US011593718B2

(12) **United States Patent**
Oliver et al.

(10) **Patent No.: US 11,593,718 B2**
(45) **Date of Patent: Feb. 28, 2023**

(54) **SYSTEMS AND METHODS FOR SCHEDULING AND PERFORMING SELF-GUIDED TOURS OF MULTI-UNIT RESIDENTIAL FACILITIES**

(71) Applicant: **Gibraltar Industries, Inc.**, Buffalo, NY (US)

(72) Inventors: **Georgianna Oliver**, Medfield, MA (US); **Michael R. Molt**, Manhattan, KS (US); **John I. Doyle**, Washington, DC (US)

(73) Assignee: **Tour24, Inc.**, Medfield, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 247 days.

(21) Appl. No.: **16/518,772**

(22) Filed: **Jul. 22, 2019**

(65) **Prior Publication Data**

US 2020/0027038 A1 Jan. 23, 2020

Related U.S. Application Data

(60) Provisional application No. 62/701,100, filed on Jul. 20, 2018.

(51) **Int. Cl.**
G06Q 10/02 (2012.01)
G06Q 50/16 (2012.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G06Q 10/02*** (2013.01); ***G06Q 20/4014*** (2013.01); ***G06Q 50/16*** (2013.01); ***G07C 9/20*** (2020.01)

(58) **Field of Classification Search**
CPC G06Q 10/02; G06Q 20/4014; G06Q 50/16; G07C 9/20
See application file for complete search history.

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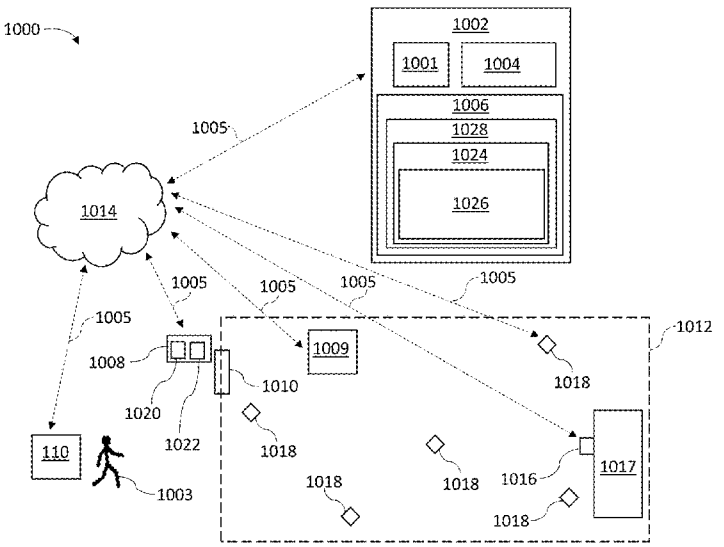
Primary Examiner — Daniel Vetter
Assistant Examiner — Christopher Gomez
(74) *Attorney, Agent, or Firm* — Leydig, Voit & Mayer, Ltd.

(57) **ABSTRACT**

Systems, methods and software for scheduling and performing self-guided tours (SGTs) of multi-unit residential facilities (MURFs) are provided. For scheduling SGTs, the method includes receiving guest information, payment information, and identification (ID) information from a client device, determining validity of the payment and ID information, and receiving and confirming an SGT tour time. For performing SGTs, the method includes sending property access information to a client device, receiving a trigger from a property access control system indicating that a user of the client device has entered the MURF, providing MURF tour directions to the client device, and receiving tour data for the SGT. The disclosed systems, methods, and software provide prospective tenant users and owners and/or management of MURFs efficient and user-friendly interaction to accomplish and enhance their tour operation experiences.

9 Claims, 35 Drawing Sheets



(51) **Int. Cl.**
G06Q 20/40 (2012.01)
G07C 9/20 (2020.01)

(56) **References Cited**

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This app aims to be the Uber of rental brokers; New York Post; Oct. 3, 2017 https://nypost.com/2017/10/03/this-app-aims-to-be-the-uber-of-rental-brokers/, 2 pages (downloaded from Internet on Jul. 22, 2019).

How do I visit and Opendoor home? https://www.opendoor.com/w/faq/hot-to-visit-an-opendoor-home, 5 pages (downloaded from Internet on Jul. 22, 2019).

* cited by examiner

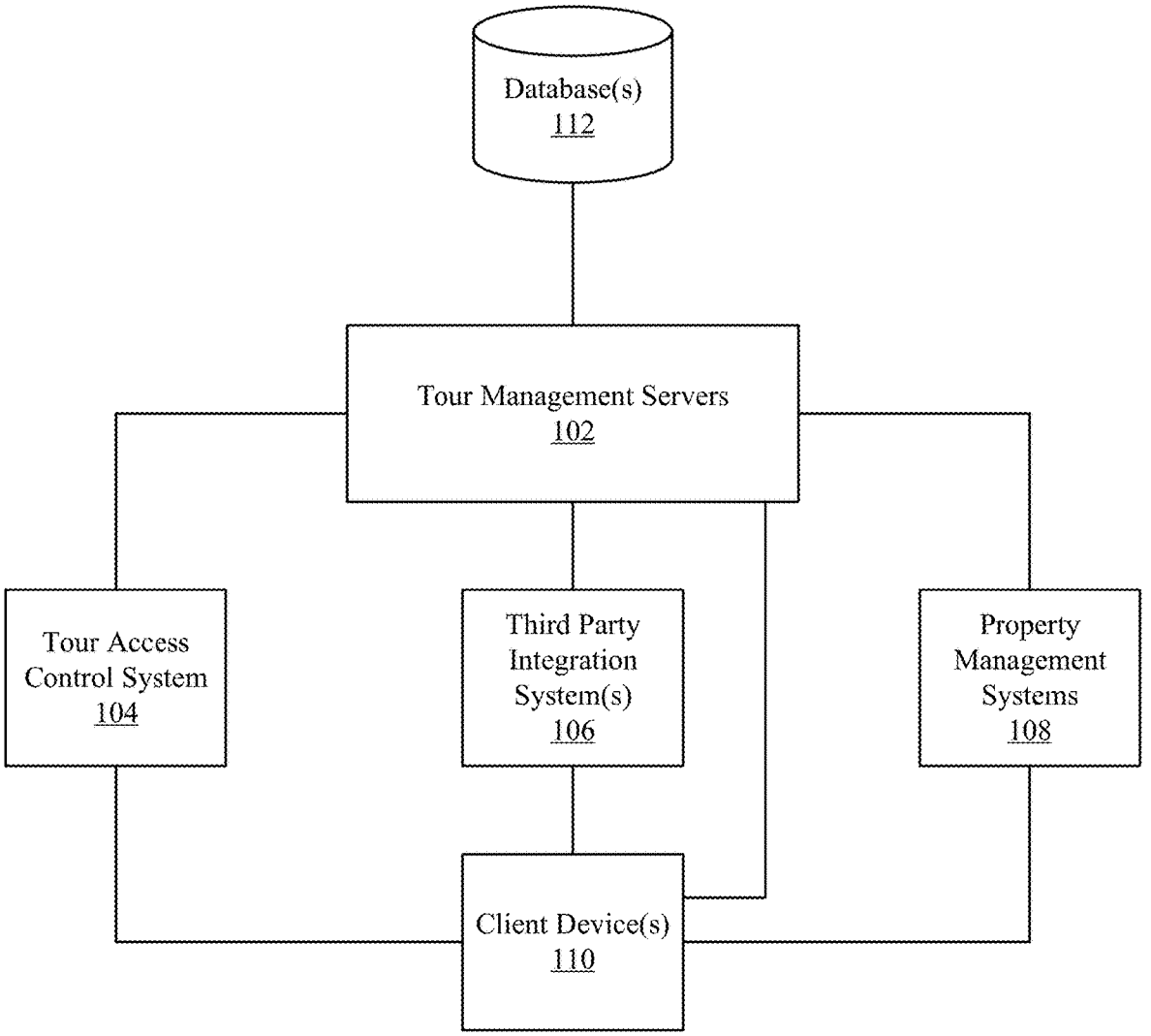
Database(s)
112
Tour Management Servers
102
Tour Access Control System
104
Third Party Integration System(s)
106
Property Management Systems
108
Client Device(s)
110

FIG. 1

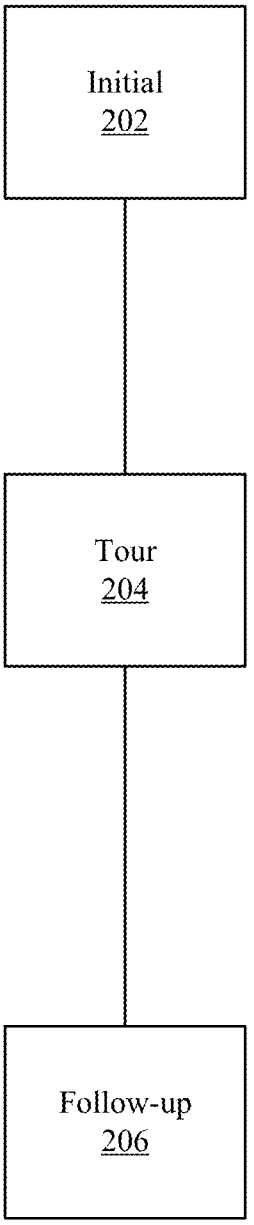

FIG. 2

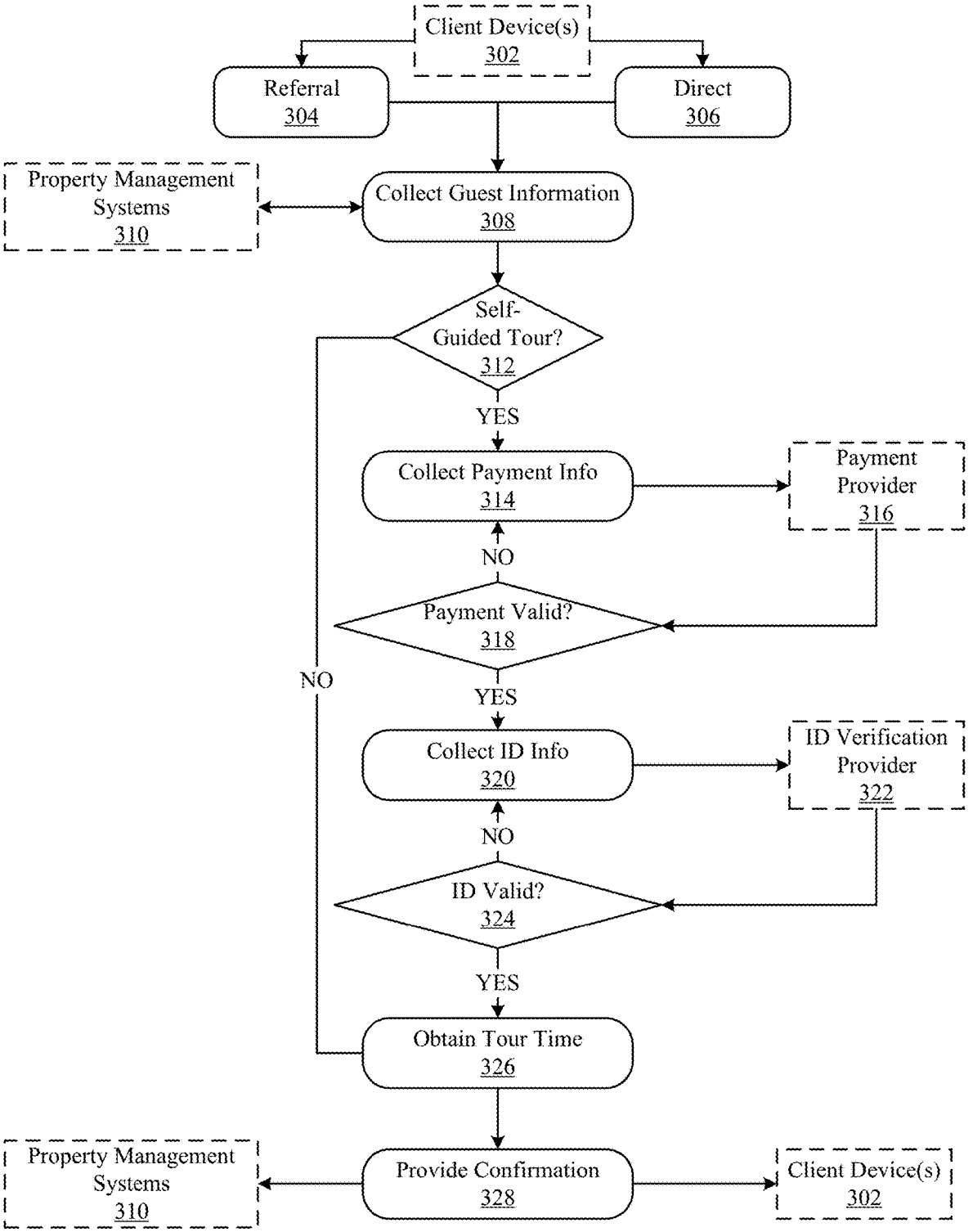
Client Device(s)
302
Referral
304
Direct
306
Property Management Systems
310
Collect Guest Information
308
Self-Guided Tour?
312
YES
Collect Payment Info
314
Payment Provider
316
NO
Payment Valid?
318
NO
YES
Collect ID Info
320
ID Verification Provider
322
NO
ID Valid?
324
YES
Obtain Tour Time
326
Property Management Systems
310
Provide Confirmation
328
Client Device(s)
302

FIG. 3

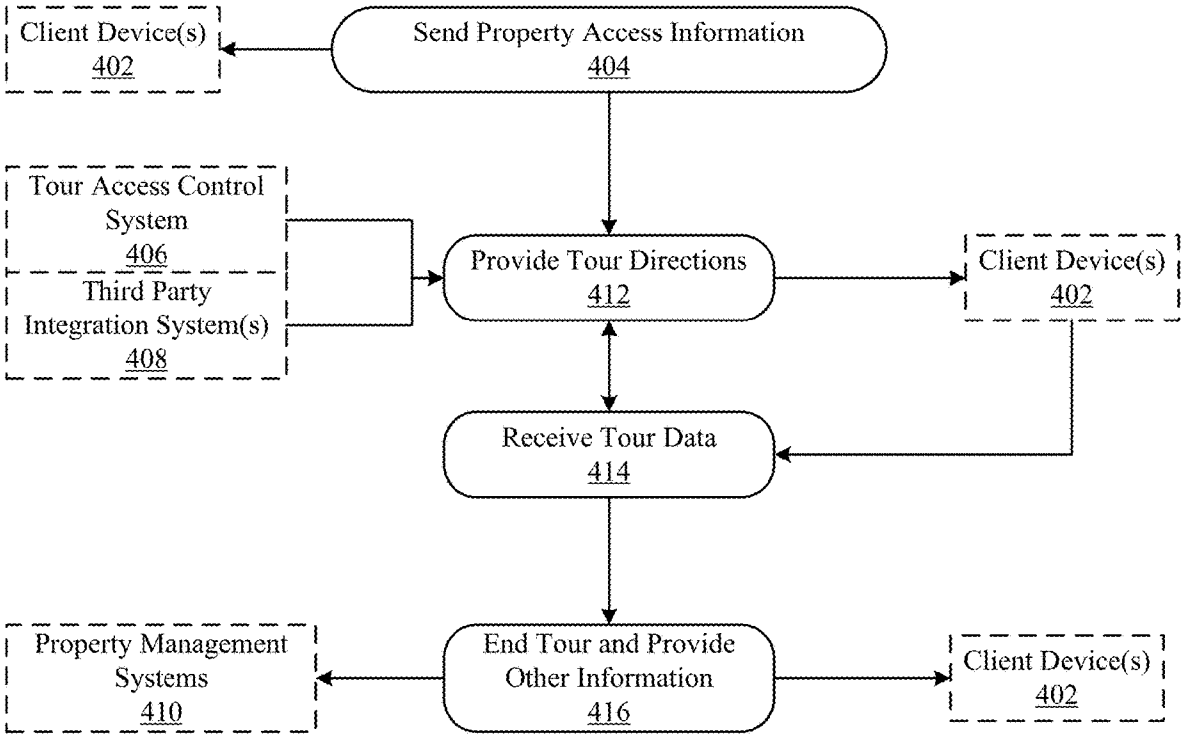
Client Device(s)
402
Send Property Access Information
404
Tour Access Control System
406
Third Party Integration System(s)
408
Provide Tour Directions
412
Client Device(s)
402
Receive Tour Data
414
Property Management Systems
410
End Tour and Provide Other Information
416
Client Device(s)
402

FIG. 4

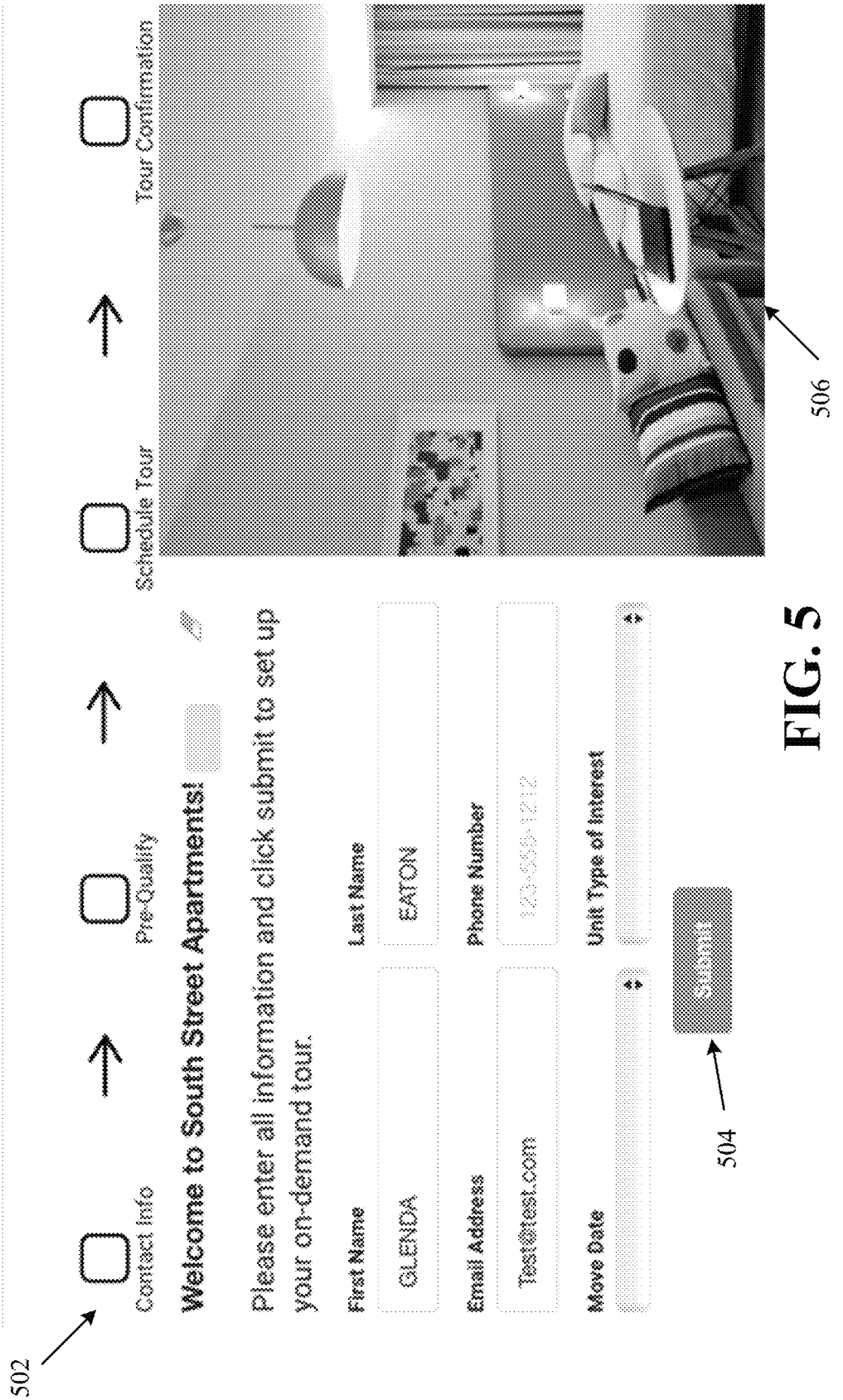
502
Contact Info
Pre-Qualify
Schedule Tour
Tour Confirmation
Welcome to South Street Apartments!
Please enter all information and click submit to set up your on-demand tour.
First Name
GLENDA
Last Name
EATON
Email Address
Test@test.com
Phone Number
Move Date
Unit Type of Interest
Submit
504
506

FIG. 5

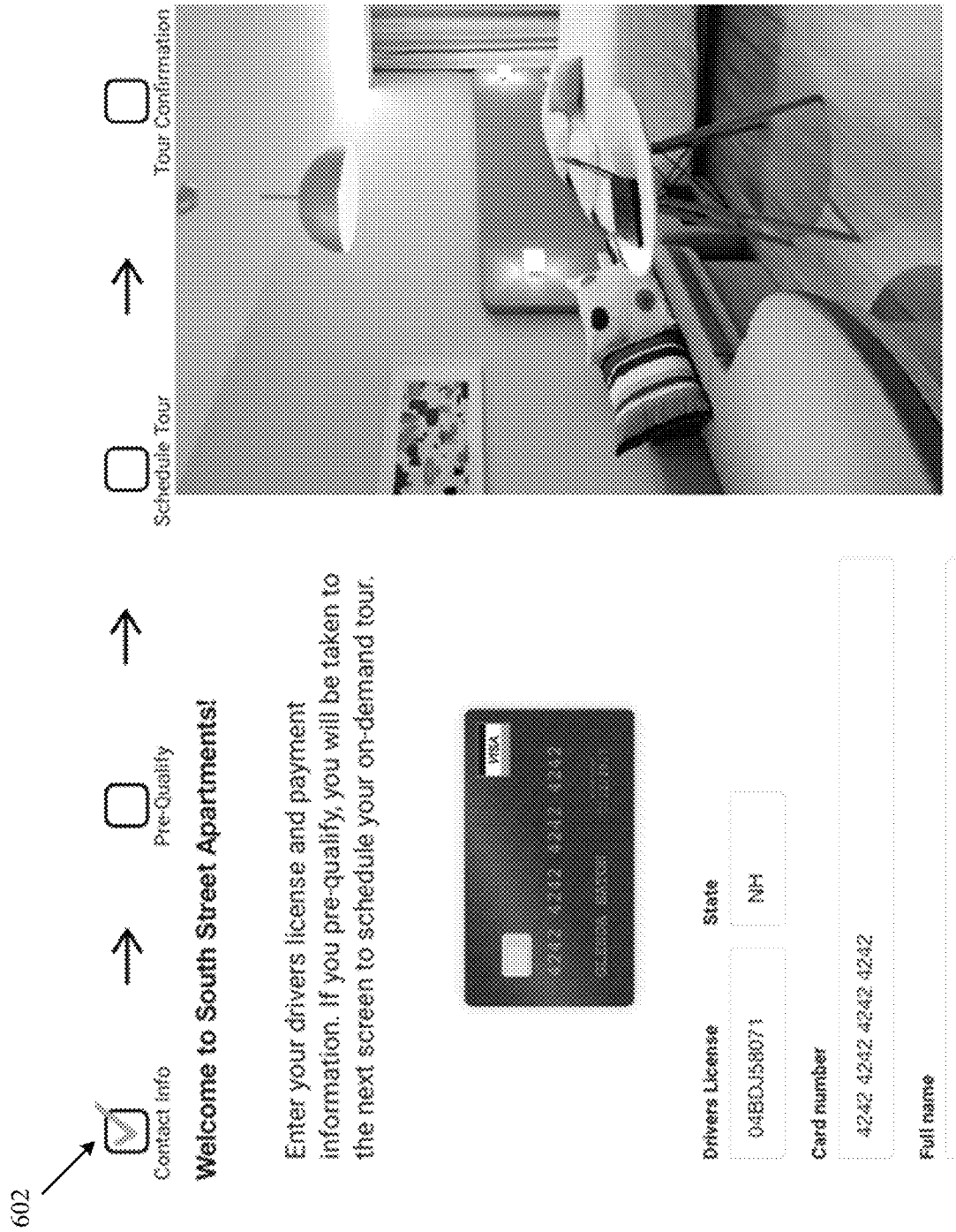
602
Contact Info
Pre-Qualify
Schedule Tour
Tour Confirmation
Welcome to South Street Apartments!
Enter your drivers license and payment information. If you pre-qualify, you will be taken to the next screen to schedule your on-demand tour.
VISA
Drivers License
State
04BDJ58073
NH
Card number
4242 4242 4242 4242
Full name
GLENDA EATON

FIG. 6

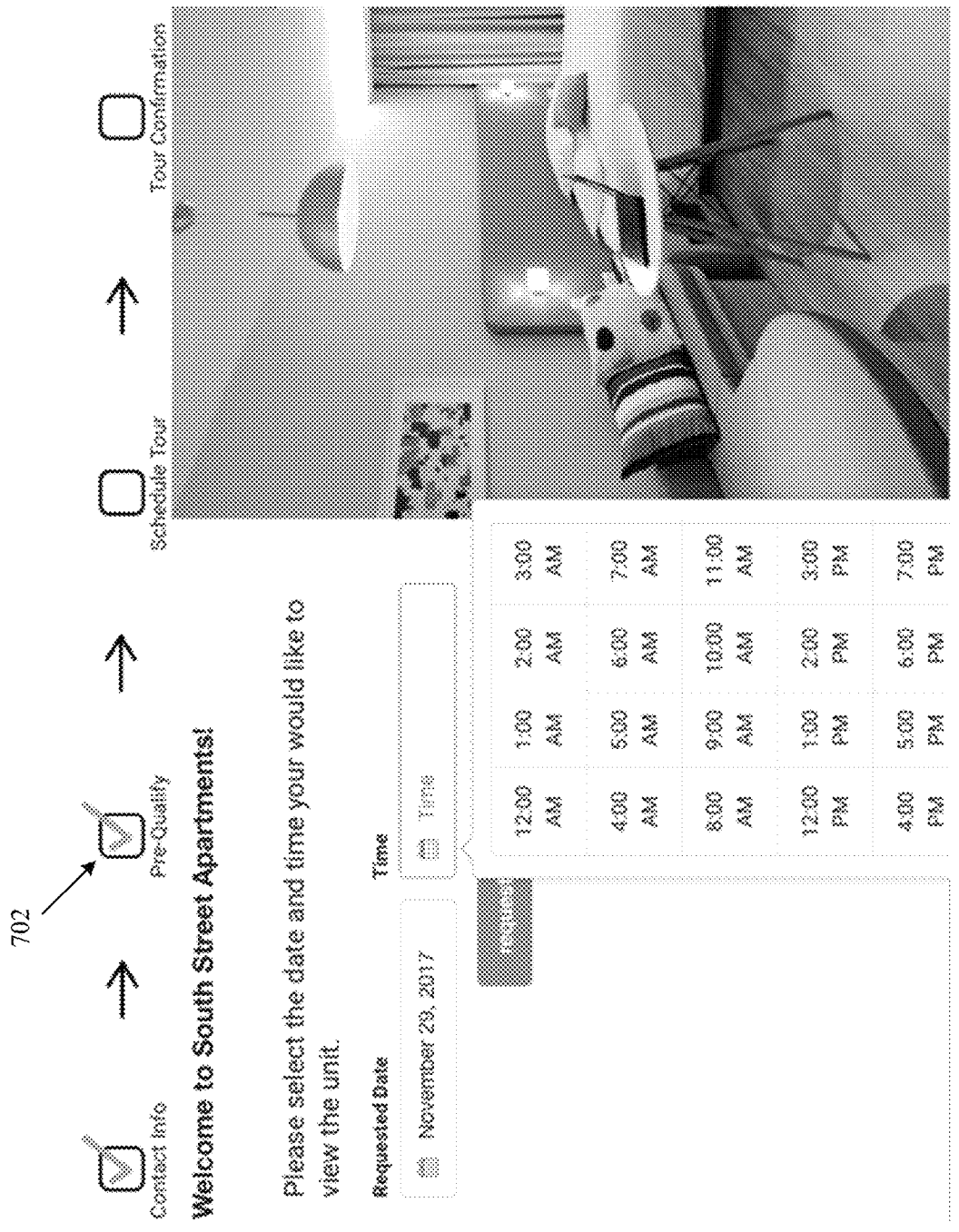
702
Contact Info
Pre-Qualify
Schedule Tour
Tour Confirmation
Welcome to South Street Apartments!
Please select the date and time your would like to view the unit.
Requested Date
November 29, 2017
Time
Time
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM

FIG. 7

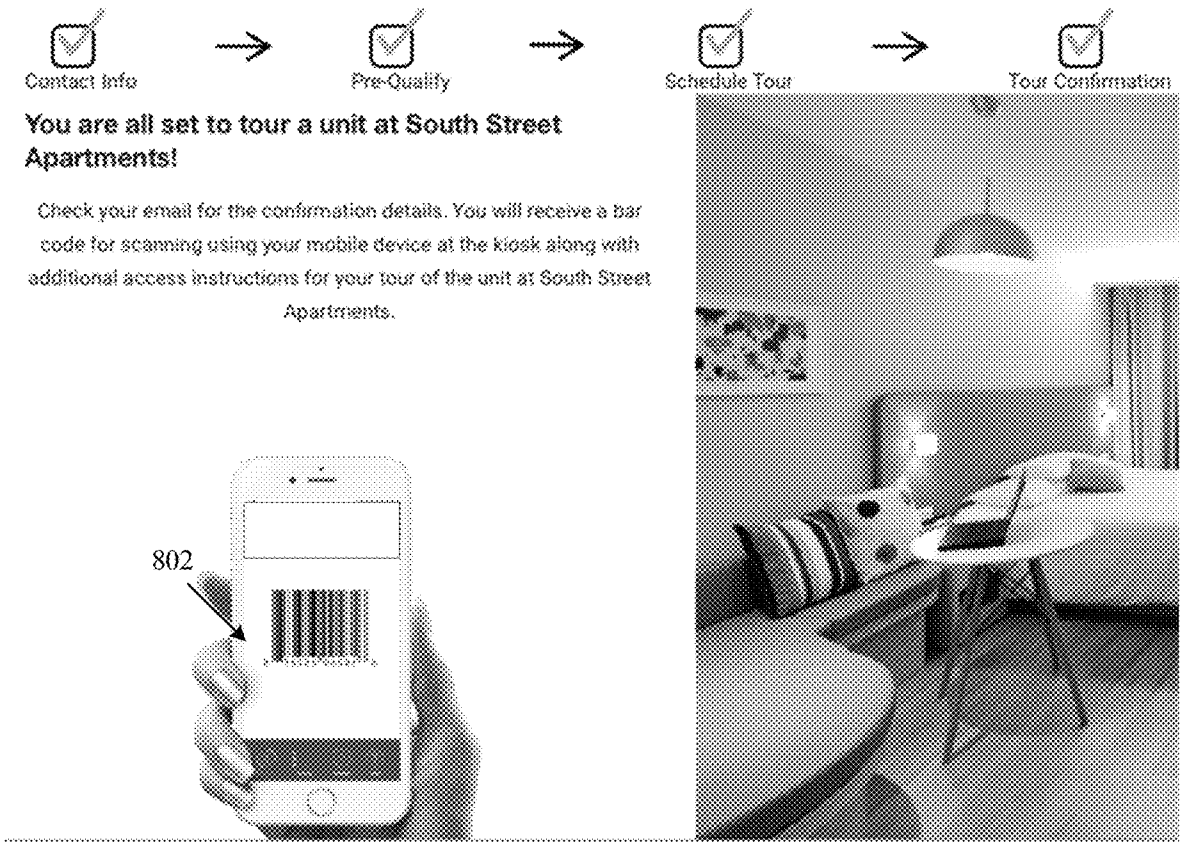
Contact Info
Pre-Qualify
Schedule Tour
Tour Confirmation
You are all set to tour a unit at South Street Apartments!
Check your email for the confirmation details. You will receive a bar code for scanning using your mobile device at the kiosk along with additional access instructions for your tour of the unit at South Street Apartments.
802

FIG. 8

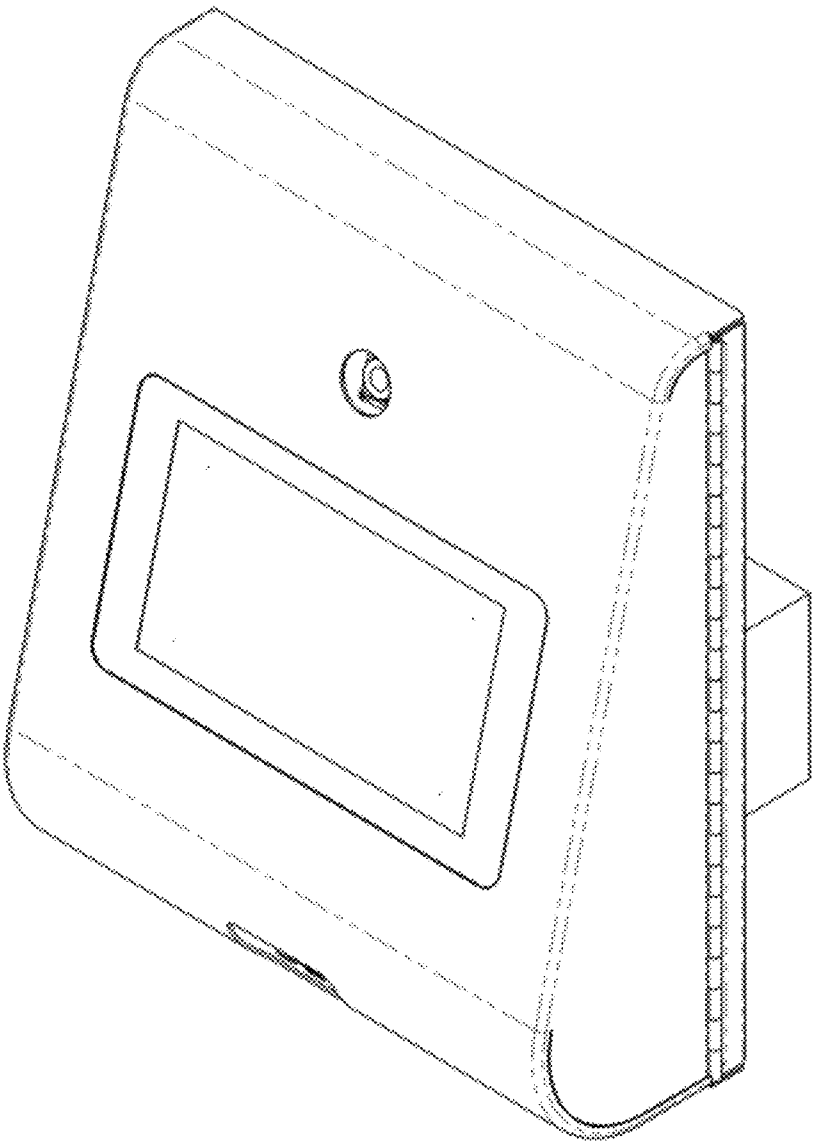

FIG. 9A

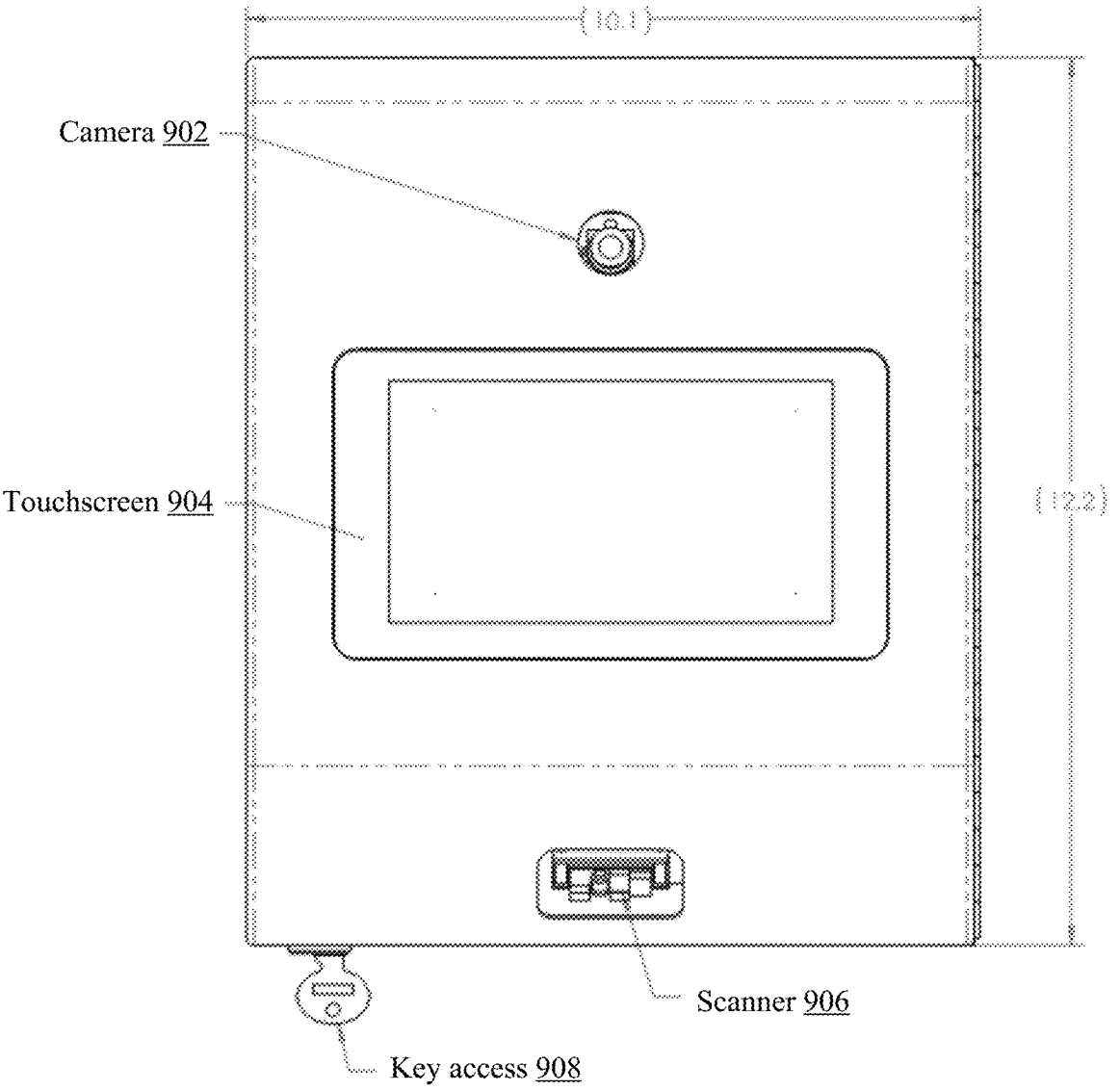

FIG. 9B

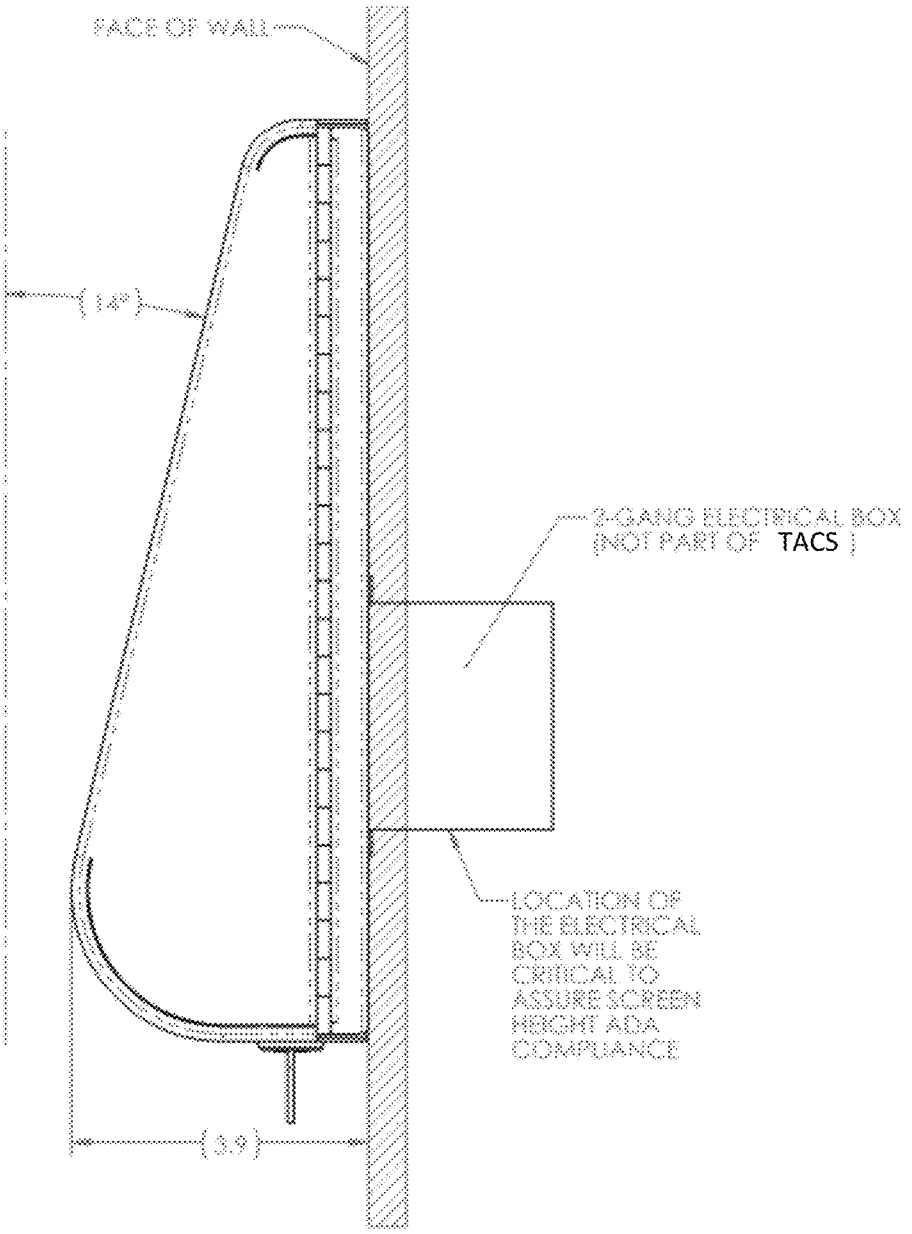
FACE OF WALL
14"
3.9
2-GANG ELECTRICAL BOX
(NOT PART OF TACS)
LOCATION OF
THE ELECTRICAL
BOX WILL BE
CRITICAL TO
ASSURE SCREEN
HEIGHT ADA
COMPLIANCE

FIG. 9C

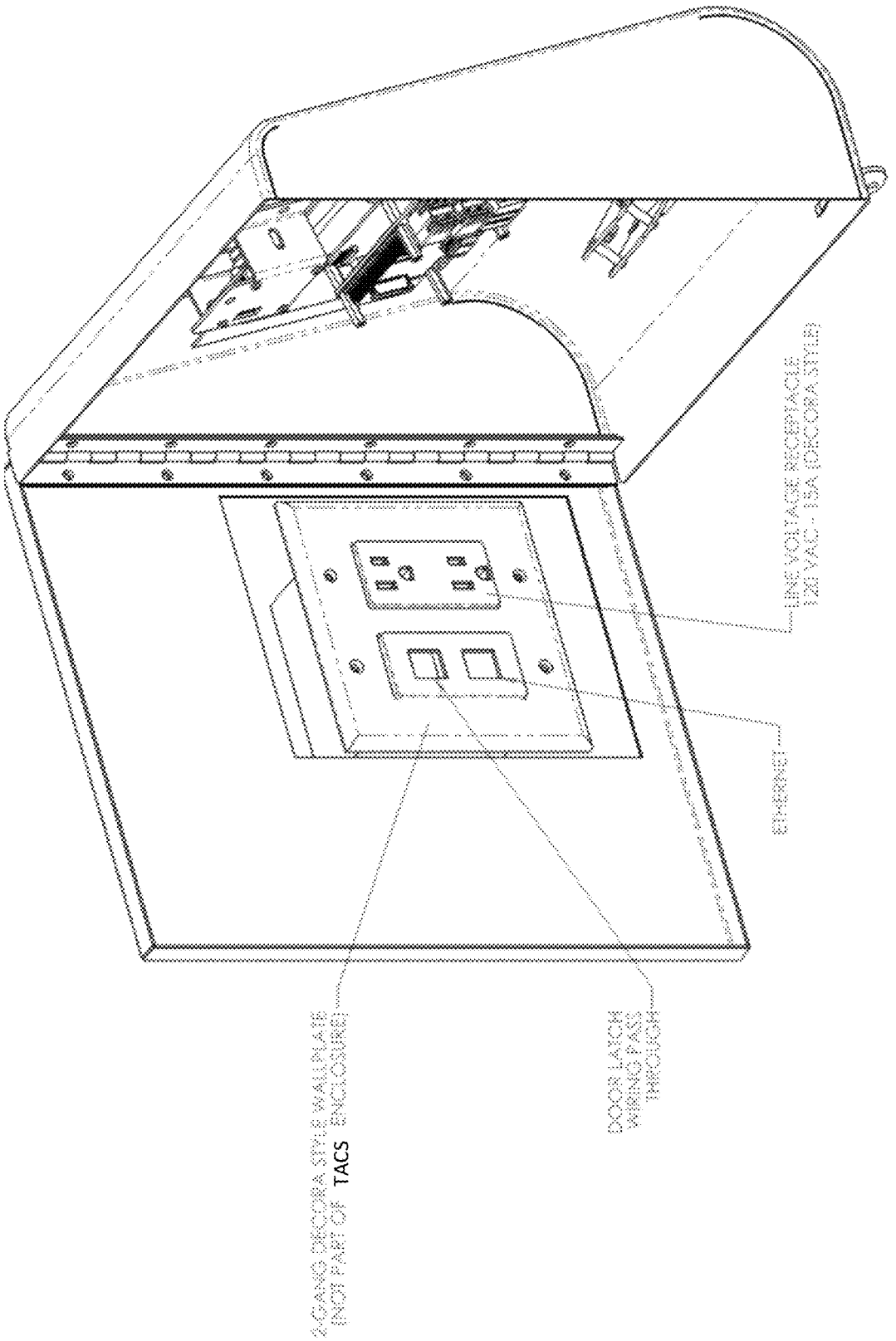
LINE VOLTAGE RECEPTACLE
120 VAC - 15A (DECORA STYLE)
ETHERNET
DOOR LATCH
WIRING PASS
THROUGH
2-GANG DECORA STYLE WALLPLATE
(NOT PART OF TACS ENCLOSURE)

FIG. 9D

1
2
75
SOUTH CATHEDRAL MANSIONS
WINKLEY PARK
HOME
FLOOR PLANS
FEATURES & AMENITIES
NEIGHBORHOOD
STORY
GALLERY
BLOG
CONTACT
Receive Updates
Features & Amenities
Find Your Perfect Floorplan

FIG. 10

3
OPEN
Start here to take a tour today!
4
tour

FIG. 11

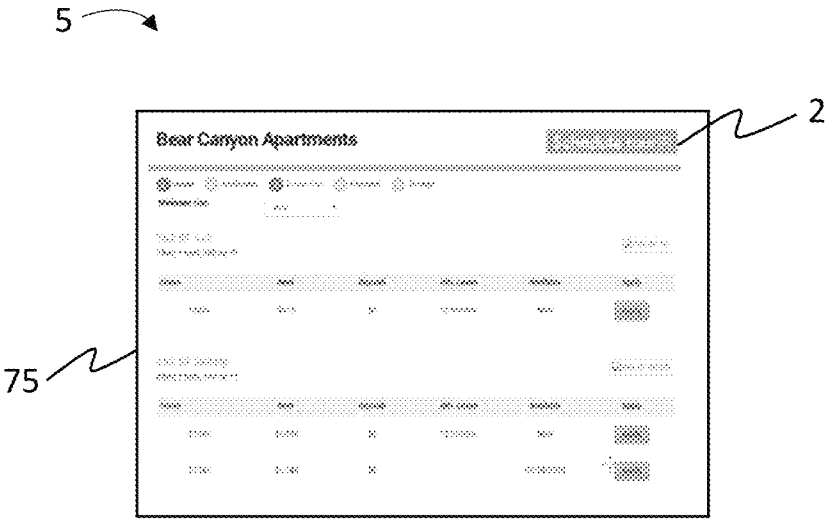
5
Bear Canyon Apartments
2
75

FIG. 12

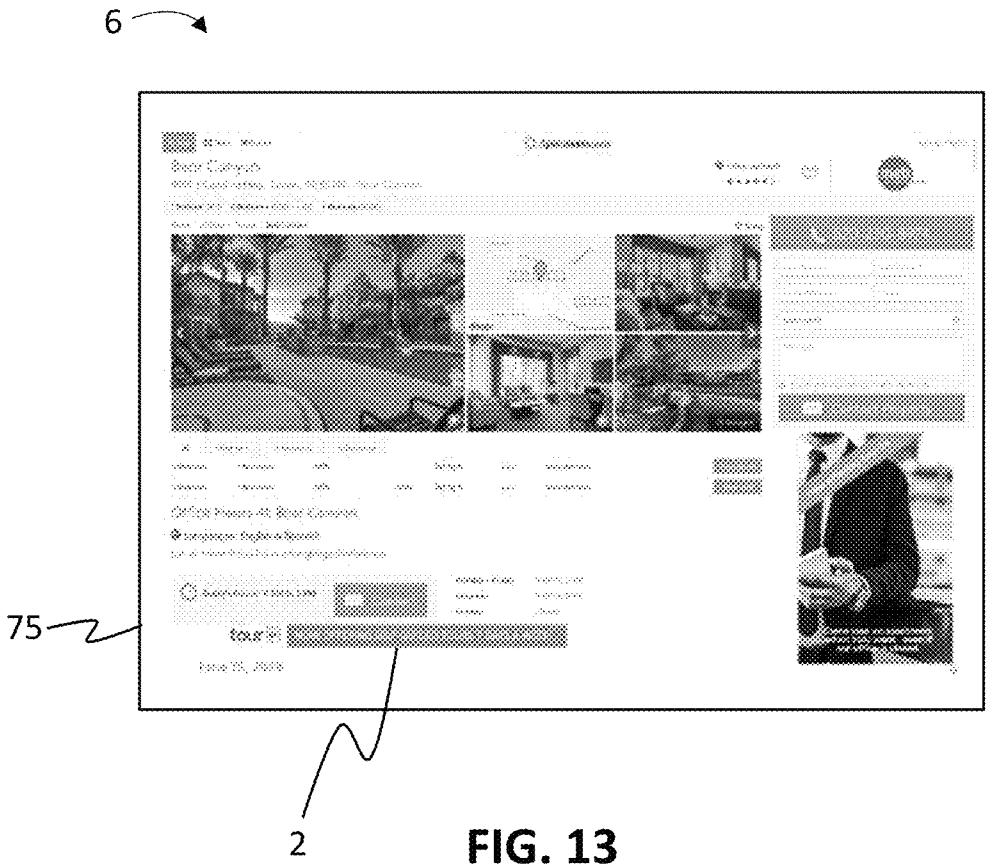

FIG. 13

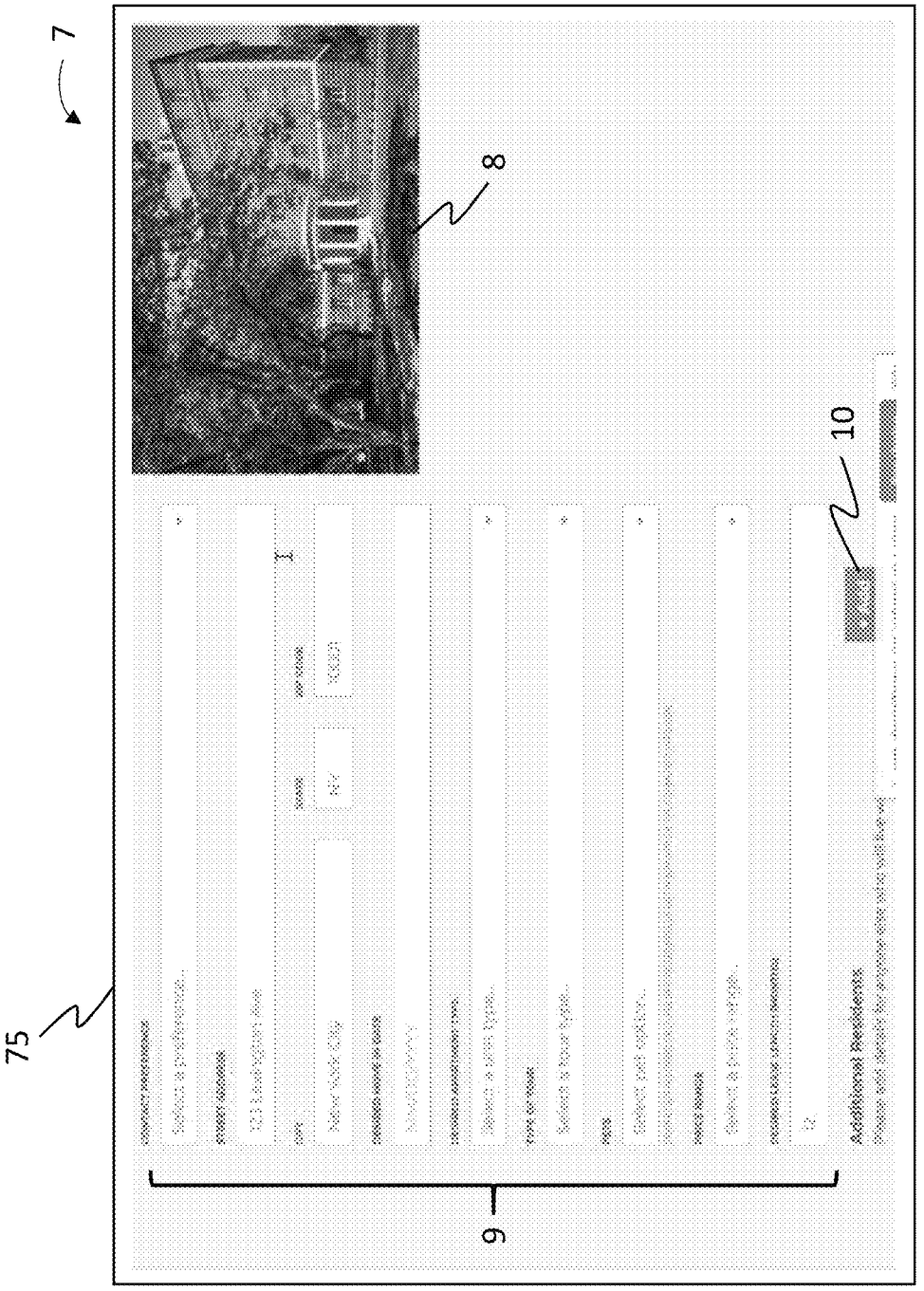

FIG. 14

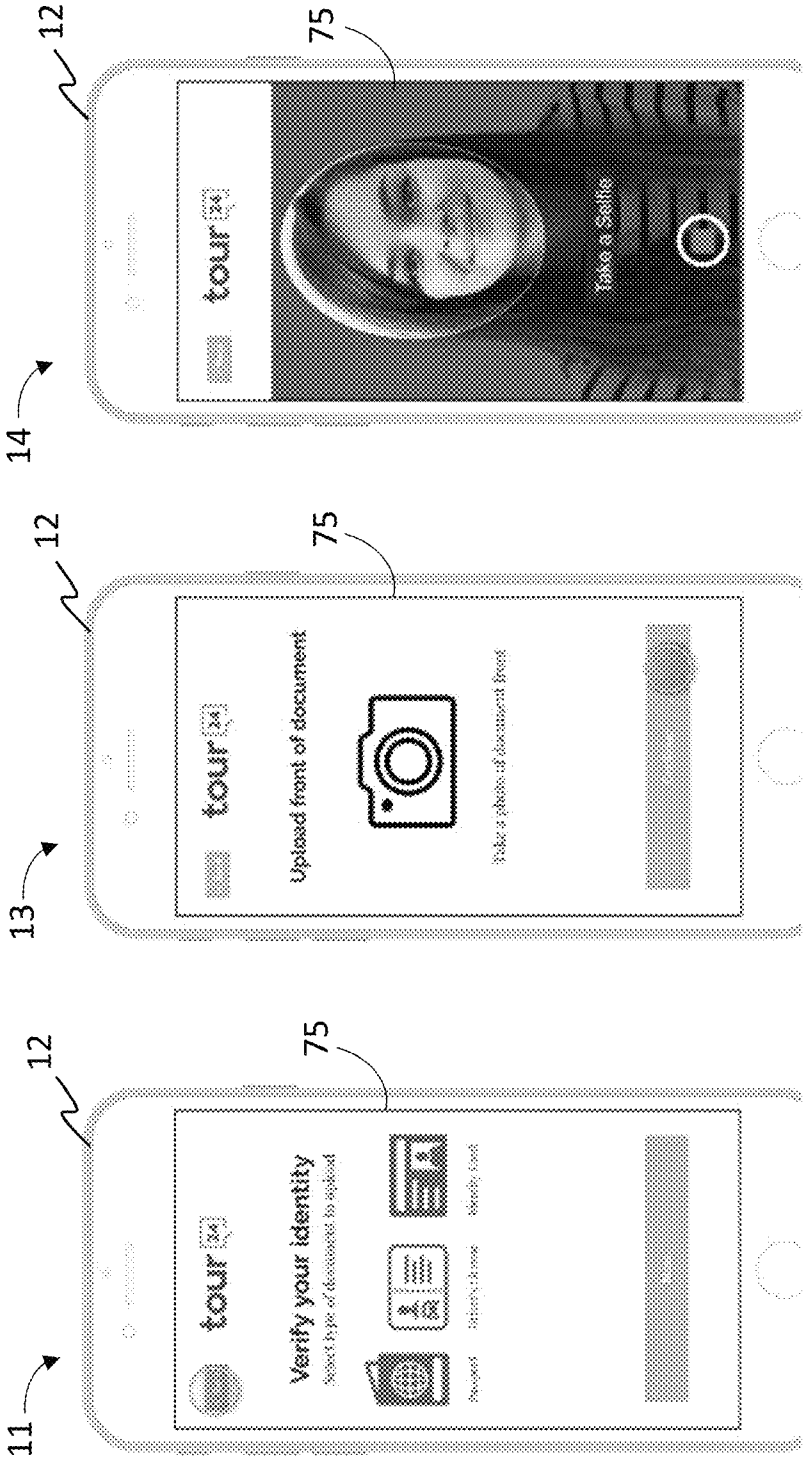

FIG. 15

FIG. 16

FIG. 17

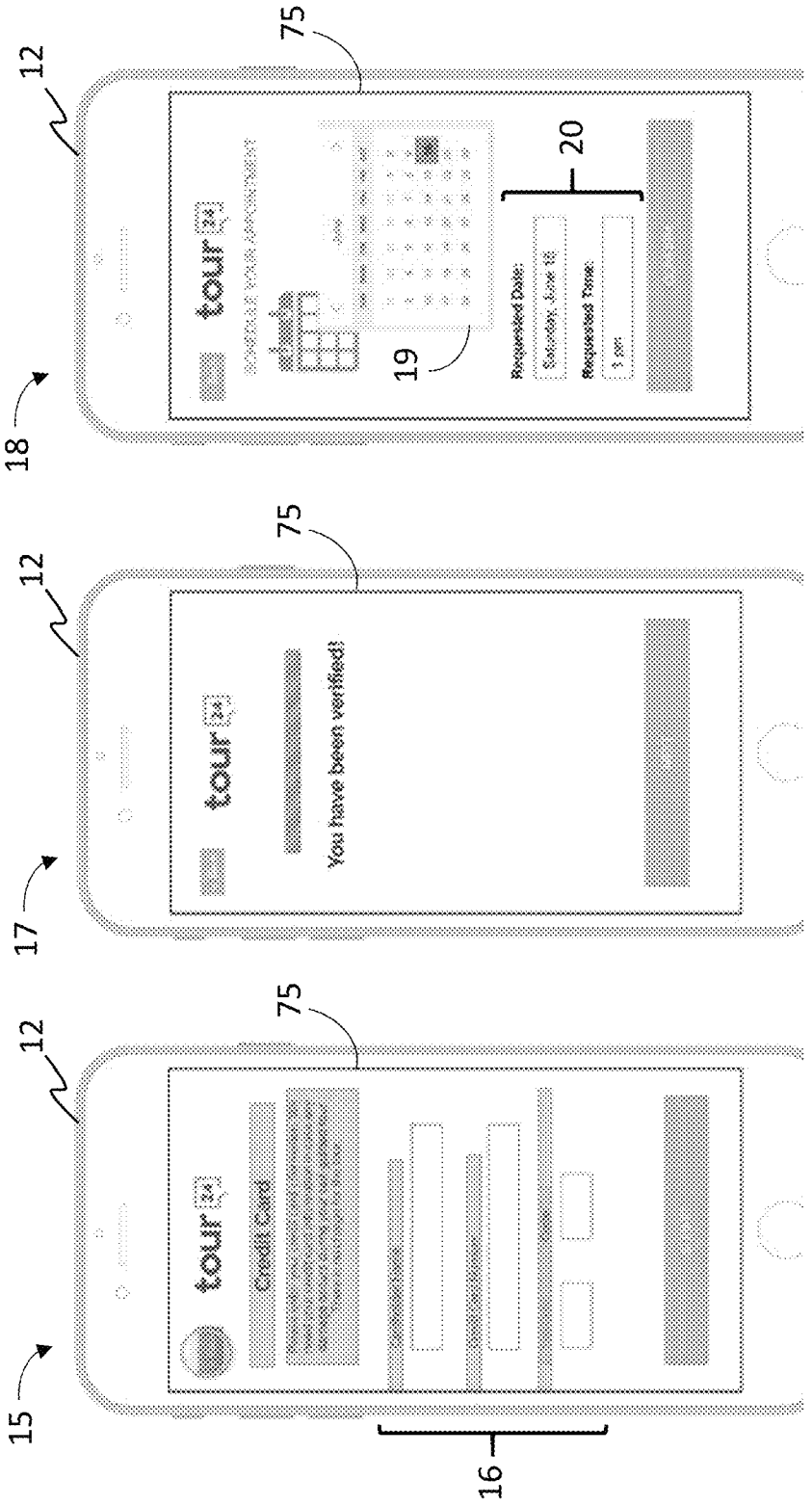

FIG. 18

FIG. 19

FIG. 20

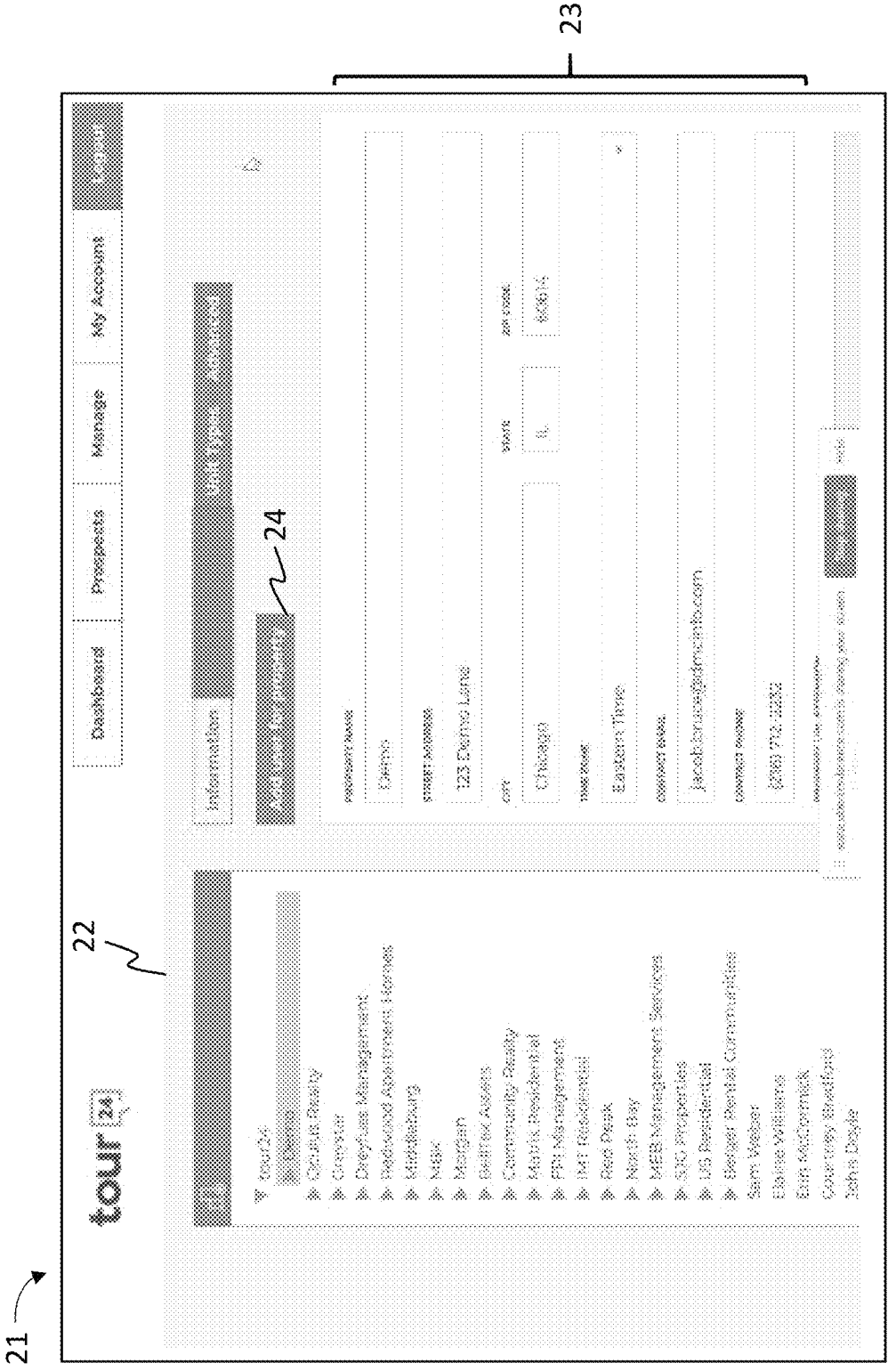
21
22
23
24
tour 24
Dashboard
Prospects
Manage
My Account
Information
Add user for property
Demo
123 Demo Lane
Chicago
Eastern Time
Oculus Realty
Greystar
Dreyfuss Management
Redwood Apartment Homes
Middleburg
MBK
Morgan
Belltrek Assets
Community Realty
Matrix Residential
FPI Management
IMT Residential
Red Peak
North Bay
MEB Management Services
STG Properties
US Residential
Berger Rental Communities
Sam Weber
Elaine Williams
Erin McCormick
Courtney Bradford
John Doyle

FIG. 21

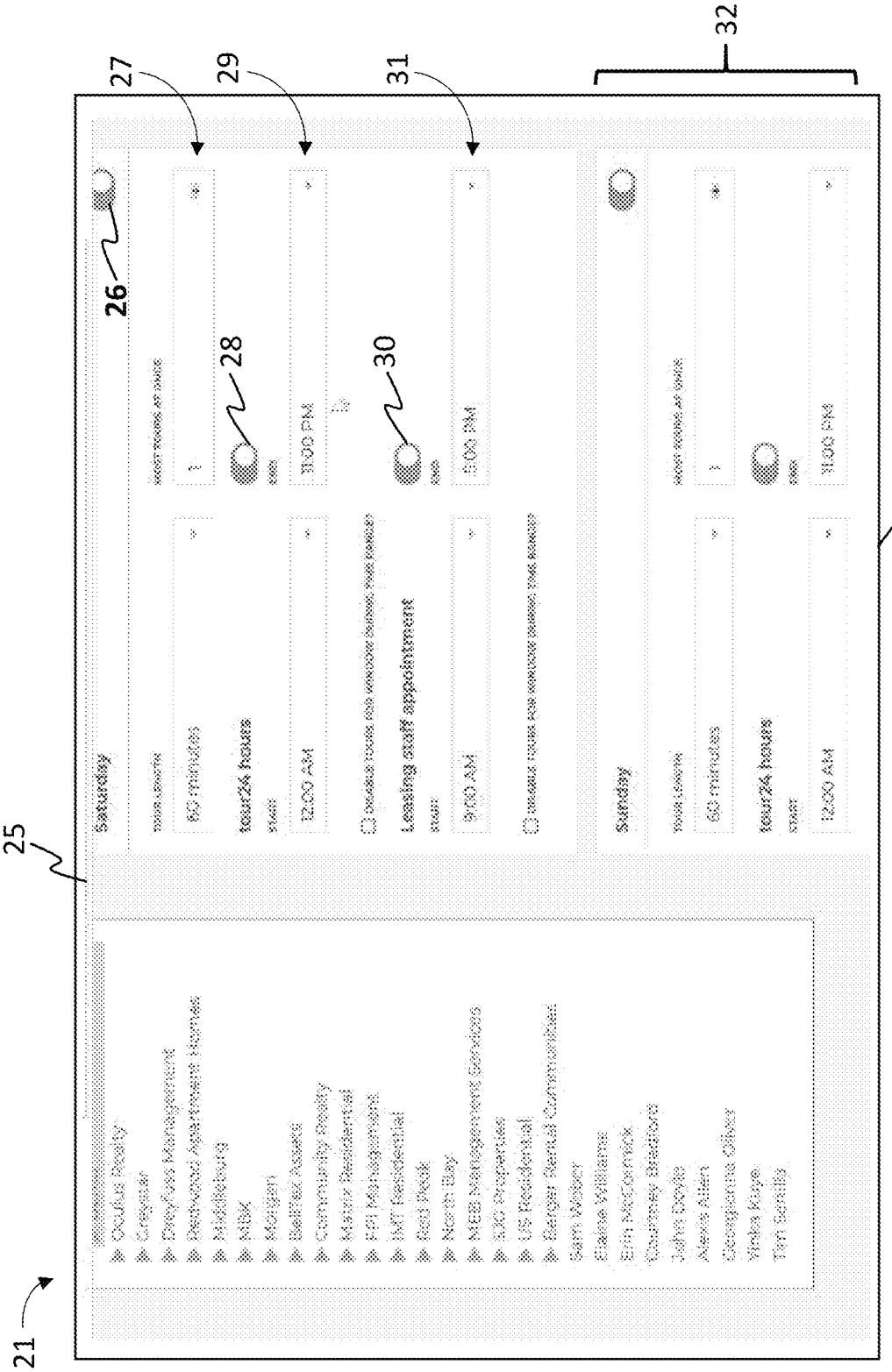
21
25
26
27
28
29
30
31
32
75
Saturday
Sunday
60 minutes
tour24 hours
12:00 AM
11:00 PM
9:00 AM
5:00 PM
Leasing staff appointment

FIG. 22

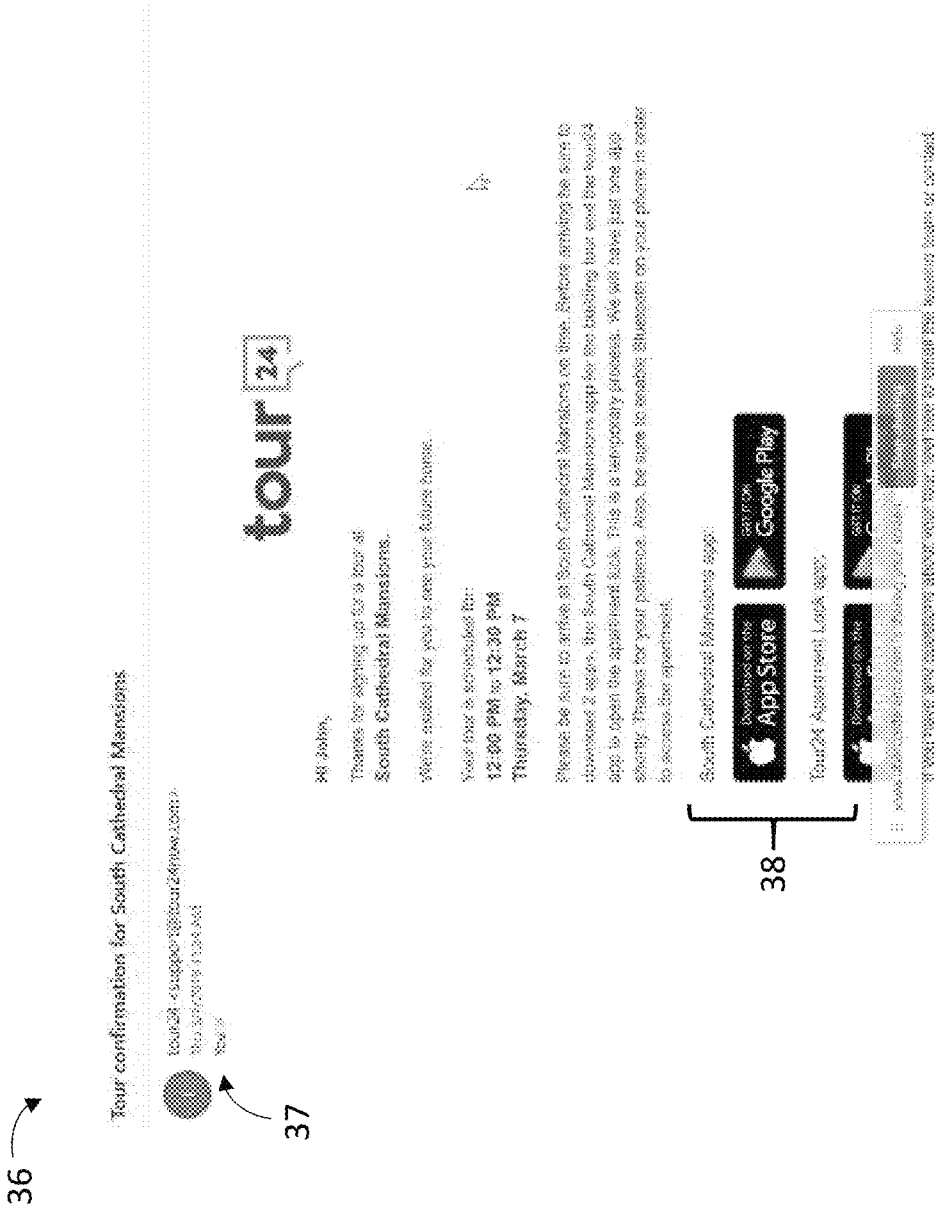
36
Tour confirmation for South Cathedral Mansions
37
tour 24
Hi John,
Thanks for signing up for a tour at
South Cathedral Mansions.
We're excited for you to see your future home.
Your tour is scheduled for:
12:00 PM to 12:30 PM
Thursday, March 7
Please be sure to arrive at South Cathedral Mansions on time. Before arriving be sure to
download & open the South Cathedral Mansions app for the building tour and the touch
app to open the apartment lock. This is a temporary process. We will have just one app
shortly. Thanks for your patience. Also, be sure to enable Bluetooth on your phone in order
to access the apartment.
South Cathedral Mansions app:
Download on the App Store
GET IT ON Google Play
38
Tour24 Apartment Lock app:

FIG. 23

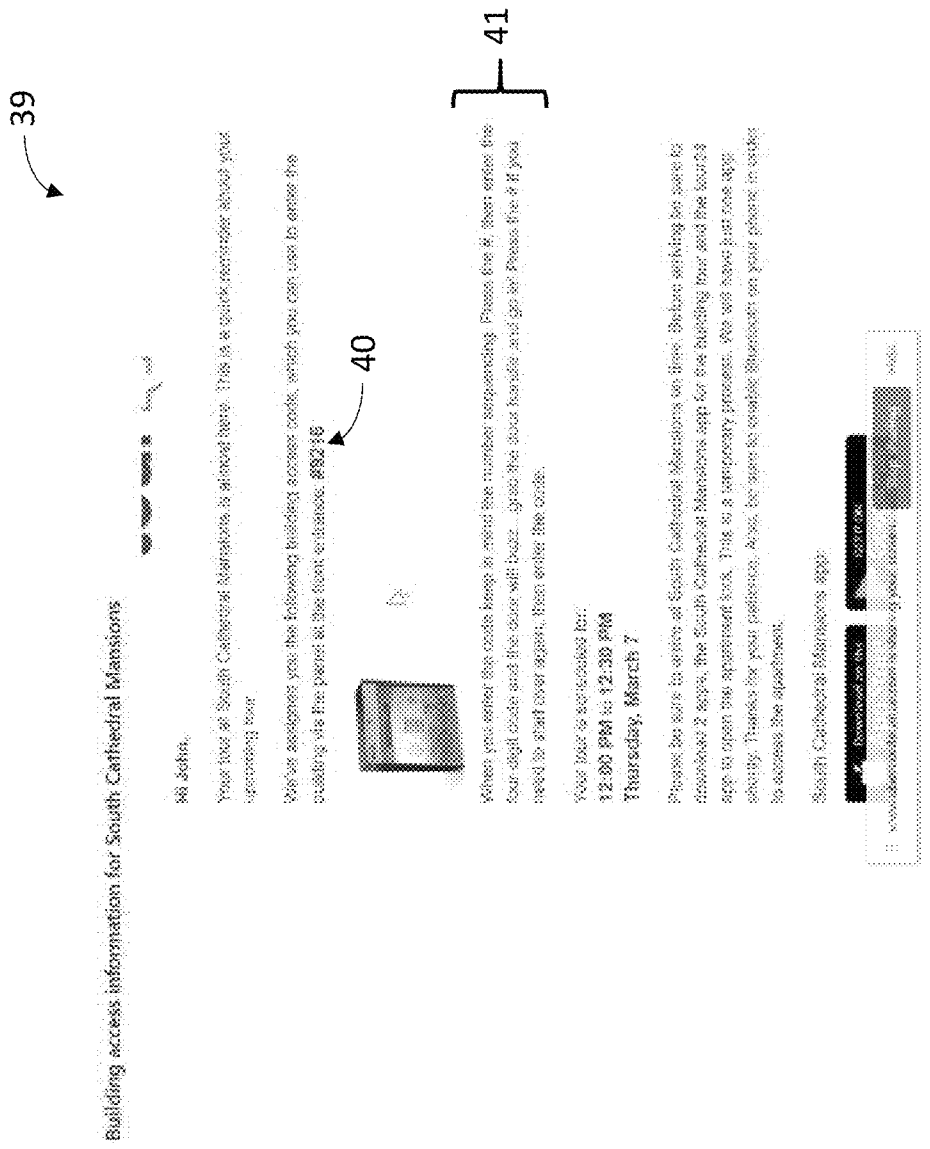
39
40
41
Building access information for South Cathedral Mansions
Hi John,
Your tour at South Cathedral Mansions is almost here. This is a quick reminder about your upcoming tour.
We've assigned you the following building access code, which you can use to enter the building via the panel at the front entrance: #8216
When you enter the code keep in mind the number sequencing. Please fire it, then enter the four-digit code and the door will buzz...grab the door handle and go in! Please fire it if you need to start over again, then enter the code.
Your tour is scheduled for:
12:00 PM to 12:30 PM
Thursday, March 7
Please be sure to arrive at South Cathedral Mansions on time. Before arriving be sure to download 2 apps, the South Cathedral Mansions app for the building tour and the Sound app to open the apartment lock. This is a temporary process. We will have just one app shortly. Thanks for your patience. And, be sure to enable Bluetooth on your phone in order to access the apartment.
South Cathedral Mansions app:

FIG. 24

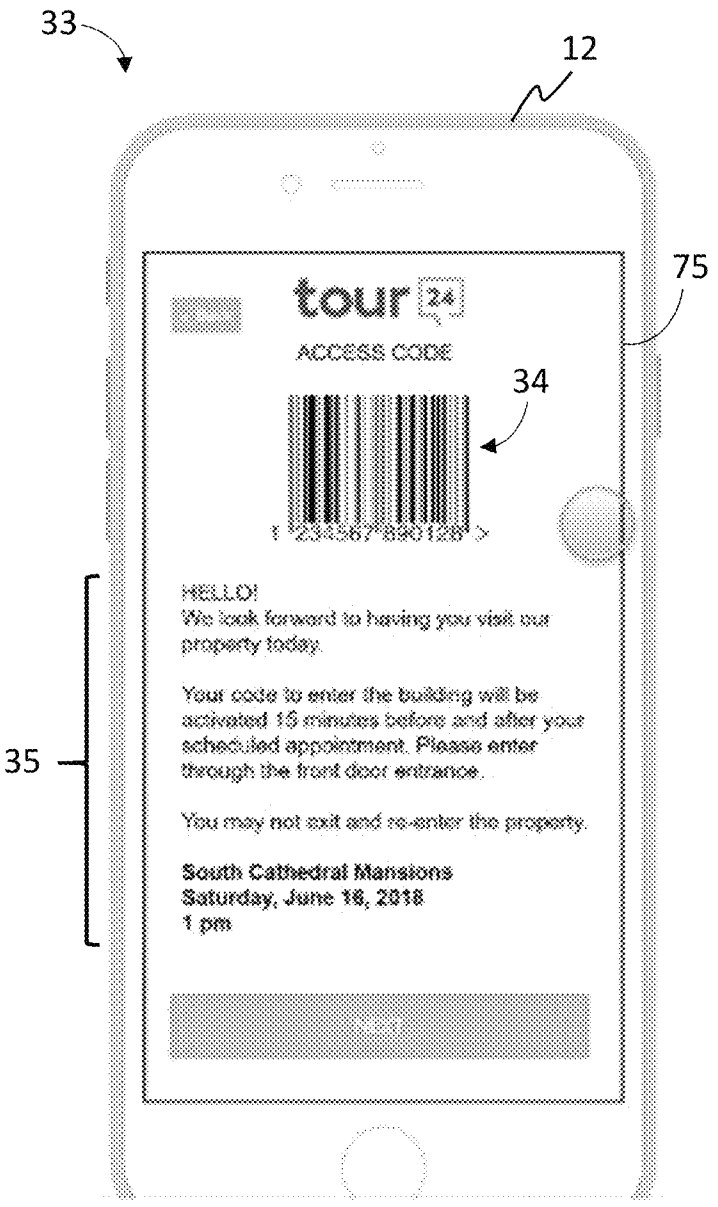
33
12
75
tour 24
ACCESS CODE
34
HELLO!
We look forward to having you visit our property today.
Your code to enter the building will be activated 15 minutes before and after your scheduled appointment. Please enter through the front door entrance.
You may not exit and re-enter the property.
South Cathedral Mansions
Saturday, June 16, 2018
1 pm
35

FIG. 25

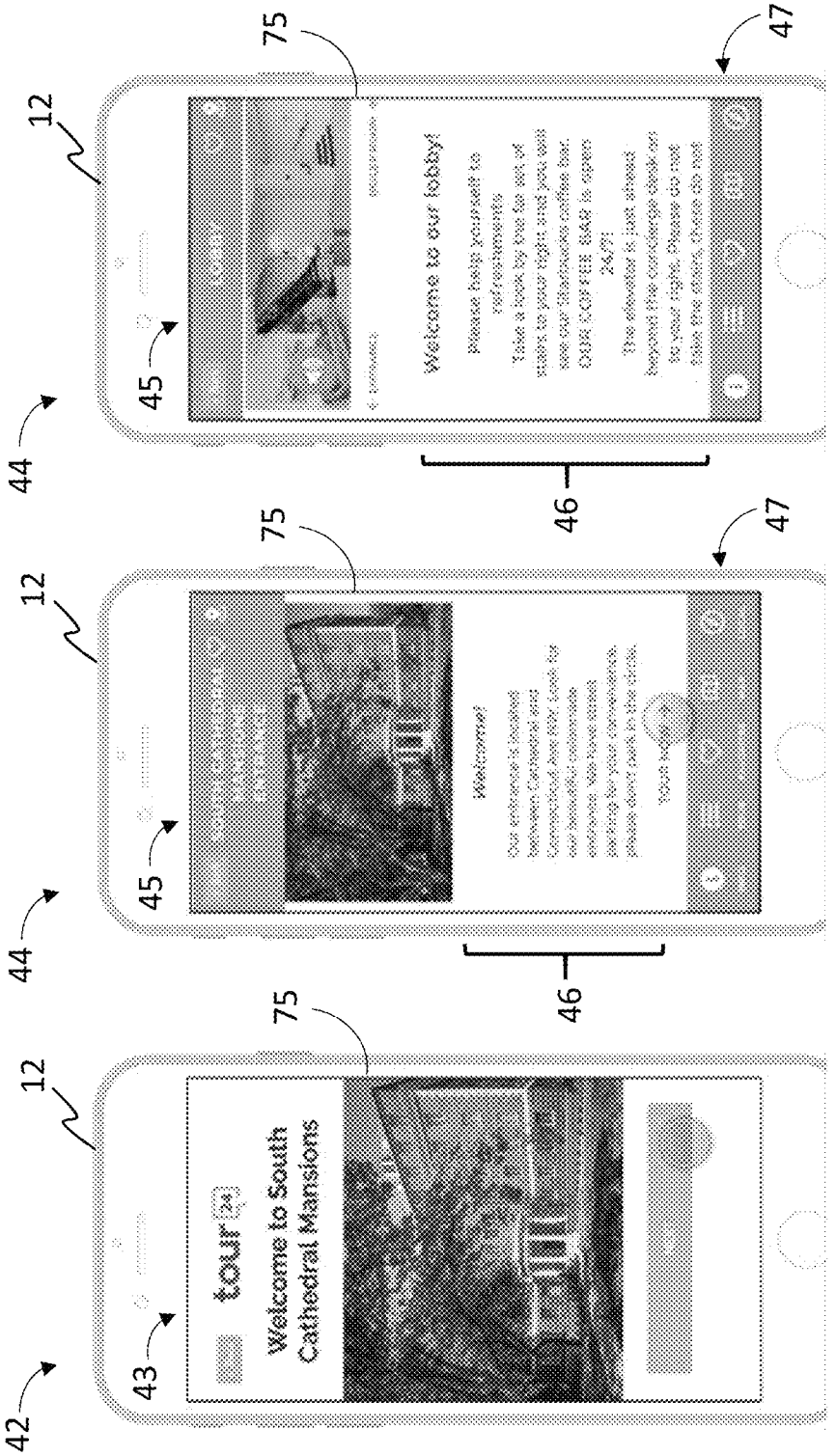

FIG. 26

FIG. 27

FIG. 28

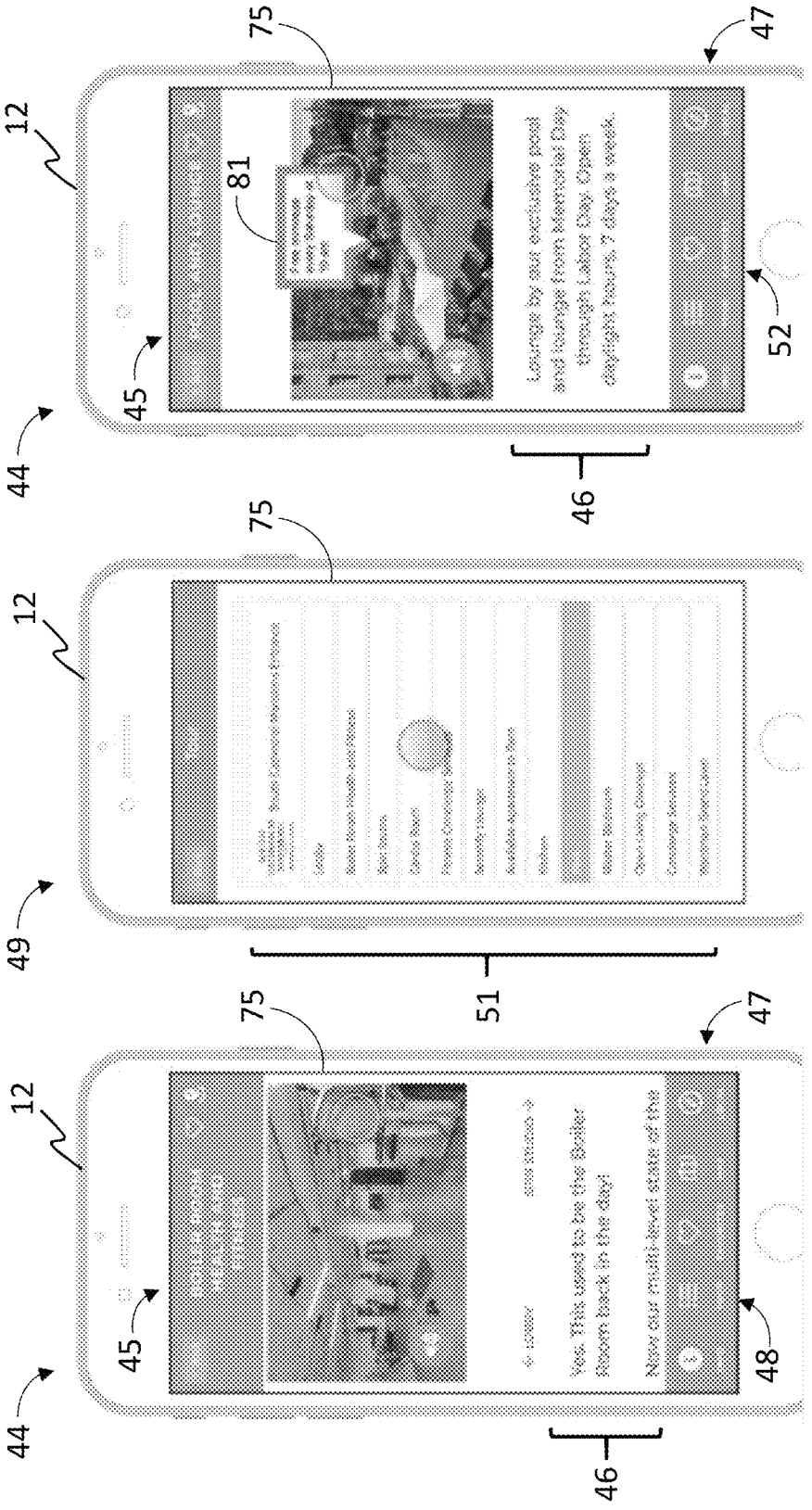

FIG. 31

FIG. 30

FIG. 29

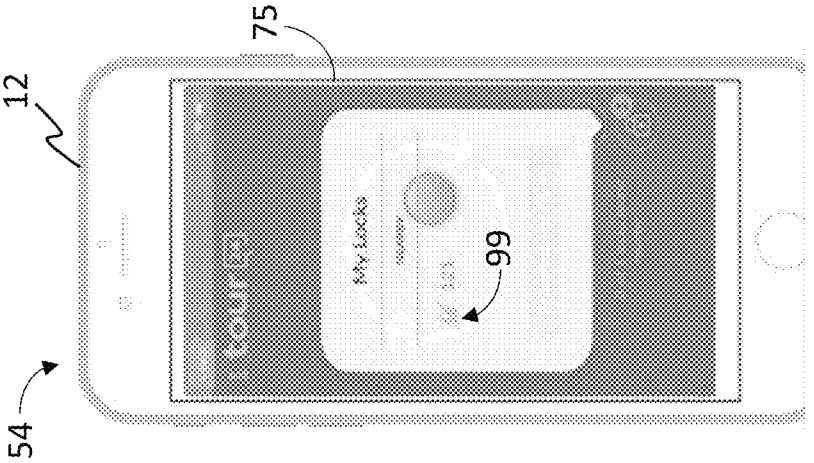

FIG. 33

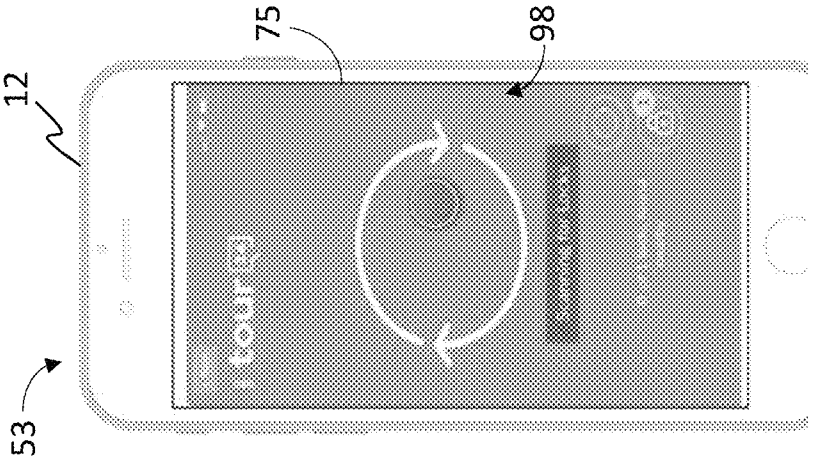

FIG. 32

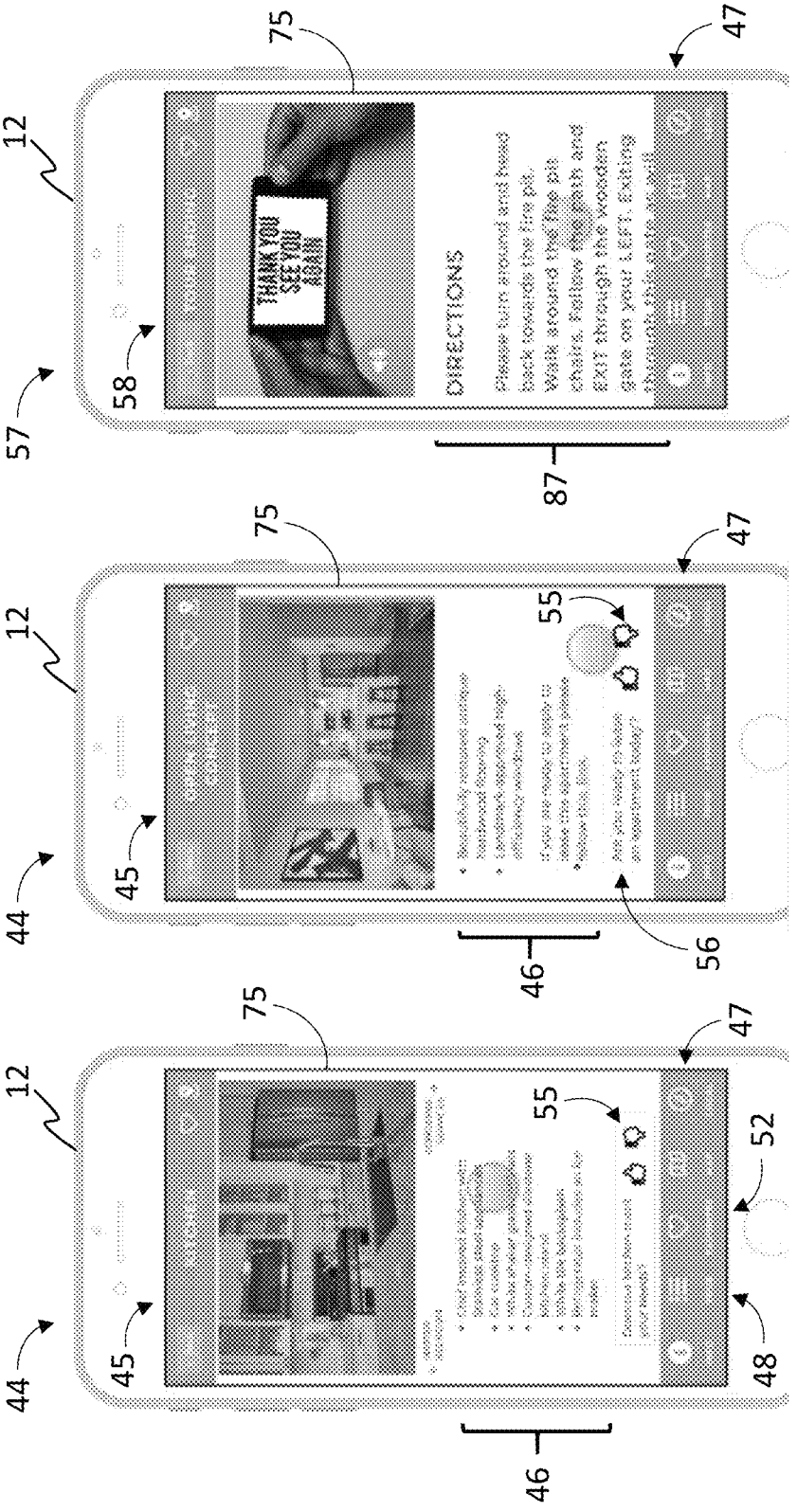

FIG. 34

FIG. 35

FIG. 36

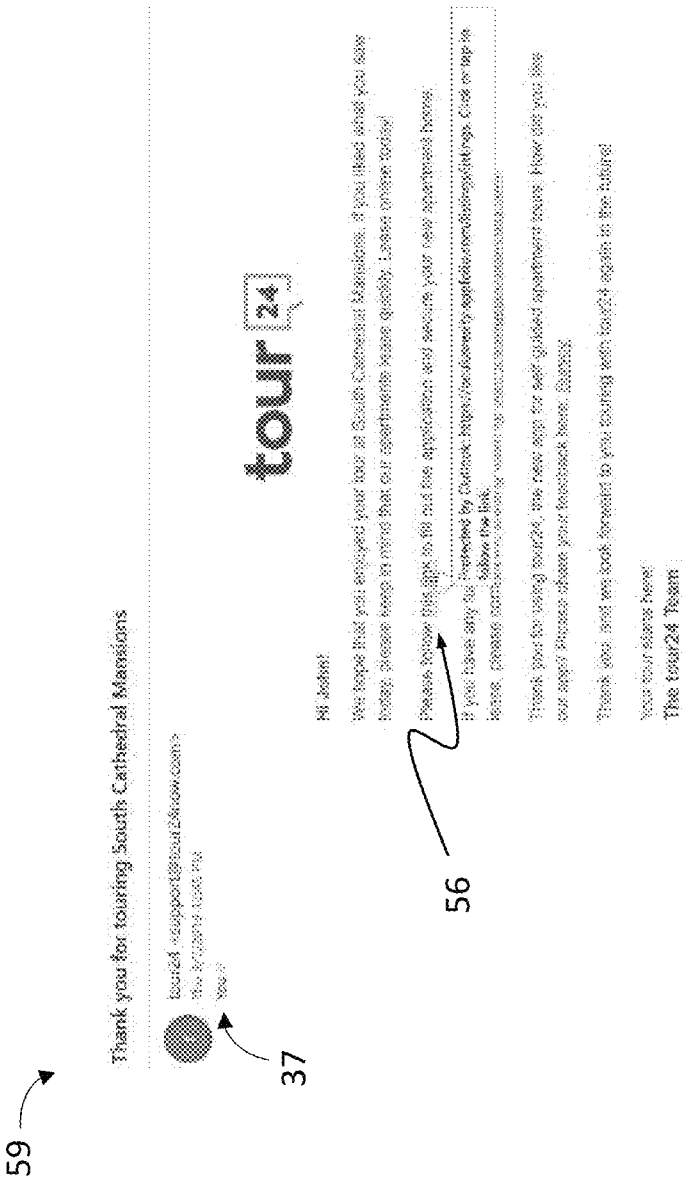
59
Thank you for touring South Cathedral Mansions
37
tour 24
Hi John!
56

FIG. 37

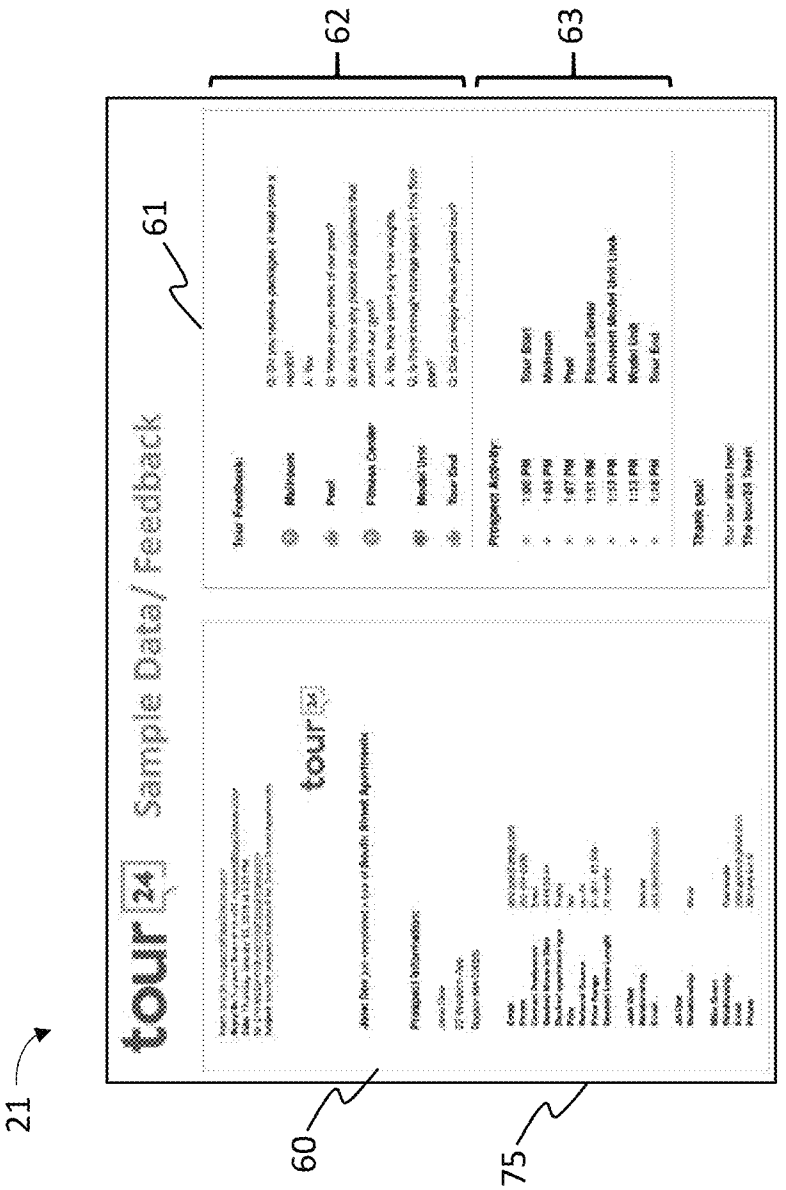

FIG. 38

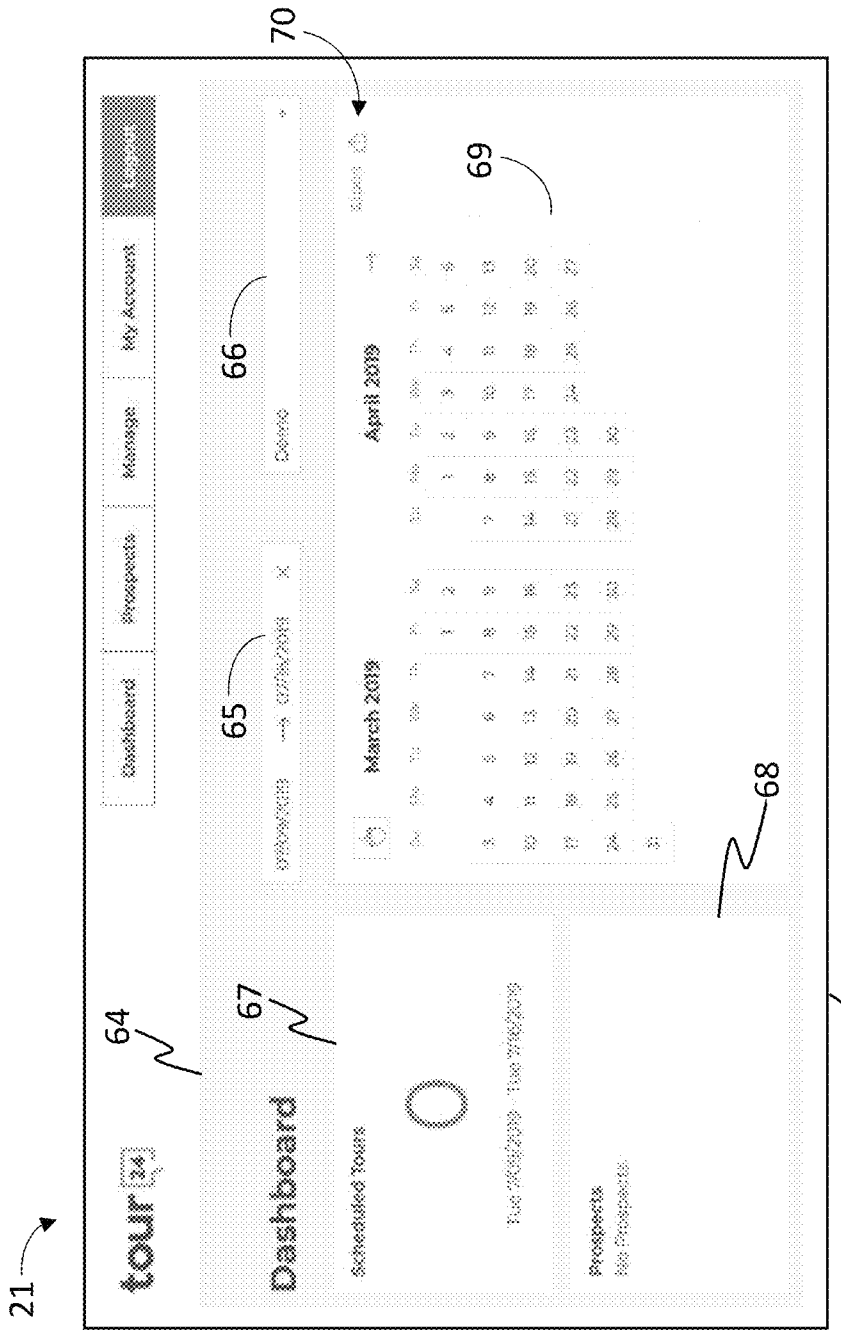
21
64
67
65
66
70
69
68
75
tour
Dashboard
Scheduled Tours
0
Prospects
Dashboard
Prospects
Manage
My Account
March 2019
April 2019

FIG. 39

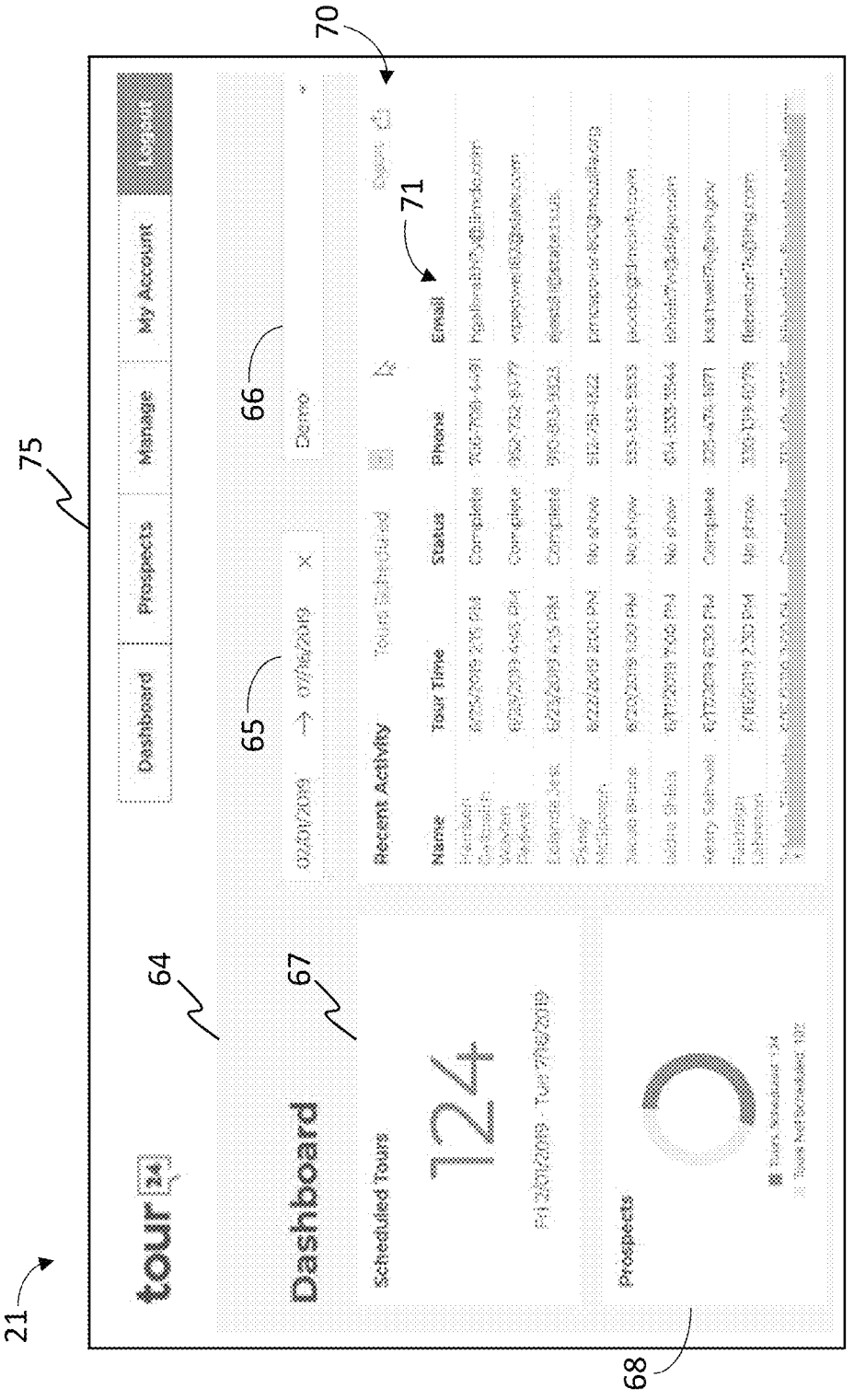
21
75
64
67
65
66
70
71
68
tour
Dashboard
Prospects
Manage
My Account
Dashboard
Scheduled Tours
124
Recent Activity
Name
Tour Time
Status
Phone
Email
Prospects

FIG. 40

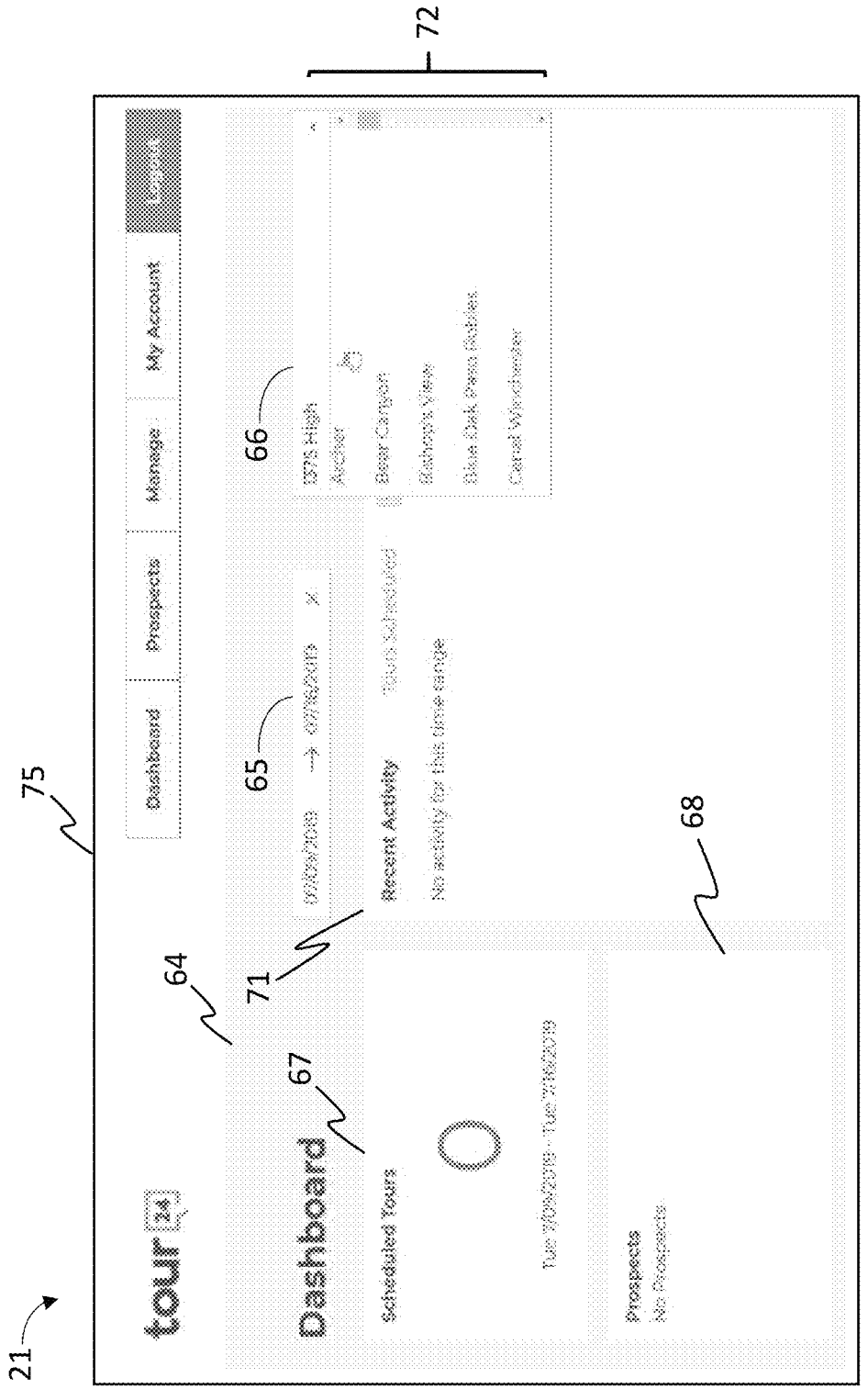
21
75
72
tour
Dashboard
Prospects
Manage
My Account
Logout
Dashboard
Scheduled Tours
Prospects
No Prospects
Recent Activity
No activity for this time range
Tours Scheduled
Archer
Bear Canyon
Bishop's View
Blue Oak Pass Robles
Canal Winchester
64
65
66
67
68
71

FIG. 41

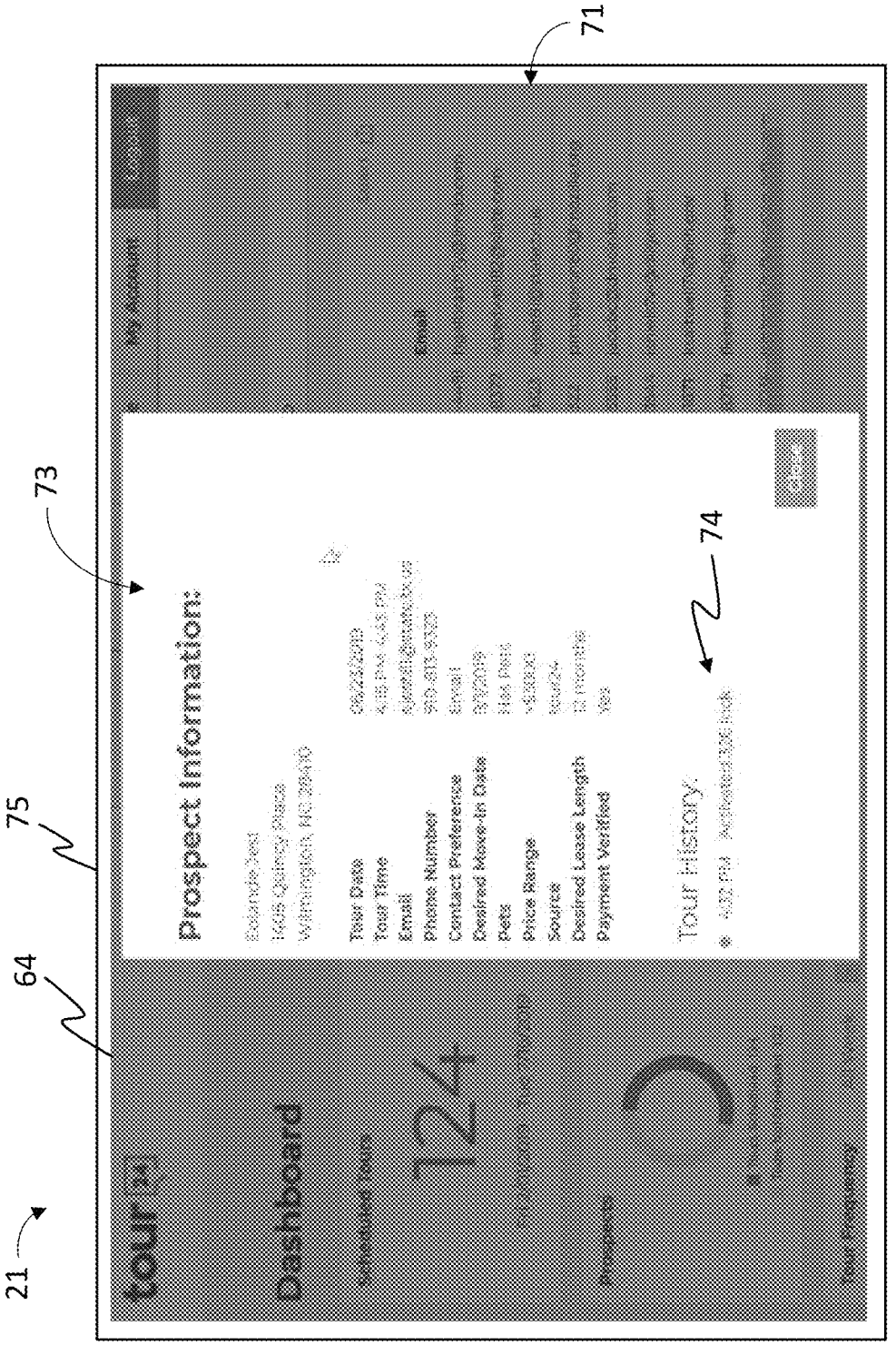
71
73
75
64
21
Prospect Information:
Tour Date
Tour Time
Email
Phone Number
Contact Preference
Desired Move-In Date
Pets
Price Range
Source
Desired Lease Length
Payment Verified
Tour History:
Dashboard

FIG. 42

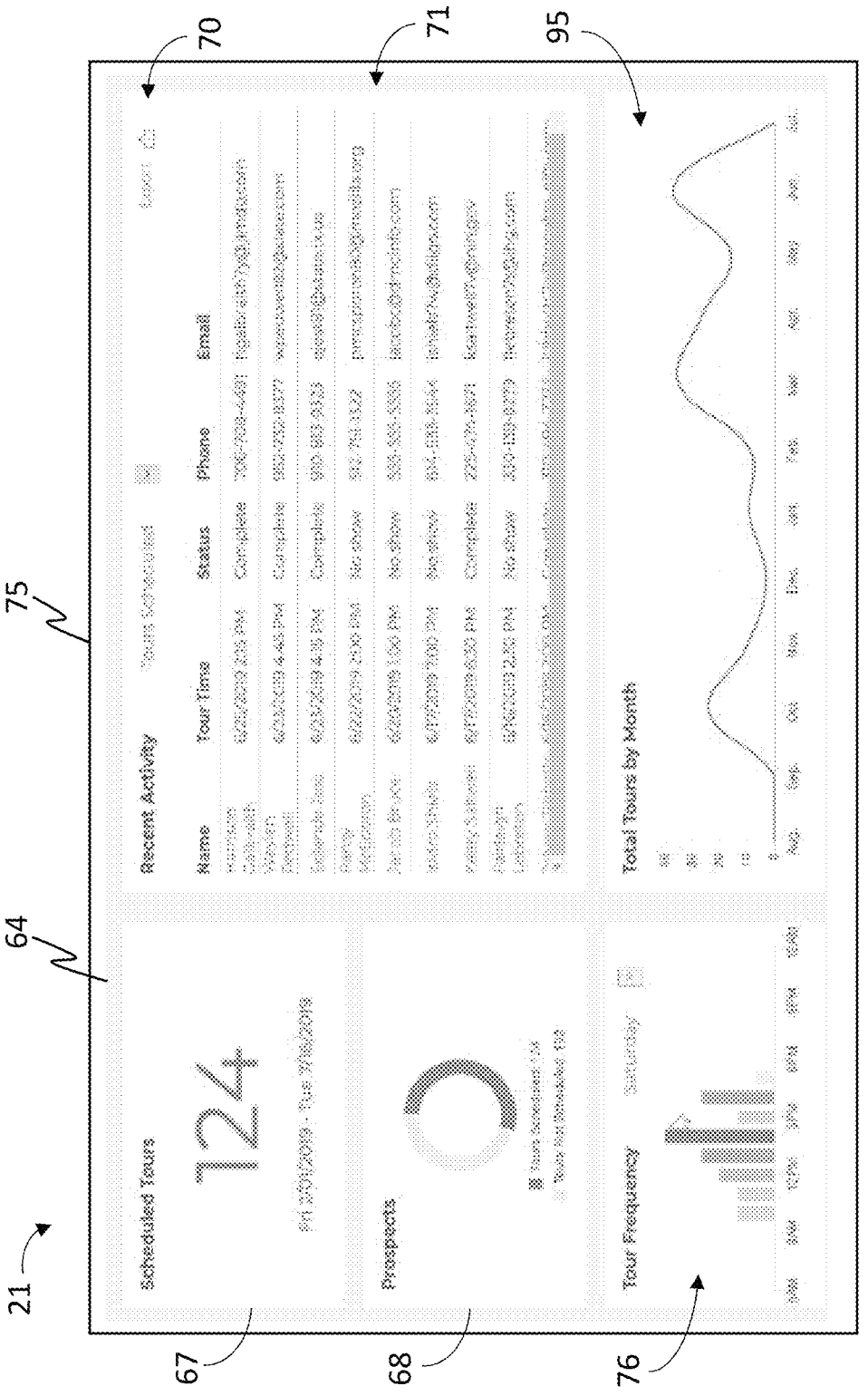
21
64
67
68
70
71
75
76
95
Scheduled Tours
124
Prospects
Recent Activity
Tour Frequency
Total Tours by Month

FIG. 43

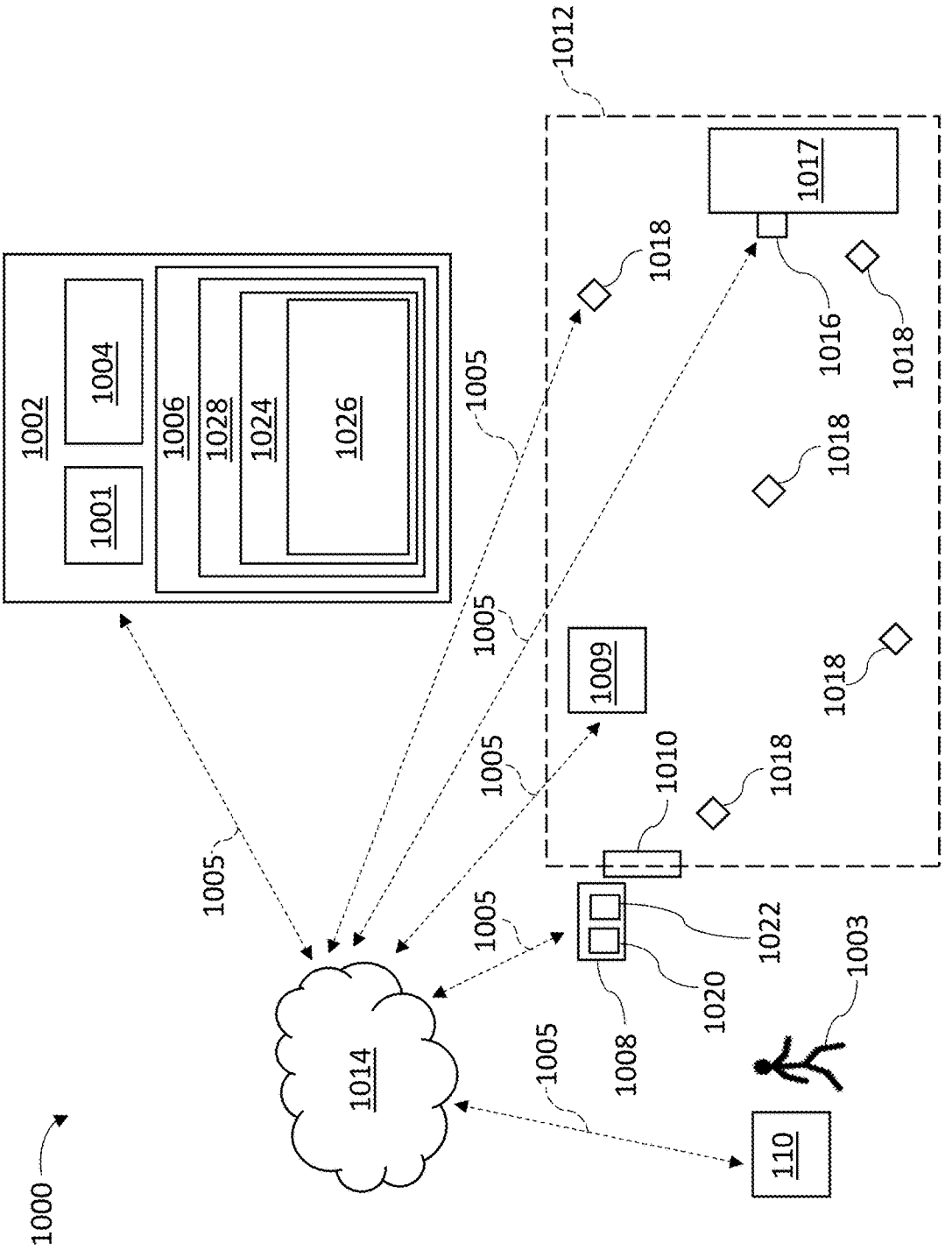
1000
1002
1001
1004
1006
1028
1024
1026
1005
1012
1017
1018
1016
1018
1018
1018
1009
1010
1018
1022
1020
1008
1003
1014
110

FIG. 44

SYSTEMS AND METHODS FOR SCHEDULING AND PERFORMING SELF-GUIDED TOURS OF MULTI-UNIT RESIDENTIAL FACILITIES

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of, and priority to, U.S. Provisional Patent Application No. 62/701,100 (filed Jul. 20, 2018), which is incorporated herein by reference in its entirety.

BACKGROUND

Apartment complexes provide tours usually during business hours. These tours normally involve leasing agents or representatives being available to show prospective renters around apartment units. Unfortunately, people who work during traditional leasing office hours or odd hours have a hard time touring apartments since a leasing agent should be present to provide entry and monitor prospective renters during tours. Leasing agents usually answer questions and provide additional information that prospective renters may have during a tour. So, if leasing agents do not work outside of traditional hours, properties miss lease opportunities. Additionally, smaller properties and properties with no on-site management at all are at a disadvantage.

SUMMARY

One aspect of the disclosure provides a method for scheduling a self-guided tour (SGT) of a multi-unit residential facility (MURF). The method includes receiving, at a tour server, guest information from a client device. The method includes receiving, at a tour server, payment information from a client device. The method includes determining, at the tour server, whether the payment information is valid. The method includes receiving, at the tour server, identification (ID) information from the client device. The method includes determining, at the tour server, whether the ID information is valid. The method includes receiving, at the tour server, a tour time for the SGT from the client device. The method includes providing, by the tour server, a confirmation including the tour time to the client device.

Another aspect of the disclosure provides a method for performing an SGT of a MURF. The method includes sending, by a tour server, property access information to a client device. The method includes receiving, by a tour server, a trigger from a property access control system indicating that a user of the client device has entered the MURF. The method includes providing, by the tour server, tour directions for the MURF to the client device. The method includes receiving, by the tour server, tour data for the SGT. The method includes sending, by the tour server, a confirmation to the client device after the SGT is completed.

Yet another aspect of the invention provides a system for performing an SGT of a MURF. The MURF includes a tour access control system positioned at an entrance thereof. The system includes a tour server. The tour server includes one or more processors in communication with one or more memory devices. The tour server is in communication with the tour access control system. The tour server is configured to: send property access information to a client device; receive a trigger from the tour access control system indicating that a user of the client device has entered the MURF; provide tour directions for the MURF to the client device; receive tour data for the SGT; and send a confirmation to the client device after the SGT is completed.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates a system for apartment touring according to an embodiment of the disclosure;

FIG. **2** is a flow diagram for scheduling and performing a tour according to an embodiment of the disclosure;

FIG. **3** is a flow diagram for scheduling a tour according to an embodiment of the disclosure;

FIG. **4** is a flow diagram for performing a tour according to an embodiment of the disclosure;

FIG. **5** illustrates an example flow for obtaining information according to an embodiment of the disclosure;

FIG. **6** illustrates an example flow for obtaining information according to an embodiment of the disclosure;

FIG. **7** illustrates an example flow for obtaining information according to an embodiment of the disclosure;

FIG. **8** illustrates an example flow for obtaining information according to an embodiment of the disclosure;

FIGS. **9**A-**9**D illustrate several views of an example tour access control system according to an embodiment of the disclosure;

FIGS. **10-23** illustrate implementation examples of the method for scheduling a self-guided tour shown in FIG. **3**;

FIGS. **24-37** illustrate implementation examples of the method for performing a self-guided tour shown in FIG. **4**;

FIGS. **38-43** illustrate various features of a web portal which enable the owner and/or management of the multi-unit residential facility (MURF) to view, analyze, and otherwise manipulate data received from users of the client device for the self-guided tours scheduled and/or performed at the MURF; and

FIG. **44** illustrates a system for performing a self-guided tour according to an embodiment of the disclosure.

DETAILED DESCRIPTION

Embodiments of the disclosure provide a system and method for scheduling and performing self-guided apartment tours. With the embodiments, individuals working at off-periods or unable to make scheduled tours performed with a leasing agent during normal business hours can still tour an apartment complex and/or unit. The embodiments will help reduce industry average response time of 39 hours, which indicates that it takes on average 39 hours between an individual expressing interest in an apartment unit to the individual being able to view the apartment unit. This slow response time may contribute to low service rate of the industry where 42% of leads receive no response at all and 40% of leads abandoning their search after 6 hours. With the embodiments, by cutting down industry response time and providing individuals with more flexibility, more people can view apartment units during their own time and not at an inflexible schedule of a leasing agent.

Embodiments of the disclosure provide systems and methods for sharing private sensor data. The embodiments address several obstacles, such as working within a secure ecosystem to manage sensitive information of potential tenants and controlling data streams. These provide the advantages of making apartment units available for viewing without compromising private network security where sensitive information reside.

FIG. **1** illustrates a system for sharing sensor measurements according to an embodiment of the disclosure. The system includes tour management servers **102**, tour access

control system **104**, one or more third party integration systems **106**, property management systems **108**, and one or more client devices **110**. In some embodiments, the system includes one or more databases **112** for data storage by the tour management servers **102**.

The client device(s) **110** are computing devices used by a prospect or individual interested in touring an apartment complex. For generality, the singular form will be used for the client device(s) **110**, but the use of the singular form is not a limitation to one client device. Examples of computing devices for the client device **110** include mobile devices, for example, a smartphone, a tablet, a phablet, a smart watch, and so on. Computing devices may also include larger devices, for example, a laptop computer, a desktop computer, and so on.

The tour management servers **102** include one or more computing servers and devices for scheduling and performing apartment tours according to an embodiment of the disclosure. The tour management servers **102** connect the property management systems **108** to the third party integration systems **106** and/or to the tour access control system **104** so that a prospect using the client device **110** can schedule and perform a self-guided tour at certain properties.

The tour access control system **104** includes one or more devices for providing access to a property to be toured. The tour access control system **104** interfaces with the client device **110** to allow a prospect access to the property.

Third party integration systems **106** include one or more computing servers that provide services to the tour management servers **102**. For example, third party integration systems **106** can be used for identity verification, payment method verification, monitoring location of prospects as they move from one location to another within a property, etc.

Property management systems **108** include one or more computing servers and/or devices owned by a property manager. The property manager may offer one or more services that can be adapted for use by the tour management servers **102**. For example, an integrated calendar used by the property management systems **108** can be shared with the tour management servers **102** for tracking and/or limiting self-guided touring schedules.

FIG. **2** is a flow diagram for scheduling and performing a tour according to an embodiment of the disclosure. Initial **202** indicates an initial flow where a prospect registers with the tour management servers **102** and picks a time for performing a self-guided or a lease-agent guided tour. Tour **204** indicates a process flow on how the tour management servers **102** and the various entities of FIG. **1** interact during a self-guided tour by the prospect. Follow-up **206** indicates a process of obtaining feedback from the prospect and/or a property manager.

FIG. **3** is a flow diagram for scheduling a tour according to an embodiment of the disclosure. FIG. **3** corresponds to the initial flow represented by initial **202** in FIG. **2**. FIG. **3** illustrates steps taken by tour management servers in relation to other components, e.g., the client device **302**, the property management systems **310**, and third party integration systems such as payment provider **316** and ID verification provider **322**.

At step **308**, the tour management servers can collect guest information from the client device **302** either directly or indirectly. That is, the client device **302** can provide guest information to the tour management servers through a referral **304** or directly **306**. A referral **304** includes third party websites or mobile platforms not hosted by the tour management servers. For example, these third party websites can include social media pages, web-search advertisement campaigns, property websites, internet listing service (ILS), etc. A direct **306** method of collecting guest information is through a website or mobile application that is hosted on the tour management servers.

The guest information collected at step **308** can be curated by the property management systems **310**. That is, the property management systems **310** can provide configuration for which guest information to collect and/or which services, floorplans, apartment units, etc., are available. Guest information that may be collected include a guest's first and last name, email and phone number, contact preference, current address, desired move-in date, floorplan preference, referral information on how the guest came to know about the property, preference for self-guided tour, pet or type of pet, price range, desired lease length, etc. Once the tour management server collects the guest information from the client device **302**, the tour management server can send the collected guest information to the property management systems **310**.

At step **312**, the tour management servers determine whether the user of the client device **302** wants a self-guided tour based on the guest information collected at step **308**. If a self-guided tour is not selected, then the tour management server obtains tour times from the client device at step **302**.

If a self-guided tour is selected, then at step **314**, the tour management servers collect payment information from the client device **302**. The payment information may include name on a credit or debit card, credit or debit card number, credit or debit card expiration date, and credit or debit card validation value (CVV) code. In some embodiments, the payment information may also include bank account and routing numbers. The tour management servers forward the obtained payment information to a payment provider **316** which verifies and stores the payment information. Payment information may be used by the tour management servers in conjunction with techniques for validation of user identity, as described in greater detail below. In some embodiments, collection of the payment information at step **314** for validation of user identity is not also used to collect an actual payment from the user by way of the payment information he or she provides at step **314**.

At step **318**, the tour management servers determine whether the payment information obtained at step **314** is valid. In an embodiment, the payment provider **316** provides a token to the tour management servers indicating the verification result. If the payment information is valid, the tour management servers associate the token with the guest in case charges are to be made in connection to services offered to the guest.

If the payment is valid, then the tour management servers obtain identification information for the guest at step **320**, but if the payment is not valid, then the tour management servers reobtain the payment information at step **314**. At step **320**, a picture of the guest's identification card or passport is obtained and a current picture of the guest is obtained. The tour management servers provide this information to an ID verification provider **322** that then provides the tour management servers with an ID verification result.

At step **324**, if the ID verification result is valid, then the tour management servers obtain tour time at step **326**, but if the ID verification fails, then the tour management servers attempt to collect ID information at step **320**.

At step **326**, the tour management servers obtain tour times from the client device **302**. In an embodiment, the available tour times can be separated into tour times for self-guided tours and tour times for leasing agent-guided

tours. In an embodiment, only available times are shown and the available times are updated in real-time, with a configurational record stored in a relational database, e.g., database **112**. The relational database can be updated by the property management systems **310** as timeslots for touring become available or unavailable. The tour management servers can query available tour times from calendars of the property management systems **310** and submit selected tour times to the calendars.

At step **328**, the tour management systems **310** provide confirmations to the property management systems **310** and the client device **302**. The confirmation to the property management systems **310** can include some of the guest information with the guest's selected tour time. The confirmation to the client device **302** can be a text or email that provides tour appointment details, e.g., directions to the property to be toured, a frequently asked questions for the property, and a frequently asked questions for self-guided tour procedures.

FIG. **4** is a flow diagram for performing a tour according to an embodiment of the disclosure. FIG. **4** corresponds to steps represented by tour **204** in FIG. **2**. At step **404**, the tour management servers send property access information to the client device **402**. The property access information can be sent to the client device **402** within a predetermined time before the self-guided tour. For example, the property access information can be sent to the client device **402** 30 minutes prior to the scheduled time for the self-guided tour. The property access information can be sent to the prospect or guest via a preferred communication method indicated in guest information when the self-guided tour was scheduled. Examples of property access information include access codes for a keypad, a Quick Response (QR) code, a barcode, system credentials for accessing internet of things (IoT) devices, etc.

At step **412**, the tour management servers provide the client device **402** with tour directions. Tour directions can be provided through a mobile application on the client device **402** where a tour path is highlighted and directions are provided to navigate the tour path. Additionally, tour directions can include one or more amenities associated with the unit being toured.

Provision of the tour directions to the client device **402** can be prompted by receiving an unlock verification from the tour access control system **406** or third party integration systems **408**. For example, the client device **402** uses a barcode or QR code on the tour access control system **406** to unlock a door to the unit being toured. The tour access control system **406** then provides information about the code being used to unlock the door to the tour management servers. From that information, the tour management servers can pull information regarding the unit being toured and provide tour directions to the client device **402**. In some embodiments, the tour directions are provided to the client device **402** based on a tour schedule.

At step **414**, the tour management servers receive tour data from the client device **402**. The tour management servers can also receive tour data from the property management systems **410** and/or third party integration systems **408**. Tour data includes, e.g., a photograph or picture of the guest at the time of entry of the unit to be toured. Third party integration systems **408** can include security cameras, web cameras, etc., that provide the photograph of the guest to the tour management servers.

Tour data can also include location information from the client device **402** inquiring about amenities associated with the unit being toured. For example, the client device **402** can scan one or more wireless beacons, e.g., bluetooth beacons, to obtain information from the tour management servers regarding specific information indicated by a specific beacon. Tour data can include location of the client device **402** whereby the beacons interact with the client device **402** to provide approximate location of the client device **402** so that the tour management servers can use this information to determine a path that the guest took while touring the unit.

Tour data can include feedback information on specific amenities and features where the guest is able to provide through the client device **402** as he is touring the unit, whether an amenity meets his needs and/or wants. The feedback can be a rating from 0 to 5.

Interaction between steps **412** and **414** occur throughout the tour where tour data is obtained from the client device **402** prompting the tour management server to continue providing tour directions to the client device **402**. At some point, the guest can end the tour through the mobile application running on the client device **402**.

At step **416**, once the tour is ended, the guest can be guided back to the entrance, presented with a thank you message, and asked to provide feedback on the guided tour, the unit that was toured, and any other information. If the guest is ready to lease, a property application is provided to the client device **402** by the tour management servers through email, short message service (SMS), etc., and if not, a follow-up process, e.g., follow-up **206**, is performed. The tour management servers also provide the guest's feedback information to the property management systems **410** at step **416**.

The follow-up **206** can include providing a survey to the guest to obtain more information. The survey can be sent to the guest to inquire how likely the guest would use the self-guided tour in the future or whether the guest will refer a friend. The survey can be sent to the guest through a social media prompt. The follow-up **206** can also include a survey sent to a leasing office of the unit that was toured. The survey can be sent to the leasing office to inquire how information received about the self-guided tour can be rated and the survey can also include various statistics on how many guests opted to use the self-guided tour. The follow-up **206** can also involve polling property management systems to determine whether any self-guided tour leads converted into leases.

The follow-up **206** can also include sending communication to the guest inquiring whether the guest has any questions. The communication may include the name of a leasing agent for the guest to contact. The communication may include a lease application or a link to the lease application. The communication involved in the follow-up **206** can be provided in time intervals. For example, asking for questions, introducing a leasing agent, and offering a lease application can be performed in the first 24 hours, and if the guest is still not decided on whether to sign a lease, then after 48 hours, more questions along the lines of whether the guest is looking elsewhere or whether the guest has made a decision can be sent.

FIG. **5** illustrates an example flow for obtaining information according to an embodiment of the disclosure. Item **502** indicates a status bar that includes four steps: Contact info, Pre-qualify, Schedule Tour, and Tour confirmation. The page shown in FIG. **5** shows example guest information that can be collected on the Contact info page. These include first name, last name, email address, phone number, move date, and unit type of interest. A submit button **504** can be provided for submitting the guest information collected. A sample photo **506** can be provided as well.

FIG. **6** illustrates an example flow for obtaining information according to an embodiment of the disclosure. Once guest information has been obtained, a status of the Contact info can be indicated as complete with a check mark **602** on a next page. The page shown in FIG. **6** is used to obtain payment and ID information, e.g., driver's license and issuing state, card number, and full name printed on the card.

FIG. **7** illustrates an example flow for obtaining information according to an embodiment of the disclosure. In FIG. **7**, once a guest passes the Pre-qualify stage, a check mark **702** appears on the Pre-qualify box and the guest is allowed to schedule a tour. FIG. **7** shows that the guest can choose a requested date and time.

FIG. **8** illustrates an example flow for obtaining information according to an embodiment of the disclosure. After scheduling a tour, then a confirmation is provided to the guest. The confirmation can include a bar code **802** that is sent to the guest.

FIGS. **9**A-**9**D illustrate several views of an example tour access control system according to an embodiment of the disclosure. FIG. **9**A illustrates a perspective view, FIG. **9**B illustrates a front view, FIG. **9**C illustrates a side view, and FIG. **9**D illustrates a view of the interior of the tour access control system. The tour access control system can have multiple methods for user access. For example, a guest can access the system using a barcode, e.g., via the scanner **906** configured to scan the barcode. The guest can access the system using key codes on an input device of the tour access control system, e.g., using a touchscreen **904** of the tour access control system. The tour access control system can also be accessed remotely via the tour management servers or an administrator. In FIG. **9**D, the tour access control system can interface with an Ethernet port on a wall to provide remote access to the tour access control system. In addition, the tour management servers or an administrator can utilize video or intercom to aid in remotely activating a door managed by the tour access control system. The tour access control system can include a camera **902** for capturing photographs and/or video. In some embodiments, an emergency over-ride is provided for opening the door.

The tour access control system can be surface wall-mounted and can include a touchscreen monitor, a computer, a video intercom, a barcode scanner, a still camera, and so on. The tour access control system has access to power, an internet connection, e.g., Ethernet or wireless internet, and a locking mechanism. The tour access control system can allow a door to be locked or unlocked remotely. A wall-mounted tour access control system is provided in FIGS. **9**C-**9**D where an opening on a back of a housing of the tour access control system allows access to power and internet connection. Additionally, in FIG. **9**D, a door latch wiring pass-through is accessible to the tour access control system for sending electrical signals to unlock a door managed by the tour access control system.

In some embodiments, the tour access control system sends an unlock signal to a door, and the door remains unlocked for a predetermined amount of time. In some embodiments, the tour access control system sends an unlock signal to a door, and the door remains in an unlocked state until a user opens the door. Once the door is closed, the door is returned to a locked state. In some embodiments, the tour access control system receives signals indicating whether a door managed by the tour access control system is in a locked state, an unlocked state, and/or whether the door has been opened by a user after being placed in an unlocked state.

In some embodiments, users or guests authorized to use the tour access control system are managed by the property management systems **108** and/or third party integration systems **106** via the tour management servers **102**. The tour management servers **102** can maintain a list of users authorized to enter a unit via the tour access control system. The list can be updated and managed by the property management systems **108** and the third party integration systems **106** to add and remove authorized users.

FIGS. **10**-**23** illustrate implementation examples of the method for scheduling a self-guided tour shown and described above with reference to FIG. **3**, according to embodiments of the disclosure. In one embodiment, receiving **308** guest information from the client device **110** includes receiving, by the tour server (e.g., one or more tour management servers **102**), an indication of interest (IOI) for the self-guided tour (SGT) from a user of the client device **110**. The IOI may be received by the tour server via the client device **110** user clicking on a website link. As shown in FIG. **10**, a website **1** of a multi-unit residential facility (e.g., a luxury apartment complex property) is findable on the Internet by the user of the client device. The user browses to and views (e.g., on a display **75** of client device **110**) the website **1** to learn more about the property. A website link **2** (e.g., labeled "tour24") present in one or more pages of the property's website **1** is present for the user to click on to learn about a self-guided tour for the property. Clicking on the website link **2** will cause the IOI to be transmitted to, and received by, the tour server as an IOI signal.

Referring to FIG. **11**, the IOI for the SGT may be received by the tour server as an IOI signal via the user scanning a QR code **4** or a barcode using the client device. In one example, the QR code **4** is present on a physical printed sign **3** such as may be found on a door or window of a leasing office of a multi-unit residential facility (e.g., apartment complex). In another example, the printed sign **3** having the QR code **4** or barcode may be hanging from a door knob of the leasing office.

In another embodiment, the website link **2** for a user to provide their IOI for the self-guided tour may be provided on any website where the property is advertised on the Internet. Similarly, the QR code **4** or barcode for scanning may be placed in association with the property in any print media where the property is advertised. The owner and/or management of the property may utilize a web inventory console window **5** provided to a display device **75** visible to the property owner and/or property management, as shown in FIG. **12**. Window **5** may list all the websites where the property is advertised on the Internet, and the website link **2** may be dragged and dropped, for instance, onto each of the listed websites. Doing so activates the website link **2** for the particular website(s) such that the website link **2** will be visible in those website(s). Such websites may include an Internet Listing Service (ILS) which is visible as an ILS window **6**, as shown in FIG. **13**. User may, in the course of looking for an apartment, for example, use his or her client device **110** to browse to the ILS window **6** and thereby view it on the display **75** of the client device **110**. If the property owner and/or management has authorized the website link **2** to be visible in the window **6**, the use may click on it to provide their IOI for the self-guided tour of the property.

Additional or alternative techniques for enabling users to provide their IOI for a self-guided tour of a multi-unit residential facility may be understood by persons having ordinary skill in the art, and such other techniques (e.g., providing the website link **2** in an email to a user who has

provided their email address to the property owner and/or management) are meant to be included within the scope of this disclosure. No matter how the IOI may be provided to, and received by, the tour server, the process step of receiving **308** guest information from the client device **110** also includes causing, by the tour server, a self-guided tour registration window to be displayed to the user of the client device **110** (e.g., via the display **75** of the client device). In an example, the tour registration server causes the registration window to be displayed to the user in response to the tour server receiving the IOI by one or more of the techniques described above.

As shown in FIG. **14**, the registration window **7** includes a plurality of data fields **9** for the user of the client device **110** to enter information such as name, address, email, telephone number(s) and additional information related to what they are looking for in an apartment (e.g., rental price range, whether they have a pet, etc.). If the user will have a roommate, then he or she may click on or press an add button **10** in order to provide the same or similar information for the at least a second person. The registration window **7** may include one or more photos **8** of the property.

Upon completion of entry of information by the user in the registration window **7** (e.g., by hitting enter or pressing a "done" or "continue" button on the registration window **7**), the guest information so entered is transmitted to, and received by, the tour server. In one embodiment, receiving **320** identification (ID) information from the client device **110** includes, in response to receiving the guest information (and/or the payment information) from the client device, causing, by the tour server, one or more ID information request windows to be displayed to a user of the client device **110** (e.g., via the display **75** of a smartphone **12** client device), as shown in FIGS. **15-17**. A first ID information request window **11** provides options for using government-issued ID cards or documents including a passport, a driver's license, or an identity card. A second ID information request window **13** provides an interface to use the client device **110** camera to take a photo of at least a first side (e.g., the front) of the government-issued ID card or document selected from the first window **11**. A third ID information request window **14** provides an interface to use the client device **110** camera to take a self-portrait ("selfie"). One or more of the first **11**, second **13**, and third **14** ID information request windows may include instructions for the user to use a camera of the client device **110** to: take the photo of a first side of a government-issued ID card or document using the client device, and/or take the selfie. In an example, the at least a first side of the government-issued ID card or document includes: a portrait of, and a name of, a person to whom the government-issued ID card or document was issued. In another example, the one or more ID information request windows (e.g., second ID information request window **13**) further includes instructions for the user to use the camera of the client device **110** to take a photo of a second side of the government-issued ID card or document.

In one embodiment, determining **324** whether the ID information is valid includes causing, by the tour server, the ID information to be transmitted to an ID verification provider for validation. In an example, the tour server transmits the ID information to the ID verification provider in response to receiving the ID information (e.g., the user hits enter or presses a "done" or "continue" button on the ID information request window(s) (e.g., **11**, **13**, and/or **14**)). The ID verification provider receives the selfie and the photo of the at least a first side of the government-issued ID. The selfie is compared to the portrait on the government-issued ID and, optionally, the guest information provided in the registration window **7** is matched to a database associated with the government-issued ID. The ID verification provider then transmits, and the tour server receives, a validation status message, which provides an indication of whether the user's ID information is valid (e.g., a bona fide match—a positive ID validation status message) or invalid (e.g., use of a fake ID is suspected—a negative ID validation status message).

In an embodiment, if a positive validation status message is received by the tour server, then the tour server enables the user of the client device **110** to continue with scheduling the SGT for a current session. Otherwise, for a negative validation status message received by the tour server from the ID verification provider, the tour server disables the user of the client device **110** from continuing with scheduling the SGT for the current session. In one example, the tour server may allow the user to begin again by displaying, for instance, an error message and a "try again" button. In another example, the tour server performs a quality check on the photo(s) of the government-issued ID and the selfie prior to transmitting this ID information to the ID verification provider so as to reduce the chance of error on the part of the user during data collection via the camera of the client device. In such examples, upon receiving the negative validation status message, the tour server may refuse to allow the user to try again for a specified period of time, or tour server may ban the user from ever trying to schedule a self-guided tour.

In one embodiment, receiving **314** payment information from the client device **110** includes, in response to receiving the guest information (and/or the ID information) from the client device, causing, by the tour server, a payment information window **15** to be displayed to a user of the client device **110** (e.g., on the display **75**), as shown in FIG. **18**. The payment information window **15** includes a plurality of credit card data fields **16** for the user to enter payment information into. In an example, the user may instead enter debit card data using the same fields **16**.

In one embodiment, determining **318** whether the payment information is valid includes causing, by the tour server, the payment information to be transmitted to a payment provider for validity verification. In an example, the tour server transmits the payment information to the payment provider in response to receiving the payment information (e.g., the user hits enter or presses a "done" or "continue" button on the payment information window **15**). The payment provider receives the payment information, and processes it against, for example, a database associated with credit and/or debit card account information. The payment provider then transmits, and the tour server receives, a verification status message regarding the payment information and the identity attached to it. The verification status message provides an indication of whether the user's payment information is valid (e.g., a bona fide match—a positive verification status message) or invalid (e.g., a closed account—a negative verification status message).

In an embodiment, if a positive verification status message is received by the tour server, then the tour server enables the user of the client device **110** to continue with scheduling the SGT for a current session. Otherwise, for a negative verification status message received by the tour server from the ID verification provider, the tour server disables the user of the client device **110** from continuing with scheduling the SGT for the current session. In one example, the tour server may allow the user to begin again

by displaying, for instance, an error message and a "try again" button. In another example, the tour server, upon receiving the negative verification status message, may refuse to allow the user to try again for a specified period of time, or tour server may ban the user from ever trying to schedule a self-guided tour.

In one embodiment, the tour server receives the payment information prior to receiving the ID information, and tour server transmits the ID information to the ID verification provider in response to receiving the payment information, or in response to receiving both the payment information and the ID information. In another embodiment, the tour server receives the ID information prior to receiving the payment information, and tour server transmits the payment information to the payment provider in response to receiving the ID information, or in response to receiving both the ID information and the payment information. In other words, steps **314** and **318** may be performed in the disclosed method before steps **320** and **324** are performed, or, alternatively, steps **314** and **318** may be performed after steps **320** and **324** in the disclosed method.

As shown in FIG. **19**, upon receipt of the positive verification status message and a positive ID validation message, tour server may cause a verification window **17** to be displayed to the user of the client device **110** (e.g., via display **75** of smartphone **12**), as shown in FIG. **19**. In one embodiment, receiving **326** the tour time from the client device **110** includes, in response to determining that the payment information and the ID information is valid, causing, by the tour server, a scheduling window **18** to be displayed to a user of the client device **110** (e.g., via display **75**) for selecting the tour time, as shown in FIG. **20**. The scheduling window **18** includes a Gregorian calendar graphic **19**. In an example, the user of the client device **110** may touch a date on calendar **19** for a desired self-guided tour time for the property of interest. Doing so populates at least two data fields **20** in window **18**. In an example, for the selected date from calendar **19**, a field **20** for requested time for that date functions as a drop down box, in which the currently available times for the SGT of the subject property are populated, and selectable by the user.

In one embodiment, the method for scheduling a self-guided tour shown and described above with reference to FIG. **3** further includes maintaining, by the tour server, availability data for a plurality of time slots for the SGT. In an example, the aforementioned step of causing the scheduling window **18** to be displayed to the user of the client device **110** for selecting the tour time includes causing, by the tour server, only available time slots to be displayed to the user of the client device **110** (e.g., in the aforementioned drop down box of fields **20** in window **18**).

Referring now to FIG. **21**, the method for scheduling a self-guided tour shown and described above with reference to FIG. **3** may further include, in response to receiving the guest information from the client device, causing, by the tour server, the guest information to be at least one of: stored in memory of, and/or in communication with, tour server; and transmitted to a computing device associated with the multi-unit residential facility (MURF). The guest information data and, optionally, associated metadata, are viewable to the owner and/or management of the MURF property of interest (e.g., subject of the SGT for which the user provided the IOI) on a web portal **21**. Tour server may provide web portal **21** via, for instance, the Internet and, for example, as software as a service (SAAS). In one embodiment, web portal **21** may be viewed and interacted with on a display **75** of the computing device associated with the MURF. In another embodiment, web portal **21** may be viewed and interacted with on a display **75** of a computing device associated with a user, administrator, and/or servicer of the tour server. In yet another embodiment, web portal **21** may be viewed and interacted with on displays **75** of computing devices associated with both the MURF and the tour server.

In an example, web portal **21** is customized or customizable by, or according to the desires of, the owner or management of the MURF and/or the administrator of the tour server (e.g., Tour24). Thus, web portal **21** may contain more, or fewer, windows, data fields, and/or functionality as compared to those examples shown and described herein. Web portal **21** may include a listing **22** of properties. For the tour server view of web portal **21**, all properties who have subscribed to the self-guided tour service may be listed in listing **22**. By contrast, for example, for the MURF view of web portal **21**, only those properties associated with (e.g., owned and/or operated by) are shown in listing **22**. Web portal **21** may include a plurality of data fields **23** for guest information received **308** by tour server, as described above. These fields **23** are auto-populated upon receipt **308** of the guest information by the tour server. These data are displayed in both the tour server view, and the MURF view, of web portal **21**. In the event that MURF receives guest information through manual channels outside of those processes described above for the receiving step **308**, web portal **21** includes an add button **24** so that such guest information may be added and be viewed in either the MURF or the tour server views of web portal **21**.

In one embodiment, the method for scheduling a self-guided tour shown and described above with reference to FIG. **3** further includes, in response to determining that the payment information and the ID information is valid, flagging, by the tour server, the guest information as validated guest information prior to or concurrently with causing the guest information to be at least one of: stored in memory, and transmitted to the computing device associated with the MURF subject of the SGT. In an example, the guest information from the receiving step **308** is both automatically stored in a memory associated, or in communication, with the MURF computing device, and the received **308** guest information is auto-populated in the web portal **21**. In this manner, the MURF property owner and/or management may retain the guest information outside the web portal **21** and may utilize it in any way that they wish to.

Referring to FIG. **22**, the web portal **21** includes various functionality by which the owner and/or management of the MURF property may specify which times and/or dates are available for self-guided tours. In one embodiment, web portal **21** includes an availability window **25**. Window **25** provides owners and/or management of a MURF property to specify which days of the week and times thereon during which SGTs are available. As described above with reference to FIG. **20**, the days and times specified here in the availability window **25** will correspond to those that, if they are not already scheduled for SGT(s), will be displayed to user of the client device **110** in the drop down of field **20** in scheduling window **18**. Days of the week may be specified as being open or closed to scheduling SGTs by alternately turning on and off a day toggle switch **26** in window **25**.

Within a particular day of the week that is turned on for SGT availability, a length of time for SGT time slots and the number of SGTs that may be scheduled at the same time may be entered into data fields **27**, which may include drop down menu functionality. Within a particular day of the week, start and end times for scheduling SGTs may be desired to be specified. To enter a start time for SGTs on that day, an SGT

time toggle switch **28** is alternately toggled on and off. With SGT time toggle switch **28** toggled on, start and end times for SGTs may be entered in data fields **29**. Data fields **29** may include drop down menu functionality. In the example illustrated in FIG. **21**, for a particular day of the week, start and end times for scheduling leasing staff appointments may be desired to be specified. To enter a start time for leasing staff appointments that day, an appointment time toggle switch **30** is alternately toggled on and off. With appointment time toggle switch **30** toggled on, start and end times for leasing staff appointments may be entered in data fields **31**. Data fields **31** may include drop down menu functionality. For another (e.g., consecutive) day of the week, fields **32** are provided in the availability window **25**, which includes analogous functionality as described above with reference to FIG. **22**.

The received **308** guest information includes at least one of: an email address, and a mobile phone number, of a user of the client device. In one embodiment, providing **328** the confirmation including the tour time to the client device **110** includes causing, by the tour server, the confirmation to be transmitted to the user of the client device **110** (e.g., via display **75**) as at least one of: an email to the email address; and a text or multimedia message to the mobile phone number. As shown in FIG. **23**, in an example, an email **36** (and/or text or multimedia message) confirmation sent to a user's email address **37** (or mobile phone number) includes instructions and/or one or more link(s) **38** for client device **110** user (e.g., recipient of the confirmation) to download one or more apps to the client device **110** for the SGT, as further shown and described below.

FIGS. **24-37** illustrate implementation examples of the method for performing a self-guided tour (SGT) shown and described above with reference to FIG. **4**, according to embodiments of the disclosure. In one embodiment, the method for performing a self-guided tour further includes determining, by the tour server, start and end times for the SGT. In an example, the start and end times for the SGT are determined in response to the tour time being obtained **326**. In the embodiment, the step of sending **404** the property access information to the client device **110** may further include sending, by the tour server, the property access information having an activity period that is restricted to a period of time from the determined start time to the determined end time. The property access information is thus provided for the SGT with a window of active usability, for example, a period of time corresponding to the scheduled start time of the SGT plus/minus a time window to allow for early or late arrival. This allows the MURF property guest who scheduled the SGT to enter the premises for the SGT, but not come and go repeatedly. After the expiration of the period of time that the property access information is active for use, it will expire and no longer be available for use by anyone to gain access to the MURF premises. In another example, the property access information is sent **404** to the client device **110** within a predetermined before a scheduled start time for the SGT.

In one embodiment, the step of sending **404** the property access information to the client device **110** includes causing, by the tour server, a property access message **39** to be transmitted to a user of the client device **110** (for viewing on display **75**) as at least one of: an email, a text message, and a multimedia message, as shown in FIG. **24**. In the illustrated example, the property access message **39** includes an access code **40** to be entered into a code entry device (e.g., a keypad or touchpad) of a property access system (e.g., the tour access control system **104** of FIGS. **9**A-**9**D) for the user of the client device **110** to gain access to the MURF for the SGT. In this example, message **39** may also include text instructions **41** for the user of the device to operate the property access system to gain access to the MURF for the SGT using the access code. Additionally, or instead, the message **39** may include a QR code (and/or a barcode) to be scanned by a reader device of the property access system for the user of the client device **110** to gain access to the MURF property for the SGT. In an example, message **39** includes text instructions **35** for the user of the client device **110** to operate the property access system to gain access to the MURF for the SGT using the QR code (or barcode).

In one embodiment, sending **404** the property access information to the client device **110** includes causing, by the tour server, a property access window **33** to be displayed to a user of the client device **110** (e.g., via its display **75** of smartphone **12**), as shown in FIG. **25**. In the example shown in FIG. **25**, the property access window **33** includes a QR code **34** (and/or a barcode) to be scanned by the reader device of the property access system for the user of the client device **110** to gain access to the MURF property for the SGT. In an example, window **33** includes text instructions **35** for the user of the client device **110** to operate the property access system to gain access to the MURF for the SGT using the QR code (or barcode). In another example, the property access window **33** includes an access code to be entered into the code entry device (e.g., a keypad or touchpad) of the property access system for the user of the client device **110** to gain access to the MURF for the SGT. In this example, window **33** may also include text instructions for the user of the device to operate the property access system to gain access to the MURF for the SGT using the access code.

The tour directions for the MURF may be provided **412** to the client device **110** in response to receiving **406** the trigger, as described above with reference to FIG. **4**. Tour directions for the MURF may be provided **412** to the client device **110** based on a tour schedule for the SGT. Referring to FIGS. **26-31**, the step of providing **412** the tour directions for the MURF to the client device **110** includes causing, by the tour server, one or more tour guide windows to be displayed to a user of the client device **110** (e.g., on display **75** of smartphone **12**). The one or more tour guide windows including one or more of: map(s), floorplan(s), three-dimensional (3D) rendering(s), photograph(s), image(s), and/or sketch(es), of the MURF property premises.

In an example, causing the one or more tour guide windows to be displayed to the user comprises causing, by the tour server, a tour path through the MURF to be highlighted on the one or more of: the map(s), the floorplan(s), the 3D rendering(s), the photograph(s), the image(s), and/or the sketch(es), of the MURF. In this manner, the tour path may facilitate the user navigating the MURF for the SGT. In another example, causing the one or more tour guide windows to be displayed to the user of the client device **110** includes causing, by the tour server, locations of at least one of: a model unit, and one or more amenities (e.g., a lobby, a fitness center, a pool, a community room, etc.), of the MURF to be labeled on the one or more of: the map(s), the floorplan(s), the 3D rendering(s), the photograph(s), the image(s), and/or the sketch(es), of the MURF. In this manner, labeling these locations in the MURF may facilitate the user navigating to them during their SGT. In yet another example, providing **412** the tour directions for the MURF to the client device **110** includes causing, by the tour server, audible speech to be transmitted to a user of the client device **110** (e.g., via a speaker of the smartphone **12**). The audible speech includes verbal instruc-

tions to the user for navigating the multi-user residential facility to locate at least one of: a model unit, and one or more amenities, of the MURF for the SGT. In this manner, MURF guests engaged in SGTs may listen to the tour directions and/or to information about the model unit and/or the amenities therein instead of, or in addition to, reading textual information about the same.

As shown in FIG. **26**, the one or more tour guide windows may include a welcome window **42** displayed to the user of the client device **110** (e.g., via display **75** of smartphone **12**) upon their arrival at the front entrance of the MURF premises. In an example, the tour server causes the welcome window **42** to be displayed in response to receiving the trigger. In another example, the tour server causes the welcome window **42** to be displayed in response to the user successfully using the property access information to gain entry to the MURF premises. Welcome window **42** is thus a first of the one or more tour guide windows to be displayed to the guest embarking on the SGT following their arrival at the MURF property.

Referring now to FIGS. **27-29** and **31**, in one embodiment, a tour location window **44** (also referred to herein as "informational windows") is displayed to the user of the client device **110** for respectively visited locations in the MURF premises. As shown in FIG. **27**, a first location visited by the guest engaged in the SGT may be the entrance to the MURF premises. As such, tour location window **44** includes a textual label **45** indicating the location the SGT guest is presently visiting. Additionally, for the various locations being visited, the tour location window **44** includes textual information **46** corresponding to the respective location being visited on the SGT. In an example, the method for performing the SGT may further include causing, by the tour server, the information for at least one of: the model unit, the one or more amenities, and other MURF locations, to be transmitted to the user of the client device **110** (e.g., via a smartphone **12** speaker or via headphones in communication with the smartphone **12**) as audible speech.

During the SGT, the tour server also causes a toolbar **47** to be displayed to the user of the client device **110** for interacting in various ways with tour server via, for example and without limitation, an app running on the smartphone **12**. Similarly, upon the user of the client device **110** passing through the MURF entrance and arriving at the next location (e.g., a lobby of the MURF premises), the tour location window **44** transitions to that next location, and provides the respective label **45** and corresponding information **46**, while the toolbar **47** remains visible, as shown in FIG. **28**.

In an example, as shown in FIG. **29**, a next stop for the user of the client device **110** to visit on the SGT may be an amenity (e.g., health and fitness center, pool, and the like) of the MURF property that is the subject of the SGT. The tour location window **44** displayed at the respective locations in the MURF may include a photo of the respective locations, as shown in FIGS. **26-29** and **31**. In one embodiment, toolbar **47** includes a tour button **48**. In response to the user pressing the tour button **48**, the tour server causes a tour location listing window **49** to be displayed to the user of the client device, as shown in FIG. **30**. Window **49** includes a listing **51** of all SGT locations that may be visited by the MURF guest on the SGT. In response to the user pressing one of the plurality of tour locations provided in the listing **51**, the tour server causes the corresponding tour location window **44** to be displayed to the user of the client device. In this manner, the SGT guest of the MURF may conveniently view various locations and/or amenities available to be visited on the SGT besides the particular one he or she is presently visiting. This may facilitate the user of the client device **110** to plan and efficiently conduct the SGT and/or to return to particular locations or amenities for at least a second visit.

In one embodiment, the toolbar **47** may include a favorites button **52**, as shown in FIG. **31**. In response to the user pressing the favorites button **52**, the tour server causes the particular location and/or amenity being visited, and for which the tour location window **44** corresponds, to be added to a favorites list for the user of the client device **110**. In this manner, the SGT guest of the MURF may conveniently view various locations and/or amenities which they indicated as their favorite(s), which may, for instance, facilitate the user of the client device **110** to return to particular locations or amenities for at least a second visit, or pose questions about to leasing staff during follow-up conversations. Additionally, or instead, the tour server causes an indication that the client device **110** user has added the particular location and/or amenity to be transmitted as a signal to a computing device associated with the owner and/or management of the MURF premises that is the subject of the SGT.

As shown in FIG. **31**, for the one or more informational windows including images or graphics of respective MURF locations and/or amenities, the method for performing the SGT may further include causing, by the tour server, one or more of: at least one tag **81**, and at least one label, to be displayed to the user of the client device **110** (e.g., via display **75**) on or proximate the images or graphics, as shown in FIG. **31**. The one or more of: the at least one tag **81**, and the at least one label, contains information about tagged or labeled features of the respective location and/or amenity, including, for example, a model residential unit (e.g., apartment model unit) of the MURF property, shown in the respective images or graphics. In the example illustrated in FIG. **31**, the feature being further described in the tag **81** is relaying information about a regularly scheduled event at the MURF's pool.

In one embodiment, the MURF includes a model unit having a smartlock device for controlling access thereto. The systems and methods for performing SGTs described herein are compatible with a wide array of such smartlock devices, which are readily available on the market from a large number of suppliers, and which utilize wired and/or wireless communications protocols for communicating with tour server and/or computing devices associated with the MURF owner and/or management. Such smartlock devices may include algorithmic locks, along with additional types of electro-mechanical locks having remote communication capabilities such as are known to persons having ordinary skill in the art. In the embodiment, the method for performing an SGT shown and described above with reference to FIG. **4** further includes receiving, by the tour server, a signal indicating that a location of the client device **110** in the MURF is within a predetermined range of the smartlock device (and, therefore, the model unit). In response to receiving the signal indicating that the location of the client device **110** in the MURF is within the predetermined range of the smartlock device, the tour server causes one or more model unit access windows (e.g., **53** and **54**) to be displayed to a user of the client device **110** (e.g., via display **75** of smartphone **12**), as shown in FIGS. **32** and **33**. The one or more model unit access windows include a means for the user of the client device **110** to interact with the one or more model unit access windows to unlock a locked smartlock device present on a model unit entrance door and thereby gain access to the model unit.

As shown in FIG. **32**, a first model unit access window **53** includes a status indicator graphic **98**. In the illustrated example, in response to the client device **110** coming into proximity to the smartlock device, the tour server and/or the client device **110** causes a wireless communication connection (e.g., using Bluetooth, WiFi, and the like) to be established between the client device **110** and the smartlock device. In response to the wireless communication connection between the client device **110** and the smartlock device being established, the tour server causes a second model unit access window **54** to be displayed to the user of the client device, as shown in FIG. **33**. The second model unit access window **54** includes lock graphics **99**. In the illustrated example, lock graphics **99** includes the unit number of the model unit of the MURF and a lock status indicator, shown as unlocked in FIG. **33**. In one example, the SGT guest of the MURF premises is allowed just one entry into the model unit using the functionality of the first **53** and second **54** model unit access windows, and the smart lock device automatically locks upon the model unit entry door being closed. In this manner, the MURF owner and/or management may discourage, if desired, the SGT guest from lingering in, and/or returning to, the model unit for undue amounts of time. In another example, model unit access windows **53** and **54** are configured to utilize a unique identifier for the user of the client device, such that a particular user unlocking the smartlock device does so in association with his or her identity. In this manner, the act of unlocking the model unit is tied to the respective user, and the MURF owner and/or operator may, via communication therewith by the tour server, for instance, learn when, and for how long, the SGT guest entered, and stayed in, the model unit, respectively.

Additional features of the tour information windows **44** for respective locations and/or amenities of the MURF property are illustrated in FIGS. **34** and **35**. In one embodiment, the method for performing the SGT shown and described above with reference to FIG. **4** further includes causing, by the tour server, a means for the user of the client device **110** to transmit feedback to the tour server (and/or to computing device(s) associated with the MURF owner and/or management) about at least one of: the model unit, the one or more amenities, and other locations in the MURF, to be displayed (e.g., via display **75** of smartphone **12**) to the user in the one or more informational windows **44**. For instance, as shown in FIG. **34**, a question "does the kitchen meet your needs?" with thumbs up/thumbs down buttons **55** positioned adjacent to the question text enables the user of the client device **110** to transmit feedback about that aspect of the model unit. Similarly, in FIG. **35**, the buttons **55** are provided to the right of a question regarding the readiness of the user of the client device **110** to "lease an apartment today." Using examples such as these, along with others that a person having ordinary skill in the art will readily recognize and appreciate, the step of receiving **414** the tour data thus may include receiving, by the tour device (and/or the MURF-associated computing device(s)), the feedback from the client device.

Additional text besides textual information **46** corresponding to the respective location being visited on the SGT present in the tour location information windows **44** may further include a link to an online leasing application for a unit (e.g., an apartment) of the MURF. In one embodiment, this link is caused, by the tour server, to be displayed to the user of the client device **110** in those tour information window(s) **44** associated with locations inside the model unit. In another embodiment, the tour server causes link the online leasing application to be displayed on tour location information window(s) **44** other than, or in addition to, those tour information window(s) **44** associated with locations inside the model unit.

Upon the client device **110** being carried by the user during the SGT exiting the model unit, or upon, or within a predetermined amount of time of, the expiration or end time for the SGT, the tour server causes an exit directions window **57** to be displayed to the user of the client device **110** (e.g., via display **75** of smartphone **12**), as shown in FIG. **36**. The exit directions window **57** includes a "tour ending" message **58** along with textual directions **87** for the SGT guest to leave the MURF property premises. In an example, the textual directions **87** will direct the user of the client device **110** to or past the leasing office of the MURF so that leasing staff, if available, may interact with the SGT guest to mutually beneficial ends.

In one embodiment, the MURF includes one or more geolocator beacons (GBs) positioned therein (e.g., on or in the interiors of doors, walls, and/or ceilings, and/or hidden in plant pots and/or picture frames) at or proximal to locations of at least one of: a model unit, one or more amenities, and other locations in the MURF. In the embodiment, the method for performing the SGT as described above with reference to FIG. **4** further includes receiving, by the tour server, a signal indicating that a location of the client device **110** in the MURF is within a predetermined range of a respective GB of the one or more GBs. In response to receiving the signal indicating that the location of the client device **110** in the MURF is within the predetermined range of the respective GB, the tour server causes the one or more informational windows **44** to be displayed to a user of the client device **110** (e.g., via display **12** of smartphone **12**). The informational window(s) **44** include at least one of: text, images, and graphics, corresponding to, and containing information for, at least one of the: model unit, the one or more amenities, and other MURF locations, proximal the respective GB. The signal indicating that the location of the client device **110** in the MURF is within the predetermined range of the respective GB may be received by the tour server from at least one of: the client device, the respective GB, and a computing device associated with the MURF and in communication with the respective GB.

In one embodiment, the method for performing the SGT further includes receiving, by the tour server, a signal indicating that a location of the client device **110** in the MURF is at, or proximal to, at least one of: the model unit, the one or more amenities, and other MURF locations, of the MURF. In response to receiving the signal indicating that the location of the client device **110** in the MURF is at, or proximal to, the at least one of: the model unit, the one or more amenities, and the other MURF locations, the tour server causes the one or more informational windows **44** to be displayed to the user of the client device. The informational windows **44** include at least one of: text, images, and graphics, corresponding to, and containing information for, the at least one of the: the model unit, the one or more amenities, and the other MURF locations. The signal indicating that the location of the client device **110** in the MURF is at, or proximal to, the at least one of: the model unit, the one or more amenities, and the other MURF locations, may be received by the tour server from at least one of: the client device, and computing device(s) associated with the MURF.

In one embodiment, the method for performing the SGT may further include determining, by the tour server, at least one of: a path taken through the MURF by the user of the client device **110** during the SGT; a sequence of the at least one of: the model unit, and the one or more amenities,

visited in the MURF by the user of the client device **110** during the SGT; and an amount of time spent at each of the at least one of: the model unit, and the one or more amenities, visited in the MURF by the user of the client device **110** during the SGT. These data may be determined by the tour server based on a plurality of signals indicating that the location of the client device **110** in the MURF is within the predetermined range of the respective GB, and/or based on a plurality of signals indicating that the location of the client device **110** in the MURF is at, or proximal to, the at least one of: the model unit, the one or more amenities, and the other MURF locations.

For the signal indicating that the location of the client device **110** in the MURF is at, or proximal to, the model unit, the method for performing the SGT may further include causing, by the tour server, the aforementioned online leasing application link to be displayed to the user of the client device **110** (e.g., via display **75** of smartphone **12**) on the one or more informational windows **44**. In one embodiment, the signal indicating that the location of the client device **110** in the MURF is within a predetermined range of the smartlock device may be received by the tour server from at least one of: the client device, the smart lock device, the one or more GBs positioned proximal the model unit, and the MURF-associated computing device(s) that are in communication with at least one of: the smart lock device, and the one or more GBs.

In one embodiment of the method for performing an SGT shown and described above with reference to FIG. **4**, the confirmation **59** sent **416** to the client device **110** user's email address **37** includes a link **56** to the online leasing application of the MURF, as shown in FIG. **37**. A link to a user survey related to the smartphone **12** app used for performing the SGT as described may also be included in the sent **416** confirmation.

FIGS. **38-43** illustrate various features of the web portal **21** which enable the owner and/or management of the MURF to view, analyze, and otherwise manipulate data received from users of the client device **110** for the SGTs scheduled and/or performed at the MURF. As shown in FIG. **39**, a dashboard **64** of the web portal **21** may include date range **65** and tour type **66** selection tools for selecting a date range for SGTs and types of SGTs, respectively. Upon selecting the date range and the SGT type, a first statistics window **67** on the dashboard **64** provides the number of SGTs scheduled in the selected date range, along with a prospect window **68** containing the information for client device **110** users (e.g., "prospects") who engaged in the SGTs during that date range. Additionally, or instead, of selecting the date range using the date range tool **65**, single dates may be clicked on a calendar window **69** of the dashboard to obtain similar information for a particular single date to be displayed (e.g., on a display **75** of a MURF-associated computing device) in the first statistics **67** and prospect **68** windows. The dashboard **64** also includes an export tool **70** for downloading SGT-related information as an Excel or other suitable file type to facilitate other or additional data analysis by the owner and/or management of the MURF.

As shown in FIG. **40**, by clicking on the export tool **70**, a listing of the SGT-related information in the form of a table **71** replaces the calendar window **69** in the dashboard **64**. In one embodiment, the SGT type tool **66** includes drop down menu functionality. As shown in FIG. **41**, this drop down for SGT type tool **66** may include a listing **72** of commonly owned and/or commonly managed MURF properties. In this manner, by selecting a particular type from the drop down of this SGT type tool **66**, statistics and/or other SGT-related information may be viewed and/or exported specifically for single MURF properties. As shown in FIG. **42**, clicking and/or double clicking on individual row entries in table **71** causes the tour server to display a prospect pop-out window **73** over the web portal **21** on display **75**. Window **73** includes details about the prospect such as contact information, SGT start and end times, contact preferences, desired move in date, pets, rent price range, referral source, desired lease length, and an indication, or flag, as to whether the prospect's ID and/or payment information have been validated and/or verified, respectively. Additionally, in the example illustrated in FIG. **42**, tour history information **74** for the prospect is provided in window **73**.

In one embodiment, graphics in the form of, for example, and without limitation, a tour frequency bar graph **76** and a tour occurrence plot **95** may be provided in web portal **21** dashboard **64**, as shown in FIG. **43**. Plot **95** provides a visual tool for the owner and/or management of the MURF to ascertain trends in SGT scheduling over the course of a specified period of time such as the previous 12 months. Graph **76** provides a visual tool for the owner and/or management of the MURF to ascertain SGT frequency for a particular day. Graph **76** may utilize average values for a day of a week (e.g., Saturday), where the average may be taken over a specified time period (e.g., the previous year or a portion thereof). In this manner, provision of metrics such as those described above with reference to FIGS. **38-43** may facilitate owners and/or management of MURFs to effectively staff and utilize the features of the systems and methods for scheduling and performing SGTs disclosed herein effectively to maximize the efficiency of their business operations, as well as create a convenient and user-friendly experience for prospective tenants.

FIG. **44** illustrates a system **1000** for performing a self-guided tour according to an embodiment of the disclosure. The system **1000** may be utilized, at least in part, for performance of one or more of the above-described steps of the method for performing SGTs. The system includes a tour server **1002**. The tour server **1002** includes one or more processors **1004** in communication with one or more memory devices **1006**. A tour access control system **1008** is positioned at an entrance **1010** of the MURF **1012**. The tour access control system **1008** is in communication with one or more of: the tour server **1002**, and a computing device associated with the MURF **1009**. Communication among and between the components of system **1000** shown in FIG. **44** may be accomplished using a network **1014** via wired and/or wireless communications equipment and protocols including, without limitation, using the Internet, LAN, and/or cellular networks. Tour server **1002** includes a transceiver **1001** (e.g., having data and/or control signal **1005** transmitting and receiving functionality) in communication with processor(s) **1004** for facilitating network **104** communication. The two-way dashed arrows in FIG. **44** denote direct or indirect connections for various lines or paths of data and/or control signal **1005** communications in system **1000**, according to the embodiments disclosed herein. The tour server **1002** implements, performs, and/or otherwise facilitates: sending **404** property access information to a client device; receiving **406** a trigger from the tour access control system indicating that a user **1003** of the client device **110** has entered the MURF; providing **412** tour directions for the MURF to the client device **110**; receiving **414** tour data for the SGT; and sending **416** a confirmation to the client device **110** after the SGT is completed. The system **1000** may further include the above-described smart lock device **1016**

(e.g., for gaining access to the model unit **1017**), GBs **1018**, and the code entry **1020** and reader **1022** devices of the property access system (e.g., tour access control system **1008**).

In some embodiments of the disclosure, the processor(s) **1004** of the tour server **1002** may utilize program instructions stored as software **1024** in one or more modules **1026** of memory **1006**, where memory **1006** may be in the form of non-transitory computer-readable medium **1028**. Processor(s) **1004** may take the form of CPUs, GPUs, microcontrollers, application-specific integrated circuits, and the like. In such embodiments, processor(s) **1004** of the tour server **1002** execute the program instructions to perform any or all of the disclosed methods, including the embodiments of the disclosed method for scheduling the SGT and/or the disclosed method for performing the SGT.

Using the disclosed systems and methods for scheduling and performing SGTs provides users **1003** and MURF **1012** owners and/or managers a number of beneficial technical effects and realizes various advantages as compared to known systems and methods. Such benefits include, without limitation, enabling more efficient use of personnel, computing, and time resources for both users **1003** and MURF **1012** owners and/or managers, providing additional channels for marketing MURFs to prospective tenants, giving SGT-associated information in a convenient format for analysis and trending, and ensuring that prospects who engage in the above-described SGTs are vetted, verified, and validated for identification purposes. These benefits, and others to be recognized and appreciated by persons having ordinary skill in the art, are not achieved merely through the use of routine and/or conventional computing devices. Rather, the disclosed systems and methods provide such advantageous technical effects by way of efficient data processing and provision of a user-friendly experience to take advantage of, and effectively address, extant economic problems in the field of multi-unit residential facility touring for prospective tenants.

Utilizing the disclosed systems and methods for scheduling and/or performing SGTs of MURFs thereby results in a reduction in the required number of MURF leasing staff for scheduling and conducting tours of MURF premises, gives prospective tenant users of the disclosed smartphone app (and/or other software user interface for users to employ on any other type of client device) a speedy and easily operated interface for scheduling and performing SGTs at their own convenient time, as well as enabling more efficient business operations at the MURF, including marketing and customer relationship management (CRM). Furthermore, the disclosed systems and methods for scheduling and performing SGTs enable tour-associated business and computing processes to be performed with greater efficaciousness and improved utilization efficiency of computing, memory, network, electric power, and/or human personnel resources as compared to known processes. These and other substantial and numerous technical benefits and advantageous effects appreciable to persons of ordinary skill in the art are especially evident as compared to known systems and methods in MURF application environments involving high volume and high tempo interactions with prospective tenants.

All references, including publications, patent applications, and patents, cited herein are hereby incorporated by reference to the same extent as if each reference were individually and specifically indicated to be incorporated by reference and were set forth in its entirety herein.

The use of the terms "a" and "an" and "the" and "at least one" and similar referents in the context of describing the invention (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. The use of the term "at least one" followed by a list of one or more items (for example, "at least one of A and B") is to be construed to mean one item selected from the listed items (A or B) or any combination of two or more of the listed items (A and B), unless otherwise indicated herein or clearly contradicted by context. The terms "comprising," "having," "including," and "containing" are to be construed as open-ended terms (i.e., meaning "including, but not limited to,") unless otherwise noted. Recitation of ranges of values herein are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., "such as") provided herein, is intended merely to better illuminate the invention and does not pose a limitation on the scope of the invention unless otherwise claimed. No language in the specification should be construed as indicating any non-claimed element as essential to the practice of the invention.

Preferred embodiments of this invention are described herein, including the best mode known to the inventors for carrying out the invention. Variations of those preferred embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description. The inventors expect skilled artisans to employ such variations as appropriate, and the inventors intend for the invention to be practiced otherwise than as specifically described herein. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context.

We claim:

1. A method for a self-guided tour (SGT) of a multi-unit residential facility (MURF), comprising:

receiving, by a tour server, guest information associated with a user from a client device;

in response to determining the user is requesting the SGT, receiving, by the tour server, payment information associated with the user from the client device;

providing, by the tour server, the payment information to a payment provider to determine whether the payment information is valid;

in response to receiving an indication indicating the payment information is valid from the payment provider, providing, by the tour server and to the client device, a request for identification (ID) information for the user;

receiving, by the tour server, the ID information from the client device based on the request;

providing, by the tour server, the ID information to an ID verification provider to determine whether the ID information is valid;

based on the indication from the payment provider indicating the payment information is valid and the ID verification result from the ID verification provider

indicating the ID information is valid, causing, by the tour server, display of a scheduling screen for selecting a tour time on the client device;

receiving, by the tour server, the tour time for the SGT from the client device;

causing, by the tour server, display of a confirmation screen indicating the tour time on the client device;

receiving, by the tour server, a signal indicating that a location of the client device is within a predetermined range of a smartlock device of a model unit of the MURF;

in response to receiving the signal, causing, by the tour server, a model unit access screen to be displayed on the client device, wherein the model unit access screen comprises an indicia for unlocking or locking the smartlock device of the model unit, and wherein the client device provides information to unlock the smartlock device based on user input indicating selection of the indicia;

based on the user input indicating the selection of the indicia for unlocking the smartlock device of the model unit, providing, by the tour server and to the client device, tour directions for the model unit;

subsequent to providing the tour directions, receiving, by the tour server and from the client device, tour data indicating locations of the client device within the model unit, wherein the client device interacts with one or more beacons of the model unit to generate the tour data; and

determining, by the tour server and based on the tour data, a tour path that the user took while touring the model unit.

2. The method of claim **1**, wherein receiving the guest information from the client device comprises:

receiving, by the tour server, an indication of interest (IOI) for the SGT from the user; and

in response to receiving the IOI, causing, by the tour server, display of a registration screen on the client device, the registration screen comprising a plurality of user data fields for the user to enter the guest information.

3. The method of claim **1**, wherein receiving the ID information from the client device comprises:

based on receiving the guest information from the client device, causing, by the tour server, display of one or more ID information request screens on the client device,

wherein the one or more ID information request screens comprises instructions for the user to use a camera of the client device to:

take a photo of a first side of a government-issued ID card or document using the client device; and

take a self-portrait.

4. The method of claim **1**, wherein the confirmation screen provided to the client device further comprises instructions for the user of the client device to download one or more mobile applications associated with the SGT.

5. The method of claim **1**, further comprising:

providing, by the tour server and based on the tour time for the SGT, property access information to the client device, wherein the property access information is used to access the MURF.

6. The method of claim **1**, wherein the method further comprises:

based on the user input indicating the selection of the indicia, receiving, by the tour server and from the smartlock device, unlock information indicating unlocking of the smartlock device of the model unit, and

wherein providing the tour directions for the model unit is in response to receiving the unlock information from the smartlock device.

7. The method of claim **1**, wherein providing the tour directions for the model unit comprises:

causing, by the tour server, display of a tour path through the model unit on the client device.

8. The method of claim **1**, wherein providing the tour directions for the model unit comprises:

causing, by the tour server, the client device to provide audible speech to the user, wherein the audible speech comprises verbal instructions for navigating the MURF.

9. A method for a self-guided tour (SGT) of a multi-unit residential facility (MURF), comprising:

receiving, by a tour server, guest information associated with a user from a client device;

in response to determining the user is requesting the SGT, receiving, by the tour server, payment information associated with the user from the client device;

providing, by the tour server, the payment information to a payment provider to determine whether the payment information is valid;

in response to receiving an indication indicating the payment information is valid from the payment provider, providing, by the tour server and to the client device, a request for identification (ID) information for the user;

receiving, by the tour server, the ID information from the client device based on the request;

providing, by the tour server, the ID information to an ID verification provider to determine whether the ID information is valid;

based on the indication from the payment provider indicating the payment information is valid and the ID verification result from the ID verification provider indicating the ID information is valid, causing, by the tour server, display of a scheduling screen for selecting a tour time on the client device;

receiving, by the tour server, the tour time for the SGT from the client device;

causing, by the tour server, display of a confirmation screen indicating the tour time on the client device;

receiving, by the tour server, a signal indicating that a location of the client device is within a predetermined range of a smartlock device of a model unit of the MURF;

in response to receiving the signal, causing, by the tour server, a model unit access screen to be displayed on the client device, wherein the model unit access screen comprises an indicia for unlocking or locking the smartlock device of the model unit;

receiving, by the client device, user input indicating selection of the indicia for unlocking the smartlock device;

providing, by the client device, unlock information indicating the user input to the smartlock device;

unlocking, by the smartlock device and without providing the unlock information to the tour server, the model unit in response to receiving the unlock information from the client device;

providing, by the tour server and to the client device, tour directions for the model unit;

subsequent to providing the tour directions, generating, by the client device, tour data based on the client device interacting with one or more beacons of the model unit;

receiving, by the tour server and from the client device, the tour data; and

determining, by the tour server and based on the tour data, a tour path that the user took while touring the model unit.

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