CANCEL SEND CODE

Claim 1	Infringing Product/Structure/Act
	

Claim 1	Infringing Product/Structure/Act
1[b] receiving a request from the user for a token via the personal communication device, over the second network;	Defendants use the Accused Instrumentalities to receive a request from the user for a token via the personal communication device (e.g., a cell phone, mobile phone, or smartphone) for a token (e.g., “one-time authorization code,” “authorization code,” or “sign in code”), over the second network via, for example, the Short Message Service (SMS). The request is generated in response to the user accessing Defendants’ online banking system through, for example, Defendants’ website (https://www.bankofamerica.com/), the Bank of America Mobile Banking application for Apple iOS, and the Bank of America Mobile Banking application for the Android Operating System. 

Claim 1	Infringing Product/Structure/Act
	Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identify with a one-time authorization code, which is sent by text ¹ or email each time you log in. ² And, with more security settings, new optional security alerts ³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center <i>See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.</i>

Claim 1	Infringing Product/Structure/Act
	2:13   Request Authorization Code To verify your identity, we need to send an authorization code to your phone xxx-xxx-1436 HOW WOULD YOU LIKE TO RECEIVE IT? Text message ☒ Phone call ☐ The code expires 10 minutes after you request it. Having trouble receiving your code by phone? You are consenting to be contacted at the phone number selected for the purpose of receiving an authorization code. If you selected text message, Wireless and text message fees may apply from your carrier. Supported carriers include: AT&T, Sprint, T-Mobile, US Cellular, Verizon, or any other branded wireless operator.  Secure Area Privacy Security Advertising Practices Legal Info & Disclosures Equal Housing Lender  Bank of America, N.A. Member FDIC. © 2021 Bank of America Corporation. CANCEL SEND CODE

Claim 1	Infringing Product/Structure/Act
1[c] generating a new password for said first secure computer network based at least upon the token and a passcode, wherein the token is not known to the user and wherein the passcode is known to the user;	Defendants use the Accused Instrumentalities to generate a new password for the first secure computer network, which is associated with the Accused Instrumentalities. The password is a based upon at least the token (e.g., “authorization code” or “sign in code”) and the passcode (e.g., the password that the user uses for login or other information that is known to the user, such as the username or information that references or is an alias to the username). The password is based at least upon both the token and passcode because both are necessary to allow access to the Accused Instrumentalities. The token is not known to the user because, for example, it is generated by the Accused Instrumentalities when a user accesses Defendants’ online banking system. The token is sent to the user via the user’s personal communication device because the token is not known to the user. Moreover, the token expires, and is not usable thereafter. The passcode is known to the user because it is known to the user when they access Defendants’ online banking system.

Claim 1	Infringing Product/Structure/Act
	2:13     User ID Password ☐ Save User ID ☐ Set up Face ID LOG IN Forgot ID/Password My Balance™ Enroll Locations Contact us Investing in securities involves risks, and there is always the potential of losing money when you invest in securities. You should review any planned financial transactions that may have tax or legal implications with your personal tax or legal advisor. Securities products are provided by Merrill Lynch, Pierce, Fenner & Smith Incorporated (also referred to as "MLPF&S" or "Merrill"), a registered broker-dealer, registered investment advisor, Member SIPC, and a wholly-owned subsidiary of Bank of America Corporation ("BoFA Corp."). MLPF&S makes available certain investment products sponsored, managed, distributed or provided by companies that are affiliates of BoFA Corp. Bank of America Private Bank operates through Bank of America, N.A., and other subsidiaries of BoFA Corp. Trust and fiduciary services are provided by Bank of America Private Bank, a division of Bank of America, N.A., Member FDIC, and a wholly-owned subsidiary of BoFA Corp. Insurance Products are offered through Merrill Lynch Life Agency Inc. (MLLA) and/or Banc of America Insurance Services, Inc., both of which are licensed insurance agencies

Infringing Product/Structure/Act

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Card Type	Annual Fee	Bonus Offer
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Unlimited Cash Rewards	No annual fee.	\$200 online bonus offer Unlimited 1.5% cash back on all purchases >
Travel Rewards	No annual fee.	25,000 online bonus points offer Unlimited 1.5 points for every \$1 spent on all purchases >
BankAmericard®	No annual fee.	0% Intro APR offer Intro APR offer for 21 billing cycles >

User ID
 Password

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Find your closest financial center or ATM
 Schedule an Appointment

Open a checking account

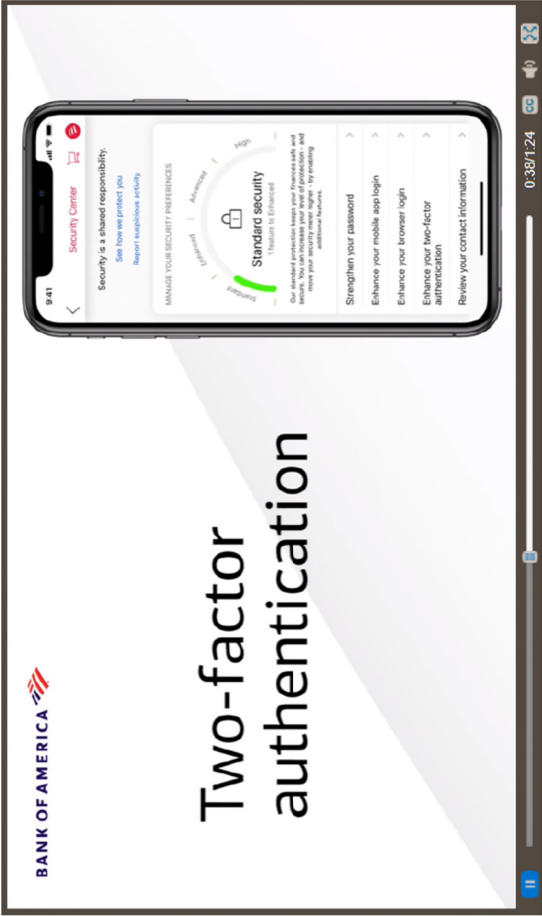
Consider the benefits of opening a Bank of America Advantage Banking Account.

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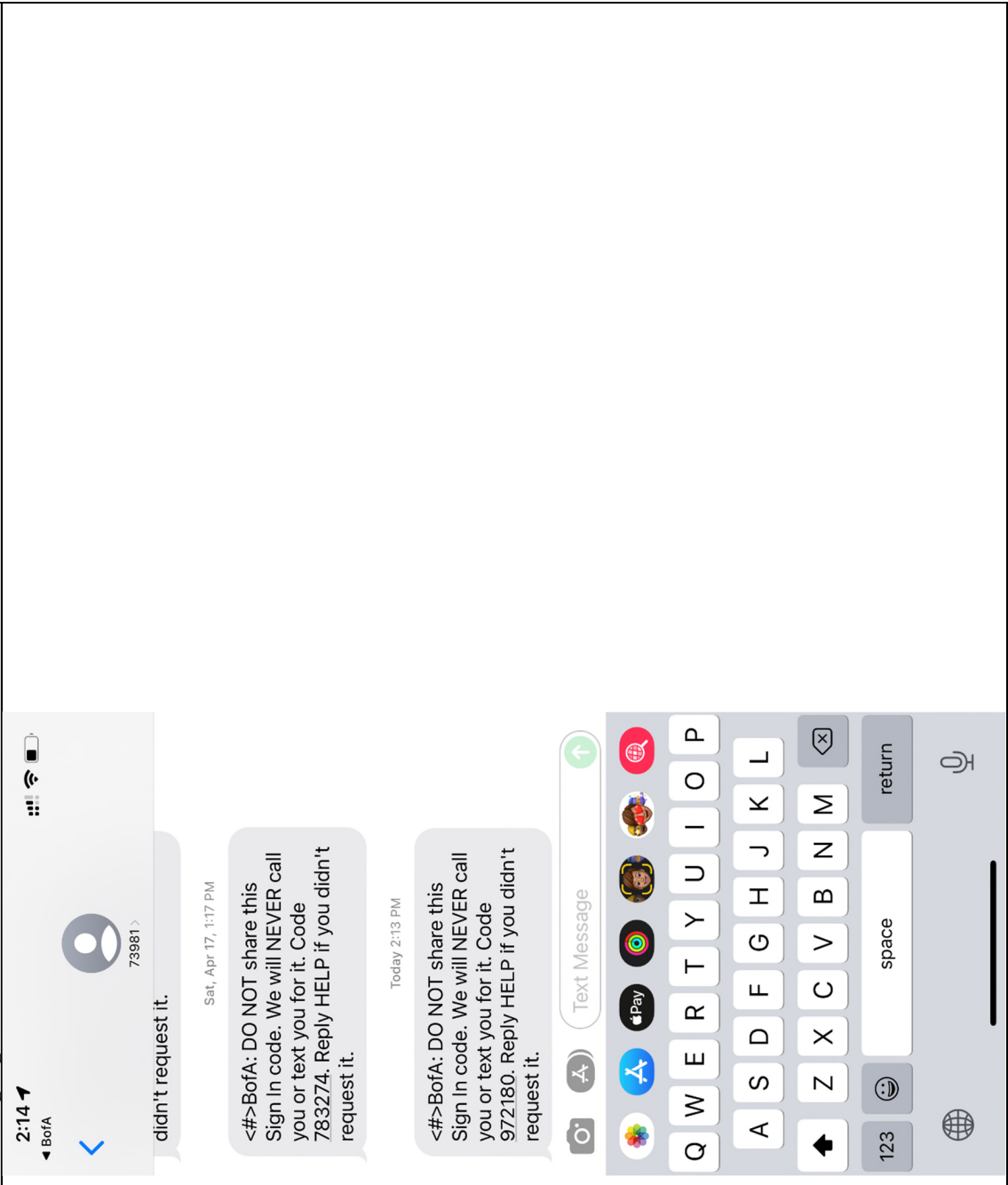
A first day through Malik Robinson's lens

Discover his journey to professional photography on set of a Bank of America production.

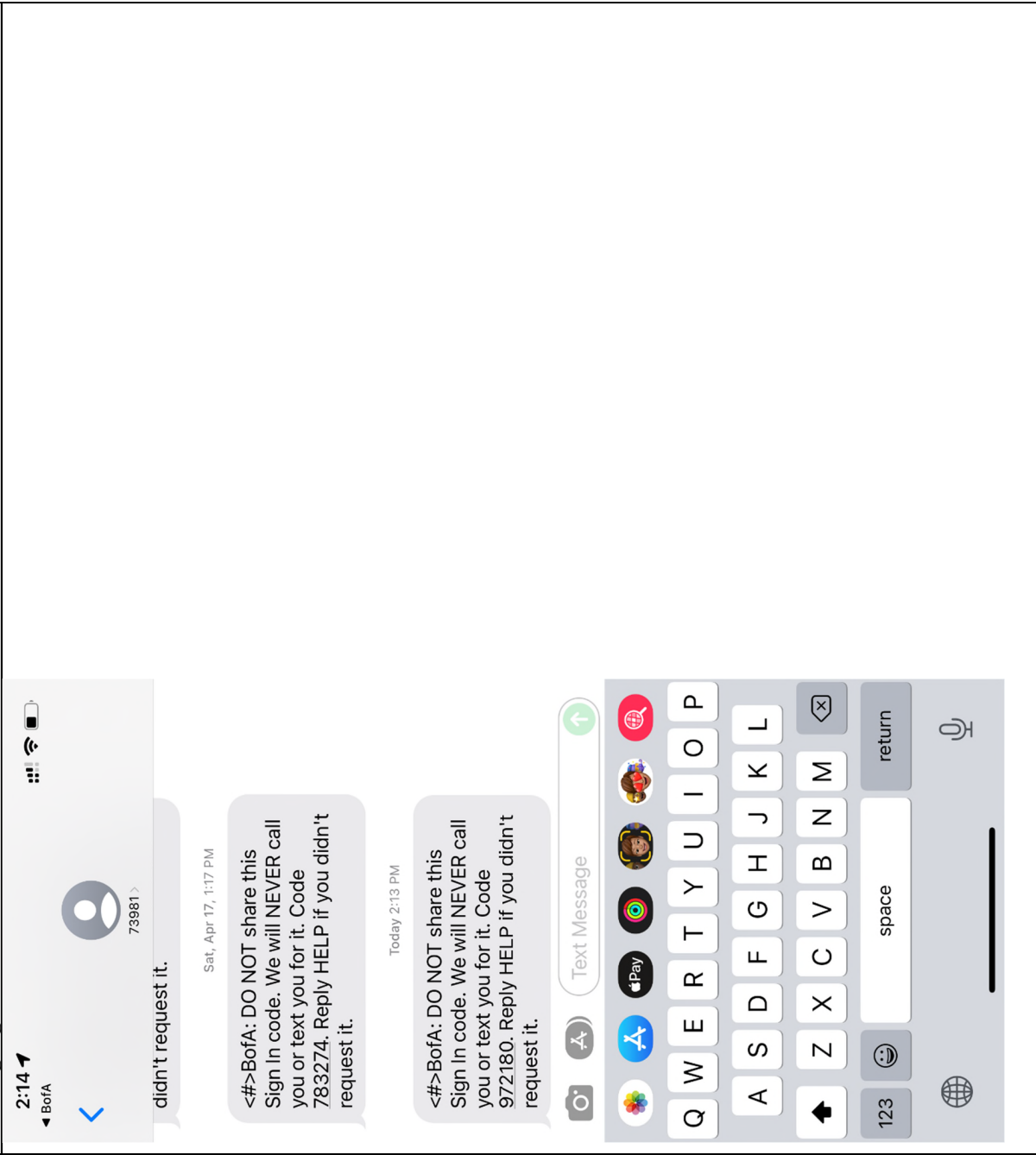
See e.g., <https://www.bankofamerica.com/>.

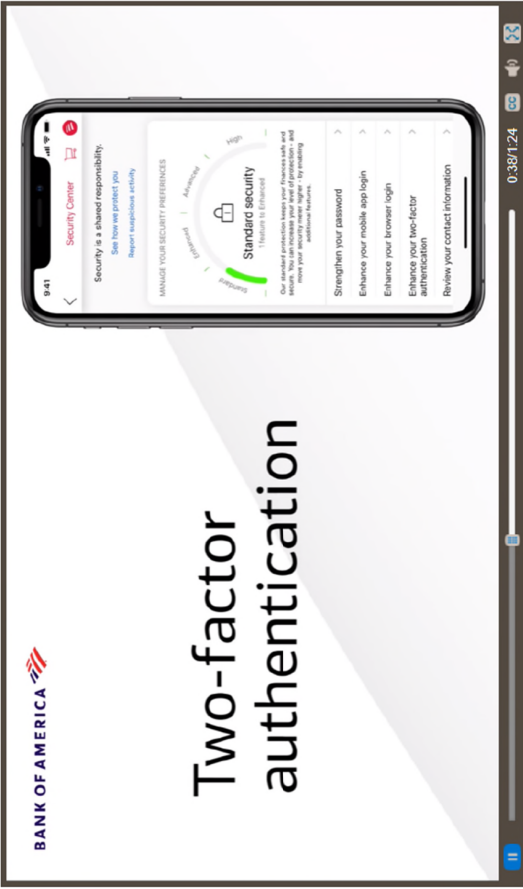
Claim 1	Infringing Product/Structure/Act
	The screenshot shows the Bank of America mobile app's Security Center. At the top, it says 'Security is a shared responsibility. See how we protect you' and 'Report suspicious activity'. Below this is a circular progress indicator for 'Standard security' (80% complete) and 'Two-factor authentication' (100% complete). Under 'MANAGE YOUR SECURITY PREFERENCES', there are links for 'Log in with', 'Authenticate', and 'Sign'. A list of security features includes 'Strengthen your password', 'Enhance your mobile app login', 'Enhance your browser login', 'Enhance your two-factor authentication', and 'Review your contact information'. A 'View transcript' link is at the bottom right of the screenshot. Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

Claim 1	Infringing Product/Structure/Act
	2:13    Request Authorization Code To verify your identity, we need to send an authorization code to your phone xxx-xxx-1436 HOW WOULD YOU LIKE TO RECEIVE IT? Text message ☒ Phone call ☐ The code expires 10 minutes after you request it. Having trouble receiving your code by phone? You are consenting to be contacted at the phone number selected for the purpose of receiving an authorization code. If you selected text message, Wireless and text message fees may apply from your carrier. Supported carriers include: AT&T, Sprint, T-Mobile, US Cellular, Verizon, or any other branded wireless operator.  Secure Area Privacy Security Advertising Practices Legal Info & Disclosures Equal Housing Lender  Bank of America, N.A. Member FDIC. © 2021 Bank of America Corporation. CANCEL SEND CODE

Claim 1	Infringing Product/Structure/Act
	

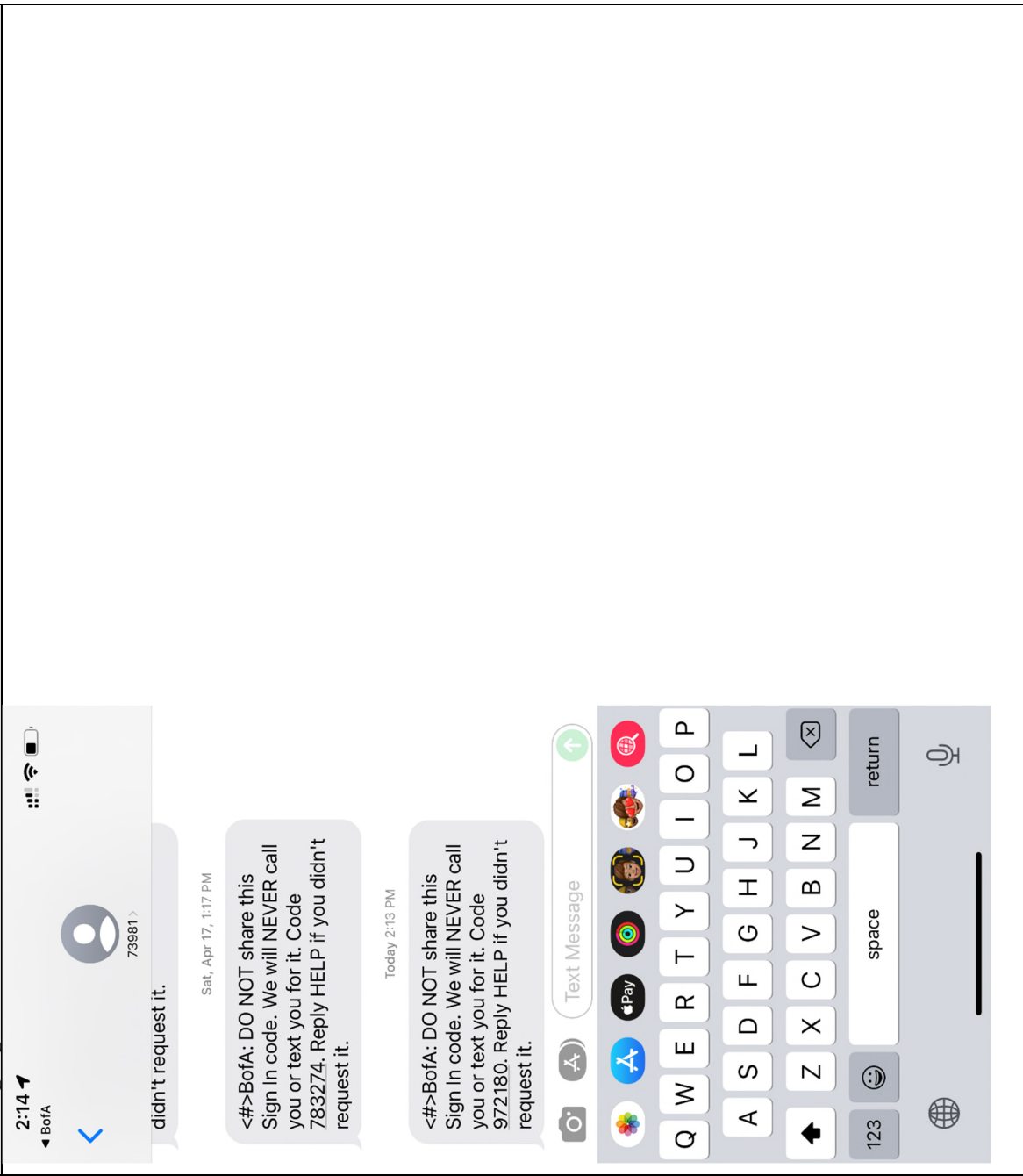
Claim 1	Infringing Product/Structure/Act
1[d] setting a password associated with the user to be the new password;	Defendants use the Accused Instrumentalities to set a password associated with the user to be the new password. For example, access to the online banking system is determined based on the new password, which is based upon at least the token (e.g., “authorization code” or “sign in code”) and the passcode (e.g., the password that the user uses for login or other information that is known to the user, such as the username or information that references or is an alias to the username). Previous passwords, not based on the current token cannot be used to access the online banking system.

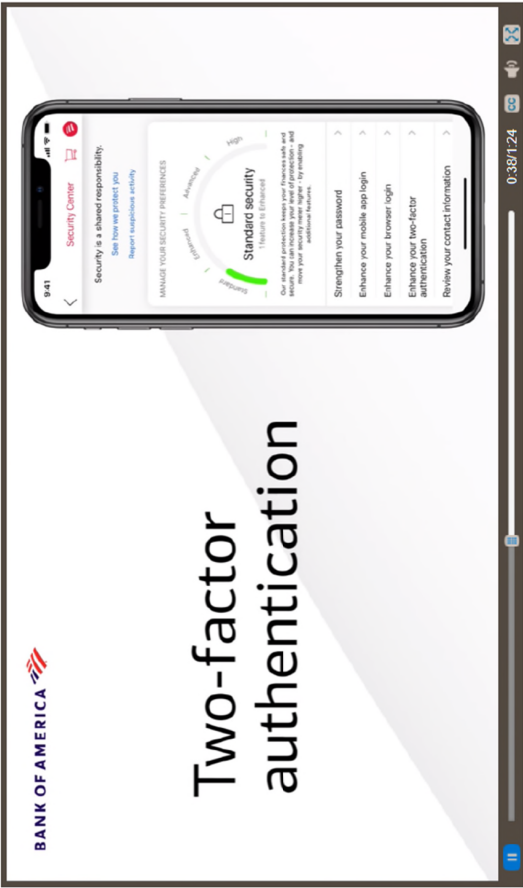
Claim 1	Infringing Product/Structure/Act
	

Claim 1	Infringing Product/Structure/Act
1[e] activating access the user account on the first secure computer network;	Defendants use the Accused Instrumentalities to activate access to the user account on the first secure computer network by, for example, allowing access after successful input of the user's credentials, including the passcode and token.
1[f] transmitting the token to the personal communication device;	Defendants use the Accused Instrumentalities to transmit the token (e.g., "authorization code" or "sign in code") to the personal communication device via, for example, the Short Message Service (SMS). 

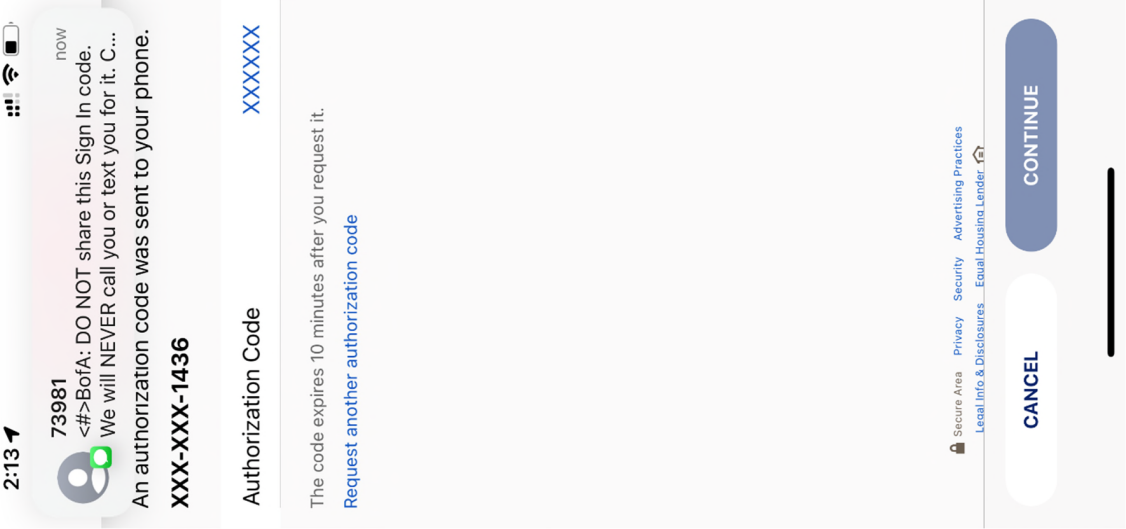
Claim 1	Infringing Product/Structure/Act
	Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identify with a one-time authorization code, which is sent by text ¹ or email each time you log in. ² And, with more security settings, new optional security alerts ³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

Claim 1	Infringing Product/Structure/Act
	2:13 Request Authorization Code To verify your identity, we need to send an authorization code to your phone xxx-xxx-1436 HOW WOULD YOU LIKE TO RECEIVE IT? Text message Phone call The code expires 10 minutes after you request it. Having trouble receiving your code by phone? You are consenting to be contacted at the phone number selected for the purpose of receiving an authorization code. If you selected text message, Wireless and text message fees may apply from your carrier. Supported carriers include: AT&T, Sprint, T-Mobile, US Cellular, Verizon, or any other branded wireless operator. Secure Area Privacy Security Advertising Practices Legal Info & Disclosures Equal Housing Lender Bank of America, N.A. Member FDIC. © 2021 Bank of America Corporation. CANCEL SEND CODE

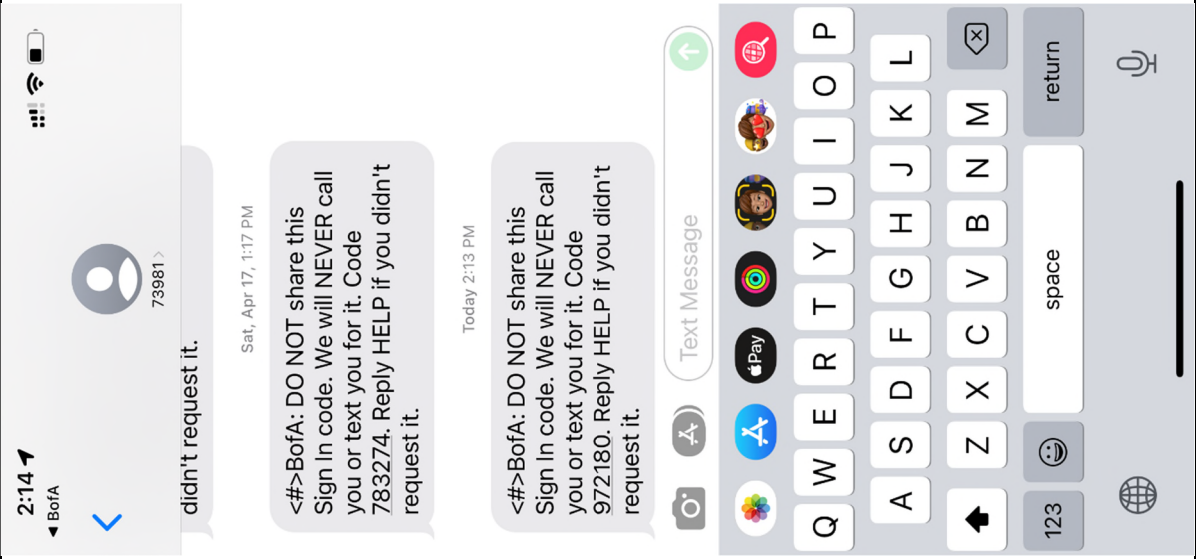
Claim 1	Infringing Product/Structure/Act
	

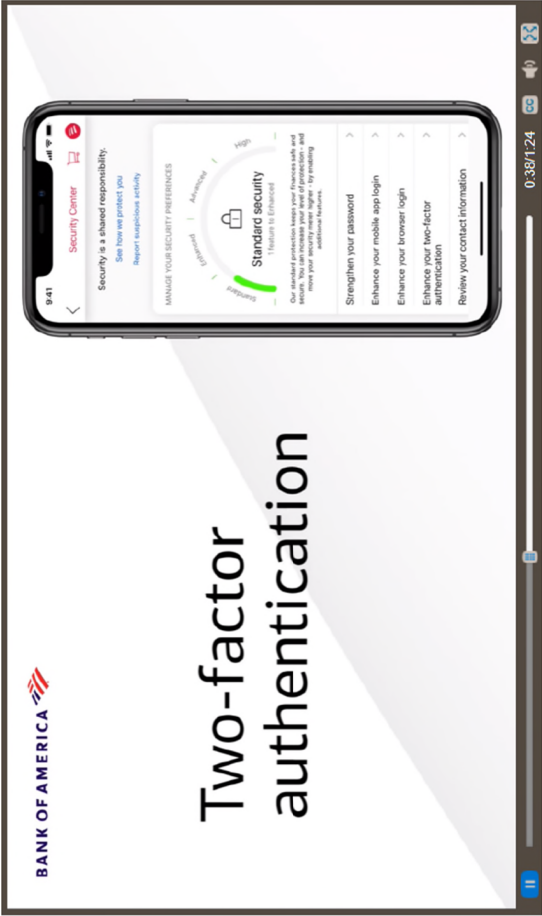
Claim 1	Infringing Product/Structure/Act
1[g] receiving the password from the user via the first secure computer network; and	Defendants use the Accused Instrumentalities to receive the password from the user via the first secure computer network, which is associated with the Accused Instrumentalities. For example, Defendants' online banking system receives the password, or other information that is known to the user, such as the username or information that references or is an alias to the username, to authenticate the user and enable access. To the extent that the username is not received at the same time as the token, this limitation is met under the doctrine of equivalents because the session ID is received at the same time as the token, session ID corresponds to the username, which is known to the user, and the session ID is used for the same purpose of authenticating the user. 

Claim 1	Infringing Product/Structure/Act
	Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identify with a one-time authorization code, which is sent by text ¹ or email each time you log in. ² And, with more security settings, new optional security alerts ³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

Claim 1	Infringing Product/Structure/Act
	

Claim 1	Infringing Product/Structure/Act
1[h] deactivating access to the user account on the first secure computer network within a predetermined amount of time after said activating, such that said user account is not accessible through any password, via said first secure computer network.	Defendants use the Accused Instrumentalities to deactivate access to the user account for the online banking system within a predetermined amount of time after said activating, such that said user account is not accessible through any password, via said first secure computer network. Alternatively, the Accused Instrumentalities disable access to the user account for the online banking system when that account has not been accessed within a predetermined amount of time.



Claim 1	Infringing Product/Structure/Act
	 The screenshot shows the Bank of America Security Center app. At the top, it says 'Security is a shared responsibility. See how we protect you. Report suspicious activity.' Below this is a circular progress indicator for 'Standard security' (80% complete) and 'Two-factor authentication' (100% complete). Under 'MANAGE YOUR SECURITY PREFERENCES', there are links for 'Log in with', 'Authentication', and 'Log out'. A list of security features is shown: 'Strengthen your password', 'Enhance your mobile app login', 'Enhance your browser login', 'Enhance your two-factor authentication', and 'Review your contact information'. A 'View transcript' link is at the bottom left of the screenshot area. Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

Claim 5	Infringing Product/Structure/Act
5[pre] A user authentication system comprising:	The preamble is not limiting. To the extent the preamble is limiting, the Accused Instrumentalities are a user authentication system. Defendants’ customers access the Accused Instrumentalities through at least Defendants’ website (https://www.bankofamerica.com/), the Bank of America Mobile Banking application for Apple iOS, and the Bank of America Mobile Banking application for the Android Operating System.

Claim 5	Infringing Product/Structure/Act
	2:13    User ID Password ☐ Save User ID ☐ Set up Face ID LOG IN Forgot ID/Password My Balance™ Enroll Locations Contact us Investing in securities involves risks, and there is always the potential of losing money when you invest in securities. You should review any planned financial transactions that may have tax or legal implications with your personal tax or legal advisor. Securities products are provided by Merrill Lynch, Pierce, Fenner & Smith Incorporated (also referred to as "MLPF&S" or "Merrill"), a registered broker-dealer, registered investment advisor, Member SIPC, and a wholly-owned subsidiary of Bank of America Corporation ("BoFA Corp."). MLPF&S makes available certain investment products sponsored, managed, distributed or provided by companies that are affiliates of BoFA Corp. Bank of America Private Bank operates through Bank of America, N.A., and other subsidiaries of BoFA Corp. Trust and fiduciary services are provided by Bank of America Private Bank, a division of Bank of America, N.A., Member FDIC, and a wholly-owned subsidiary of BoFA Corp. Insurance Products are offered through Merrill Lynch Life Agency Inc. (MLLA) and/or Banc of America Insurance Services, Inc., both of which are licensed insurance agencies

Personal	Small Business	Wealth Management	Businesses & Institutions	Security	About Us	En español	Contact Us	Help
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Personal	Small Business	Wealth Management	Businesses & Institutions	Security	About Us	Contact Us	Help

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category of your choice

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online bonus offer
Unlimited 1.5% cash back
on all purchases >

No annual fee.

25,000

online bonus points offer

Unlimited 1.5 points for every \$1 spent on all purchases >

No annual fee.
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Intro APR offer
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A first day through Malik Robinson's lens

Discover his journey to professional photography on set of a Bank of America production.

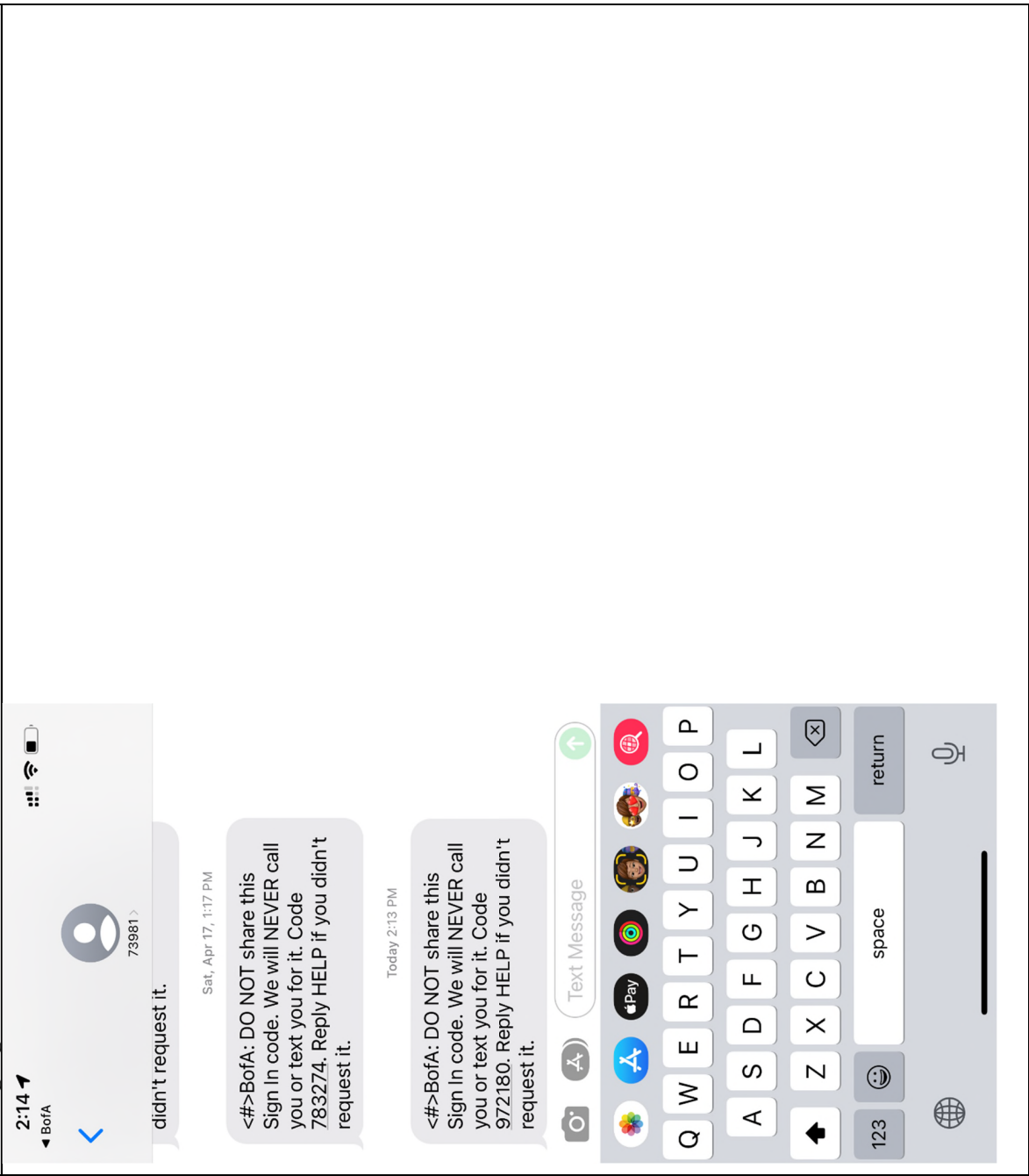
See, e.g., <https://www.bancofamerica.com/>.

Claim 5	Infringing Product/Structure/Act Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text ¹ or email each time you log in. ² And, with more security settings, new optional security alerts ³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center. See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.
5[a] a computer processor;	The Accused Instrumentalities comprise at least a computer processor.

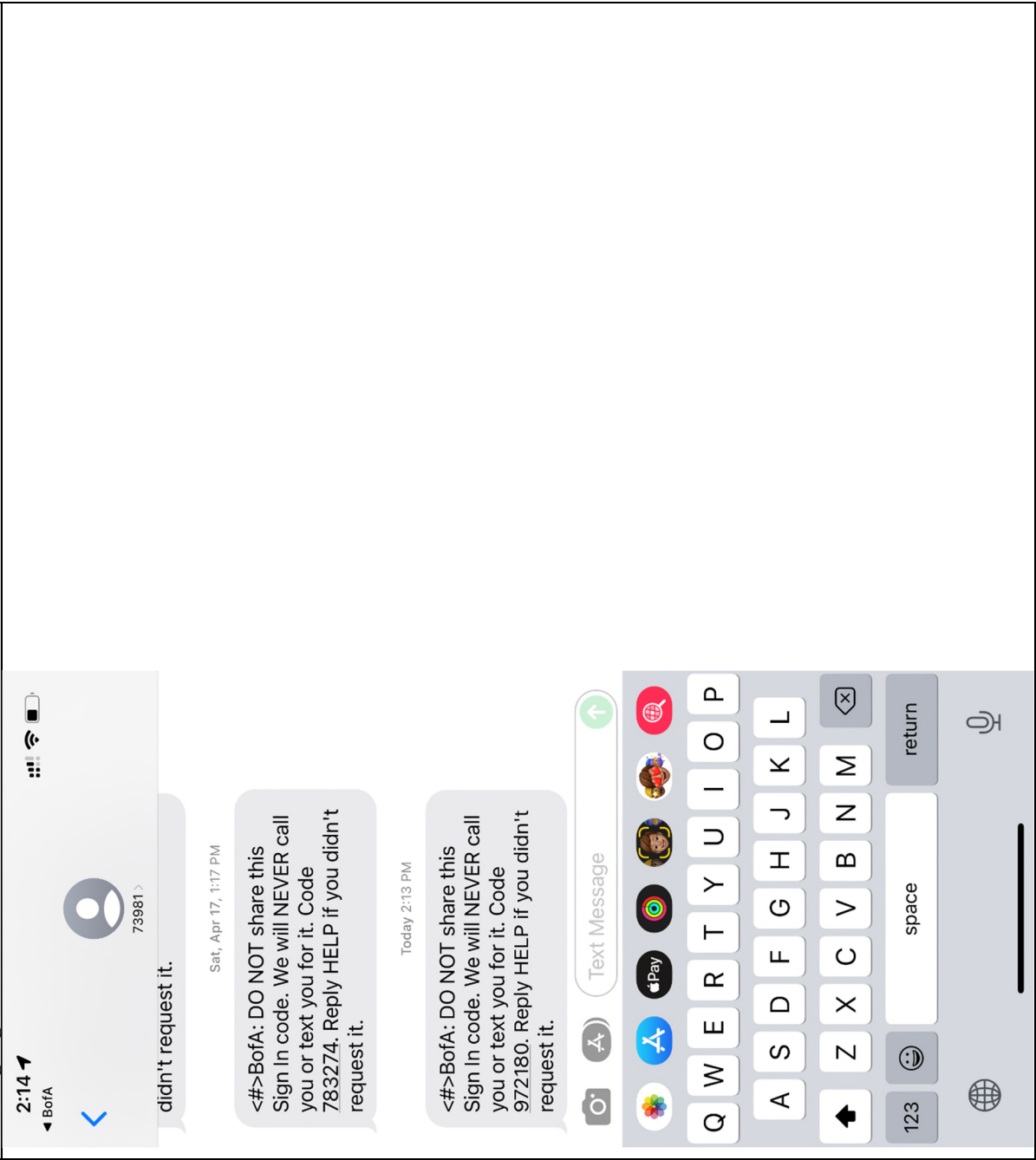
Claim 5	Infringing Product/Structure/Act
5[b] a user database configured to associate a user with a personal communication device possessed by the user, said personal communication device configured to communicate over a cell phone network with the user authentication system;	The Accused Instrumentalities comprise a user database configured to associate a user with a personal communication device (e.g., a cell phone, mobile phone, or smartphone) possessed by the user, which communicates over a cell phone network with the Accused Instrumentalities. For example, as shown below, the personal communication device is associated with the user such that it can receive codes via the Short Message Service (SMS): Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote⁴ (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center

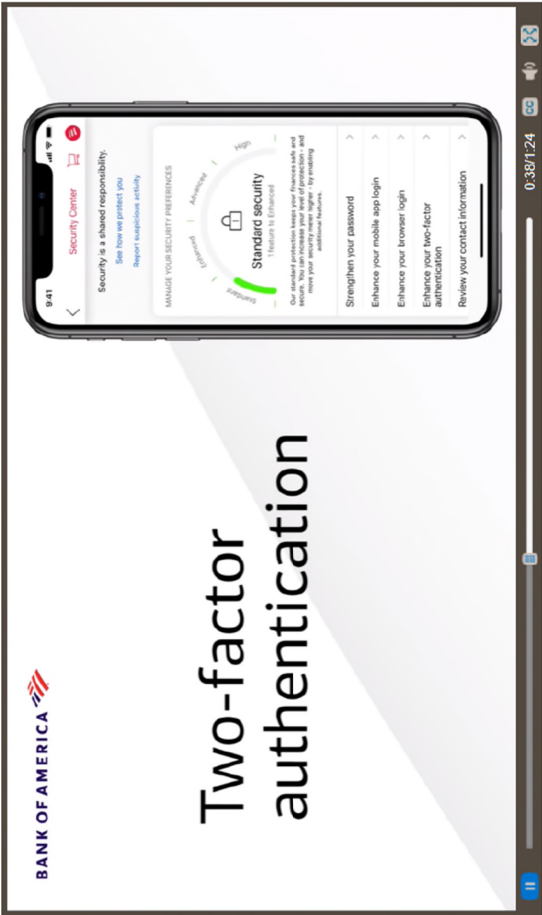
Claim 5	Infringing Product/Structure/Act
	See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/ .

Claim 5	Infringing Product/Structure/Act
	2:13   Request Authorization Code To verify your identity, we need to send an authorization code to your phone xxx-xxx-1436 HOW WOULD YOU LIKE TO RECEIVE IT? Text message ☒ Phone call ☐ The code expires 10 minutes after you request it. Having trouble receiving your code by phone? You are consenting to be contacted at the phone number selected for the purpose of receiving an authorization code. If you selected text message, Wireless and text message fees may apply from your carrier. Supported carriers include: AT&T, Sprint, T-Mobile, US Cellular, Verizon, or any other branded wireless operator.  Secure Area Privacy Security Advertising Practices Legal Info & Disclosures Equal Housing Lender  Bank of America, N.A. Member FDIC. © 2021 Bank of America Corporation. CANCEL SEND CODE

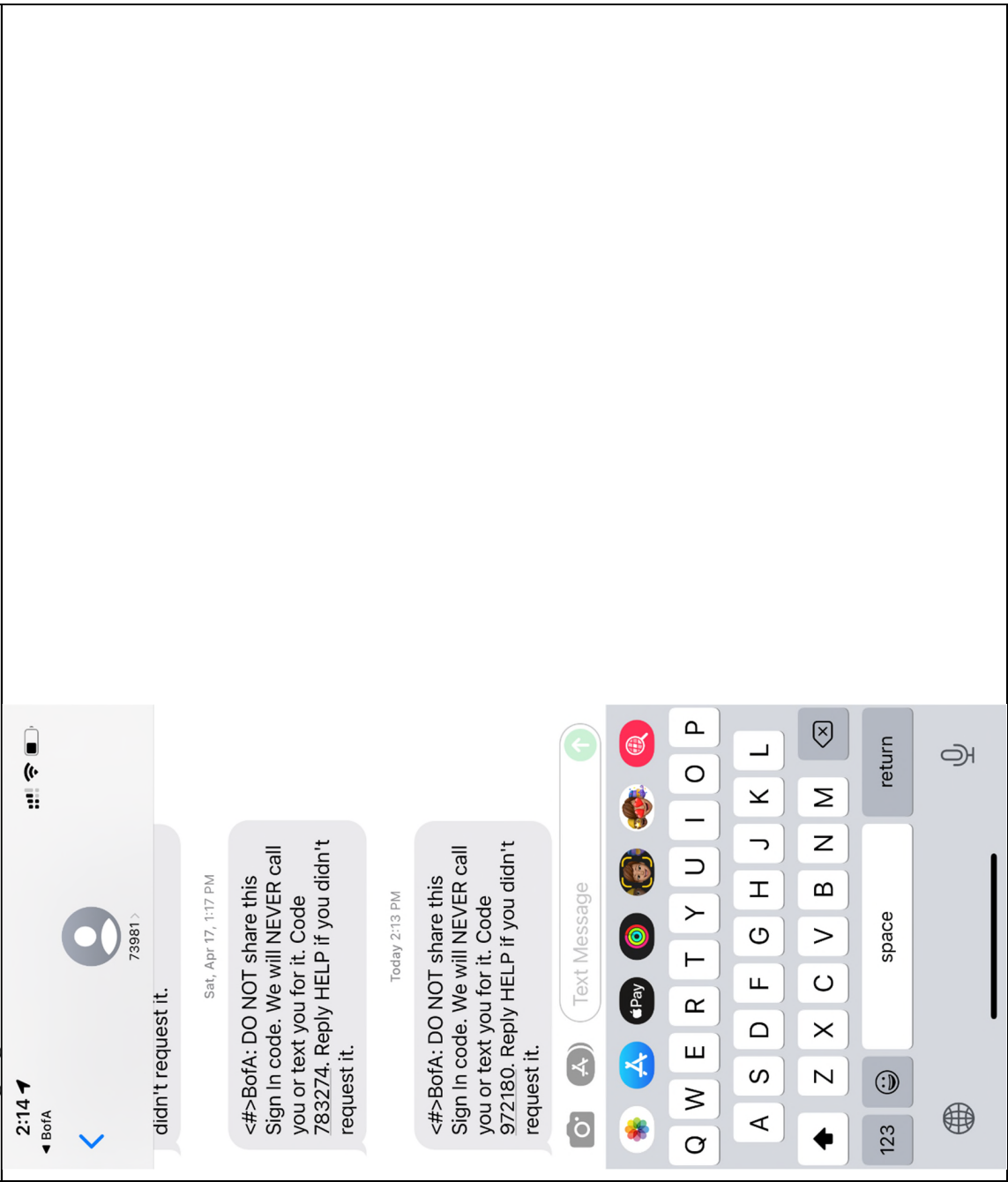
Claim 5	Infringing Product/Structure/Act
	

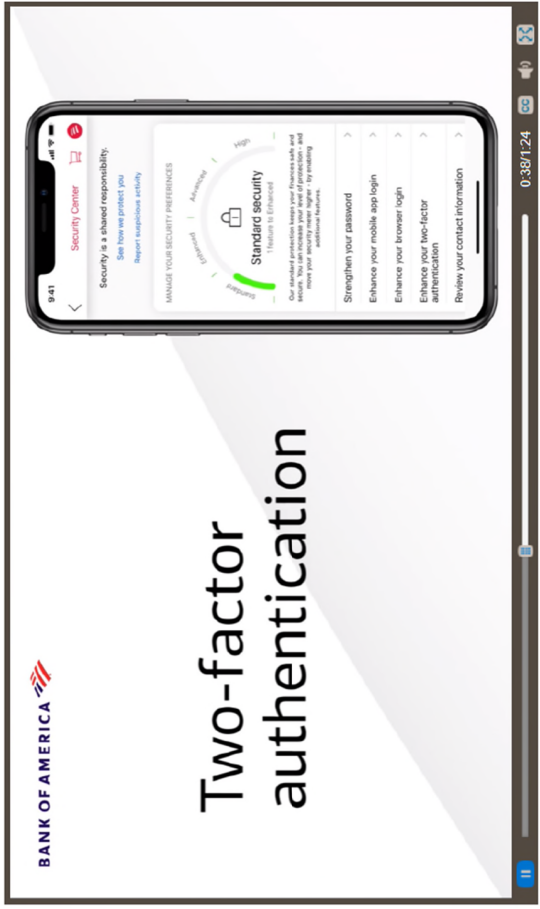
Claim 5	Infringing Product/Structure/Act
5[c] a control module executed on the computer processor configured to create a new password based at least upon a token and a passcode, wherein the token is not known to the user and wherein the passcode is known to the user, the control module further configured to set a password associated with the user to be the new password;	The Accused Instrumentalities comprise a control module executed on the computer processor configured to create a new password. The password is a based upon at least the token (e.g., “authorization code” or “sign in code”) and the passcode (e.g., the password that the user uses for login or other information that is known to the user, such as the username or information that references or is an alias to the username). The password is based at least upon both the token and passcode because both are necessary to allow access to the Accused Instrumentalities. The token is not known to the user because, for example, it is generated by the Accused Instrumentalities when a user accesses Defendants’ online banking system. The token is sent to the user via the user’s personal communication device because the token is not known to the user. Moreover, the token expires, and is not usable thereafter. The passcode is known to the user because it is known to the user when they access Defendants’ online banking system. The control module is configured to set a password associated with the user to be the new password. For example, access to the online banking system is determined based on the new password, which is based upon at least the token (e.g., “authorization code” or “sign in code”) and the passcode (e.g., the password that the user uses for login or other information that is known to the user, such as the username or information that references or is an alias to the username). Previous passwords, not based on the current token cannot be used to access the online banking system.

Claim 5	Infringing Product/Structure/Act
	

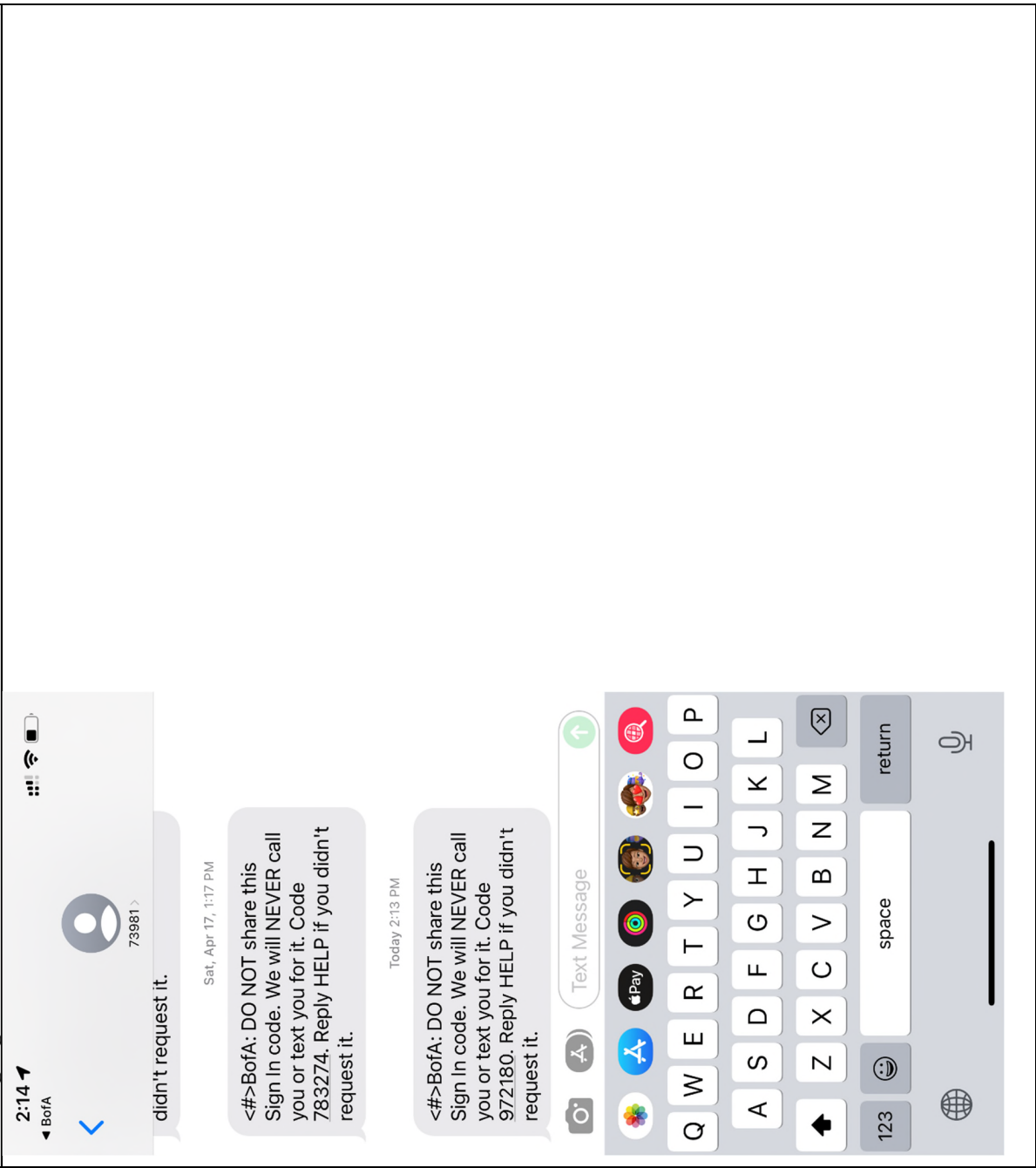
Claim 5	Infringing Product/Structure/Act
	 Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

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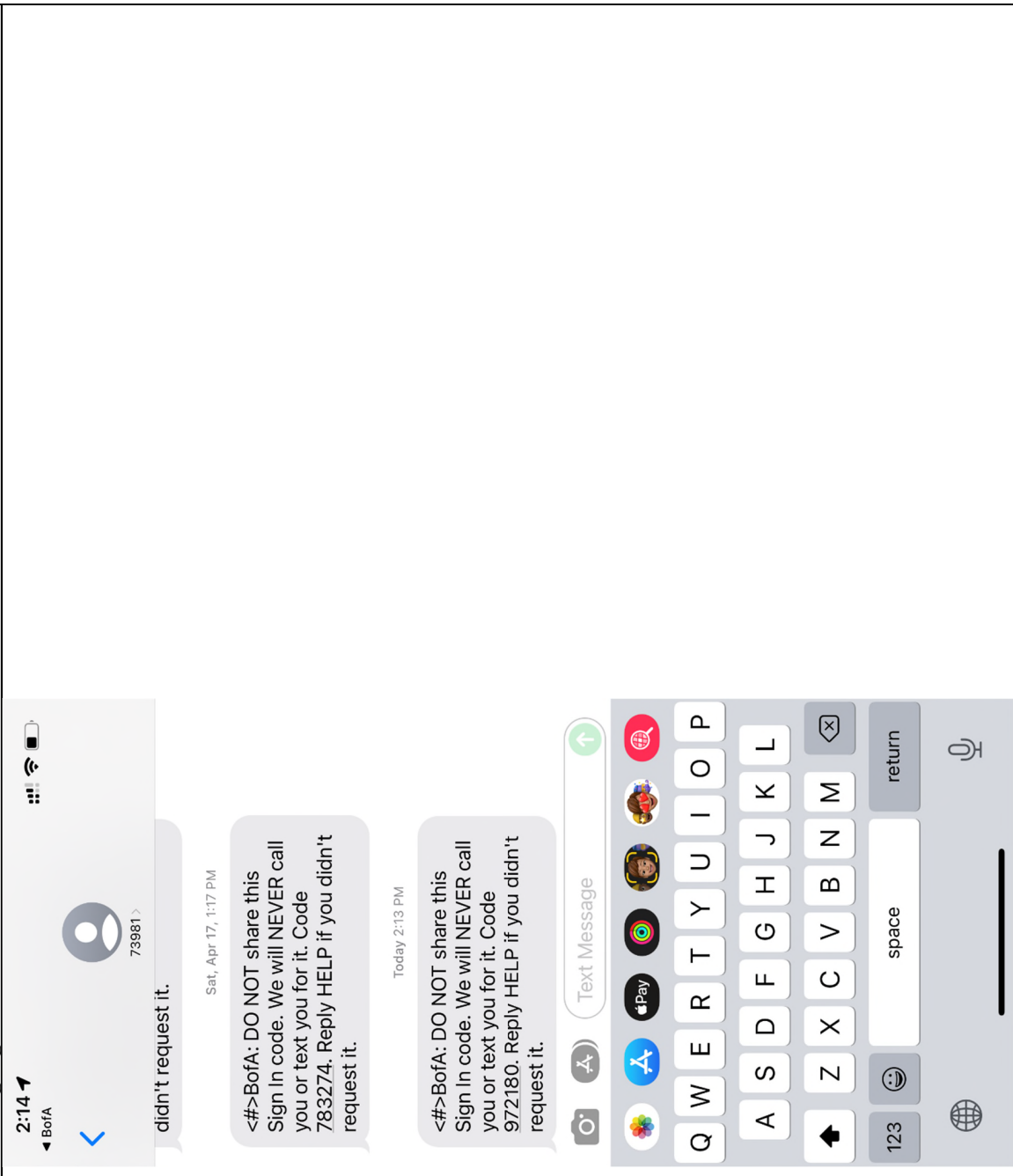
Claim 5	Infringing Product/Structure/Act
	

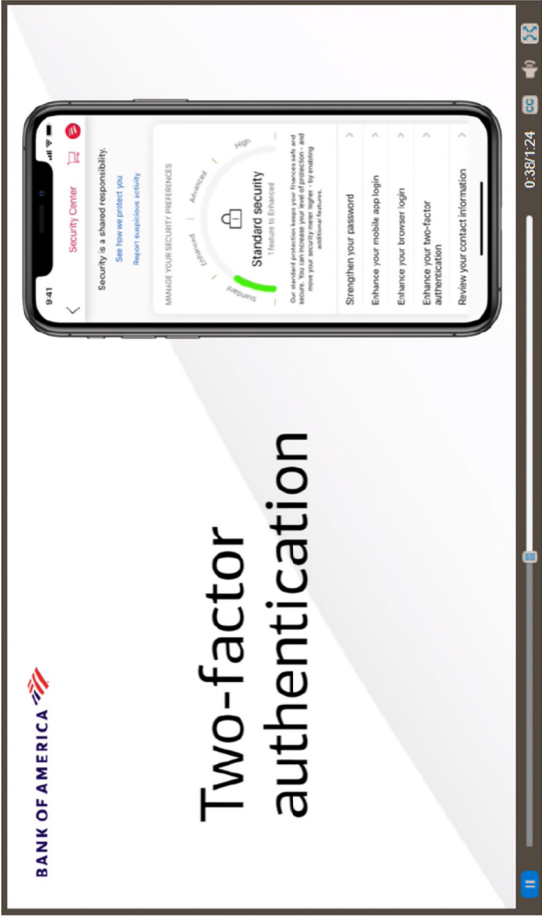
Claim 5	Infringing Product/Structure/Act
5[d] a communication module configured to transmit the token to the personal communication device through the cell phone network; and	The Accused Instrumentalities comprise a communication module configured to transmit the token (e.g., “authorization code” or “sign in code”) to the personal communication device through the cell phone network via, for example, the Short Message Service (SMS).  Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text ¹ or email each time you log in. ² And, with more security settings, new optional security alerts ³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote⁴ (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

Claim 5	Infringing Product/Structure/Act
	2:13    Request Authorization Code To verify your identity, we need to send an authorization code to your phone xxx-xxx-1436 HOW WOULD YOU LIKE TO RECEIVE IT? Text message ☒ Phone call ☐ The code expires 10 minutes after you request it. Having trouble receiving your code by phone? You are consenting to be contacted at the phone number selected for the purpose of receiving an authorization code. If you selected text message, Wireless and text message fees may apply from your carrier. Supported carriers include: AT&T, Sprint, T-Mobile, US Cellular, Verizon, or any other branded wireless operator.  Secure Area Privacy Security Advertising Practices Legal Info & Disclosures Equal Housing Lender  Bank of America, N.A. Member FDIC. © 2021 Bank of America Corporation. CANCEL SEND CODE

Claim 5	Infringing Product/Structure/Act
	

Claim 5	Infringing Product/Structure/Act
5[e] an authentication module configured to receive the password from the user through a secure computer network, said secure computer network being different from the cell phone network, wherein the user has an account on the secure computer network, wherein the authentication module activates access to the account in response to the password and deactivates the account within a predetermined amount of time after activating the account, such that said account is not accessible through any password via the secure computer network.	The Accused Instrumentalities comprise an authentication module configured to receive the password from the user through a secure computer network, which is associated with the Accused Instrumentalities. The cell phone network is different from the secure computer network. The user has an account on the secure computer network, which is used to access Defendants' online banking system. The authentication module activates access to the account in response to the password by allowing access after successful input of the user's credentials, including the passcode and token. The authentication module deactivates the account within a predetermined amount of time after activating the account, such that said account is not accessible through any password via the secure computer network. Alternatively, the Accused Instrumentalities disable access to the user account for the online banking system when that account has not been accessed within a predetermined amount of time. To the extent that the username is not received at the same time as the token, this limitation is met under the doctrine of equivalents because the session ID is received at the same time as the token, session ID corresponds to the username, which is known to the user, and the session ID is used for the same purpose of authenticating the user.

Claim 5	Infringing Product/Structure/Act
	

Claim 5	Infringing Product/Structure/Act
	 Do you provide any online security tools I can use to help protect my information? Yes. You have the option to add extra security to help verify your identity with a one-time authorization code, which is sent by text¹ or email each time you log in.² And, with more security settings, new optional security alerts³ and login history, you can more closely monitor Online and Mobile Banking activity on your accounts. You can even download free fraud-protection software and use your fingerprint and your saved Bank of America User ID to log in to the Mobile Banking appFootnote4 (the app uses the fingerprint already stored on your device). Most of these tools are conveniently located in one place in your Security Center, which you can access from the Profile & Settings menu in Online and Mobile Banking. Learn more about Security Center See, e.g., https://www.bankofamerica.com/security-center/faq/online-banking/.

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