



(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.03.2018 Bulletin 2018/10

(51) Int Cl.:
B66B 1/46 (2006.01)

(21) Application number: 16186650.4

(22) Date of filing: 31.08.2016

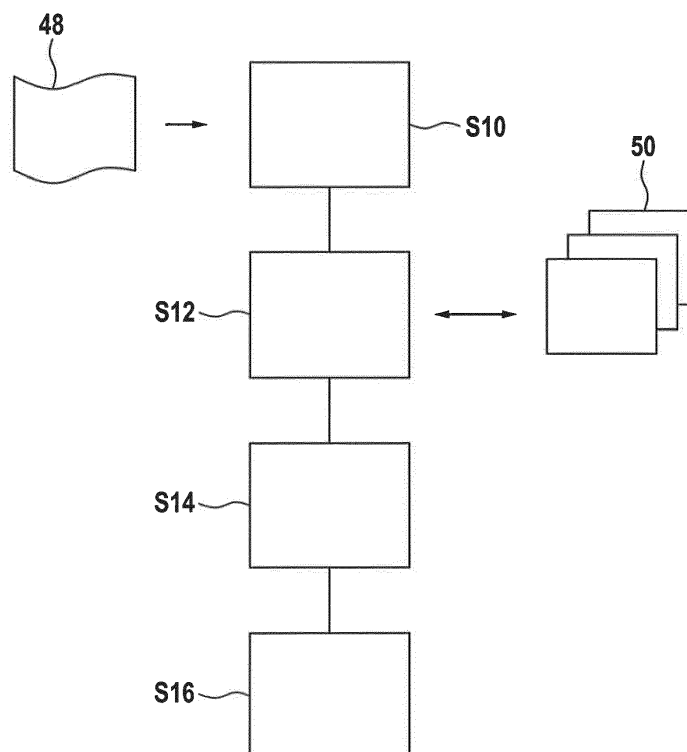
(84) Designated Contracting States: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR Designated Extension States: BA ME Designated Validation States: MA MD	(71) Applicant: Inventio AG 6052 Hergiswil (CH) (72) Inventor: PAICE, Andrew 5405 Baden-Dättwil (CH)
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ELEVATOR ACCESS SYSTEM

(57) A method for identifying a person by an elevator system (10, 10', 10'') comprises: acquiring identification data (48) of the person with an identification device (46); matching the identification data (48) with user profiles (52) of a plurality of persons, which user profiles (52) are stored in an identification database (34); when a user profile (52) is found based on the identification data (48): switching in a personal mode, which is associated with the user profile (52) and interacting with the person in the personal mode; and when no user profile (52) is found: switching in an anonymous mode, and interacting with the person in the anonymous mode.

Fig. 4



Description

[0001] The present invention relates to a method for identifying a person by an elevator system and to an elevator system.

[0002] There are different methods, how an elevator may be called and controlled by a person intending to use the elevator. For example, an elevator may be called anonymously by pressing a call button outside of the elevator cabin and then the destination floor may be indicated by selecting a floor button on a control panel inside the elevator cabin. In some installations, access to a floor is only enabled when the passenger identifies himself using an identification badge, or some form of key. Furthermore, there are elevators which allow passengers to indicate the destination floor before entering the elevator. Such systems are either fully anonymous, where the destination is indicated by either pressing a button, or otherwise selecting it, for example on a touch screen, before entering the cabin, or they are linked with an identification system. If the passenger is identified, then typically access to specific floors is enabled or disabled. The state of the art is that these different modes may not be mixed, which may be too inflexible in many scenarios.

[0003] WO 2001 07353 A1 describes an elevator with access security, in which passengers wear portable devices that transmit personal IDs.

[0004] WO 2008 24115 A1 relates to an anonymous passenger indexing system with a video processor, which tracks passengers based on color index analysis.

[0005] WO 2005 40023 A1 relates to a security system for an elevator with an RFID card and fingerprint authentication device.

[0006] WO 2010 69347 A1 shows an access control system for a people conveyor adapted for communicating with an external tool for granting access.

[0007] There may be a need for a flexible and secure elevator access system.

[0008] Such needs may be met with the subject-matter of the independent claims. Advantageous embodiments are defined in the dependent claims.

[0009] Ideas underlying embodiments of the present invention may be interpreted as being based, inter alia, on the following observations and recognitions.

[0010] An aspect of the invention relates to a method for identifying a person by an elevator system. The elevator system may comprise one or more elevator cabins movable in one or more elevator shafts and accessible via a plurality of elevator doors and a control system adapted for controlling drives of the elevator cabins, the elevator doors and/or further equipment of the elevator system. The method may be performed automatically by an access system of the elevator system, which access system may be a part or module of the control system or which may be a separate system, which interfaces with the control system. The control system may be communicatively interconnected with external systems, such as a building information system and/or external servers,

which may supply the control system and in particular the access system with information.

[0011] According to an embodiment of the invention, the method comprises: acquiring identification data of the person with an identification device; matching the identification data with user profiles of a plurality of persons, which user profiles are stored in an identification database; when a user profile is found based on the identification data: switching in a personal mode, which is associated with the user profile and interacting with the person in the personal mode; and when no user profile is found, or when the person is not identified with a device or by other means: switching in an anonymous mode, and interacting with the person in the anonymous mode.

[0012] Summarized, an access system of the elevator system may try to identify a person near the elevator system, approaching the elevator system, in front of an elevator door and/or inside an elevator cabin based on sensor data, i.e. the identification data, gathered with a sensor, comprised by the identification device. Based upon a successful or failed identification of the person, the access system may switch in a personal mode or the anonymous mode, which may provide different control abilities of the elevator system. The access system may interact differently with identified and unidentified persons. When a person is not identified, in the anonymous mode, there may be limited functionality, or an additional security action may be initiated, either with or without warning the person. Also the functionality may be limited in the personal mode and restricted to specific functions identified in the user profile of the person. The person may be identified personally or may be identified as belonging to a category of persons with the same access (for example firefighter, visitor and/or maintenance personnel). There may be a user profile for a category of persons.

[0013] Furthermore, the algorithm used by the access system to service the call requests may be prioritized so that an elevator containing a mixture of identified and unidentified persons will service unsecured areas first, and/or may issue a request to the last entrant to use a different elevator, and/or may return to the main or a public floor.

[0014] A user profile may store an identifier for the person, values for matching the identification data with the person and/or information of the interaction and/or control rights of the person with respect to the elevator system and/or the building housing the elevator system.

[0015] In such a way, the elevator system may be controlled with and without personal identification. In particular, an elevator cabin may be called and/or moved to another floor by identified and unidentified persons.

[0016] In general, the elevator system may be easily used either by identified and unidentified persons and offers security. Furthermore, the elevator system even may be used, when a remote identification system (such as the database) is not available. Unidentified persons may access the elevator and/or a building housing the

elevator system and/or may be directed within the building without alerting them to an identification system.

[0017] According to an embodiment of the invention, the identification device comprises an electronic reader for an authenticator and the identification data comprises an identifier stored and/or encoded in the authenticator. The authenticator may comprise an electronic authentication device and/or a computer-readable code. The identification may be based on a unique identifier provided by the person, which identifier may be used to determine the interaction with the elevator system.

[0018] The authenticator may be a device, such as a badge and/or an RFID. The electronic reader may read an identifier stored inside the badge and/or RFID. The identifier as identification data may be matched with identifiers stored in the database and may be used for finding a user profile of the person. The authenticator may be worn by the person and/or may be embedded in clothing (such as a shirt, a belt, etc.), in jewellery (such as a ring, a necklace, a pendant, a watch, a bracelet, etc.). The authenticator, such as an RFID chip, may be embedded under the skin of the person, for example on the hand. The authenticator may be integrated in a mobile device, in a key, etc.

[0019] The authenticator also may be a QR code or a bar code or other unique visual identifier, which may be read by the electronic reader. These codes may encode the identifier for the person.

[0020] According to an embodiment of the invention, the identification device comprises a camera and/or an image scanner and the identification data comprises image data of the person; wherein matching the identification data comprises: identifying the person by image processing of the identification data. For example, the camera and/or image scanner may be part of a finger scanner or retina scanner and the image data may contain an image of a fingerprint or a retinal scan. Furthermore, the camera may be directed towards persons approaching an elevator door and the image data may contain an image of the complete person or at least his or her face. In any case, the person may be identified by specific features that may be found in the image data. For example, features of a face may be extracted with a face recognition algorithm. Also biometric features may be extracted from an image of the person and used for identifying the person. It also may be possible that the image data contains an image of a tattoo of the person. The corresponding features matching to the features extracted from the image data may have been stored in the user profile of the respective person and may be compared with the features extracted from the image data for finding the user profile and/or an identifier of the person.

[0021] According to an embodiment of the invention, the identification device comprises a microphone and the identification data comprises audio data, wherein matching the identification data comprises: identifying the person by voice recognition based on the identification data.

For example, a voiceprint may be extracted from the audio data and may be compared with a voice print of the person stored in the corresponding user profile.

[0022] According to an embodiment of the invention, interacting with the person in the personal mode comprises activating an application in a mobile device of the person. When the person has been identified, an application in a smartphone, smartwatch or tablet carried by the person may be started by an external command of the control system. The person then may control the elevator (for example by choosing a destination floor) via the application.

[0023] According to an embodiment of the invention, interacting with the person comprises: receiving button selections of the person. In one case, the operation mode, to which it is switched (i.e. the personal mode or the anonymous mode), determines, which button of a control panel, such as a cabin control panel, is selectable and/or may be selected. For example, selectable buttons may be lighted. In the anonymous operation mode, the person only may select floors, which may be visited by all persons (such as restaurant, lobby, parking deck). In the personal operation mode, the person may select more floors, to which the person is assigned, such as the floor with the hotel room or the office of the person.

[0024] It may be that the buttons are virtual buttons. I.e. it may be that the control panel comprises a touch screen, which displays virtual buttons. Thus, a button selection also may be a touch onto a touch screen. However, it also may be possible that the buttons are mechanical buttons.

[0025] According to an embodiment of the invention, interacting with the person comprises: receiving gesture commands from the person via a sensor. For example, the sensor may comprise a camera, an IR sensor or may be part of a sensor field. Another possibility is that the person indicates by gestures or by its behaviour, what he or she wants to do. For example, for a person identified by the access system and approaching an elevator door, the door may be opened. Also, the access system may perform gesture detection and specific gestures may inform the system that the person wants to go up or wants to go down. It has to be noted that the gesture commands may be comprised in the same image data that is used for identifying the person. For example, the identification of the person and the extracting of the gesture command may be performed from the same image data and/or simultaneously.

[0026] According to an embodiment of the invention, interacting with the person comprises:

receiving audio commands from the person via a microphone. A further possibility is that the person controls the elevator system with audio commands. The audio commands may be comprised in the same audio data that is used for identifying the person. For example, the identification of the person and the extracting of the audio command may be performed

from the same audio data and/or simultaneously. The audio commands may be extracted with speech recognition and/or may be based on a specific code or commands for a specific person. This may be particularly advantageous for handicapped people, such as a blind person. For example, an identified blind person may control the elevator solely on voice commands, which, for example, may be prohibited for anonymous and/or other persons.

[0027] According to an embodiment of the invention, at least two different personal modes are associated with the user profiles. In the simplest case, the access system may only distinguish between identified and unidentified persons. For example, the floors a person may set as destination, or more general, the possible interactions of the person with the elevator system, may be encoded in the authenticator carried by the person. Otherwise, every use profile may contain information about the possible interactions of the person with the elevator system. For example, the user profile of a person may contain the floors, the person is allowed to select. As a further example, a user profile of a blind person may contain that the person is allowed to interact with the elevator system via voice commands.

[0028] The database storing the user profiles may be stored in different devices and different locations.

[0029] According to an embodiment of the invention, the database storing the user profiles is provided in a device, for example a controller or main controller, of the elevator system.

[0030] According to an embodiment of the invention, the database storing the user profiles is provided in a device in a building housing the elevator system. The database may be stored or may be part of a building information system.

[0031] According to an embodiment of the invention, the database storing the user profiles is provided in a public or private cloud server. For example, the server may be provided by an owner and/or operator of many buildings. It also may be that the server is provided by an owner and/or operator of many elevator systems, and/or a third party service provider, including the elevator manufacturer, with infrastructure which may be located remotely or in the building.

[0032] According to an embodiment of the invention, switching in the personal mode is only valid within a time period; and, when the user profile has been found outside the time period, switching in the anonymous mode. The identifier provided by the person, for example with an authenticator, may be temporary or permanent. Although, when the access system has identified a person, it may be that the person is treated as an anonymous person, since corresponding rights have become invalid.

[0033] According to an embodiment of the invention, when no user profile has been found, the system saves the identification data of the not identified person. It may be that the access system performs additional security

actions, when a person is found to be not known by the access system. For example, image data, such as a video of the person, audio data of the person, etc. may be stored for later identifying the person in another way. This identification data also may be stored in the database storing the user profiles.

[0034] According to an embodiment of the invention, the personal mode and/or the anonymous mode is dependent on an elevator operation mode. Some elevator systems may have different operation modes, such as normal, breakdown, fire fighter, seismic, etc. The switching to personal mode and/or anonymous mode and/or the granted rights may depend on the elevator operation mode. This may increase security for emergency personnel, such as fire fighters.

[0035] According to an embodiment of the invention, the identification device is installed in the elevator cabin, for example, directly in a control panel. The identification device may be combined with an existing control panel, which also may comprise buttons and/or a touchscreen for selecting a floor. When a specific button is pressed, the identity of the person may be determined and access to the floor associated with the button may be given or denied. For example, a camera inside the cabin may be used for generating image data. Also, a finger print scanner may be installed in the button.

[0036] According to an embodiment of the invention, the identification device is installed outside an elevator cabin, for example at or near an elevator door. A camera, such as an infrared camera, may be inspecting the space in front of an elevator door may generate the identification data. The person may be identified on approach and/or when he or she speaks, and then an interaction via a mobile device (an application starts) by voice and/or gesture may then be activated.

[0037] A further aspect of the invention relates to an elevator system, which comprises an elevator cabin movable in an elevator shaft and accessible via a plurality of elevator doors; an identification device adapted for acquiring identification data of a person; and a control system with an access system adapted for matching the identification data with user profiles of a plurality of persons, which user profiles are stored in an identification database. The control system and in particular the access system may be adapted for switching in a personal mode, when a user profile is found based on the identification data, which personal mode is associated with the user profile and then for interacting with the person in the personal mode, and for switching in an anonymous mode, when no user profile is found, and then for interacting with the person in the anonymous mode.

[0038] In the following, advantageous embodiments of the invention will be described with reference to the enclosed drawings. However, neither the drawings nor the description shall be interpreted as limiting the invention.

Fig. 1 schematically shows an elevator system according to an embodiment of the invention.

Fig. 2 schematically shows an elevator system according to a further embodiment of the invention.

Fig. 3 schematically shows an elevator system according to a further embodiment of the invention.

Fig. 4 shows a flow diagram illustrating a method for identifying a person by an elevator system according to a further embodiment of the invention.

[0039] The figures are only schematic and not to scale. Same reference signs refer to same or similar features.

[0040] Fig. 1 shows an elevator system 10 comprising an elevator cabin 12 movable in an elevator shaft 14 by a drive 16. The elevator system 10 furthermore comprises a central controller 18 (which may be a part of the drive 16 or located in a machine room above the shaft) for controlling the drive 16 and further equipment of the elevator system 10. For example, the central controller 18 may also control elevator doors 20. Another possibility is that the controller 18 is a distributed controller, which for example is distributed between the machine room and the elevator cabin 12.

[0041] At each elevator door 20, the elevator system 10 furthermore comprises a door control panel 22, which may be a button panel 22 or a touchscreen 22, for calling the elevator cabin 12 and a camera 24 for identifying a person in front of the elevator door 20.

[0042] Inside the elevator cabin 12, a cabin control panel 26 is arranged, which comprises buttons 28 for selecting a floor. Alternatively or additionally, the cabin control panel 26 may comprise a touchscreen, which may display virtual buttons. In the cabin control panel 26, also a microphone 30 is included, which also may be used for identifying a person inside the elevator cabin 12.

[0043] The controller 18 may be interconnected with a cloud server 32, which may be provided remote from the elevator system 10 and/or which may be interconnected via Internet. The cloud server 32 may be adapted for providing a plurality of elevator systems 10 with information about persons that may use the elevator system 10. For example, the cloud server may comprise a database 34 for storing such information.

[0044] When a person approaches an elevator door 20 and/or presses a button on the door control panel 22, the elevator system 10, in particular, the central controller 18 tries to identify the person via image data from the corresponding camera 24, where, for example, information about persons stored in the database 34 is used. Based upon this, the central controller 18 may decide, whether the person is allowed to use the elevator system 10 and/or which floors he or she may visit. Also not identified, anonymous persons may use the elevator system 10 but may only visit specific floors.

[0045] When the person has entered the elevator cabin 12, he or she may push a button 28 on the control panel 26 and/or may command the elevator system 10 via voice commands, which may be extracted from audio data pro-

vided by the microphone 30. It may be possible that the elevator system 10 tries to identify the person via audio data, for example, in the case, when there is no camera 24 in the floor, in which the person has entered the elevator cabin 12 or when this camera 24 is out of order.

[0046] Fig. 2 shows a further elevator system 10' with more than one elevator cabin 12 in more than one shaft 14. Near each door (not shown), the elevator system 10' comprises a door control panel 22' (such as a button panel or a touchscreen) with a fingerprint scanner 36. Furthermore, the elevator system 10' comprises a server 32', which may be housed in the building of the elevator system 10', which server 32' runs a central controller 18 of the elevator system 10' and/or which provides a database 34 with user information.

[0047] In the embodiment of Fig. 2, a person may push a button and/or may touch a surface of the door control panel 22', which simultaneously generates image data of the fingerprint of the person. Based on this image data, the elevator system 10 tries to identify the person and to restrict access to the elevator system and/or the building based on this identification.

[0048] Fig. 3 shows a further elevator system 10", which has a door control panel 22" near each door 20, which is adapted to read key cards or badges 38. Such a badge 38 may comprise an RFID chip 40 encoding an identifier for the person carrying the badge 38. Alternatively, the RFID chip 40 may be included into another object, such as clothing, jewellery, etc. It also may be possible that the door control panel 22" comprises a bar code or QR code reader for reading a code carried by a person. Also this code may encode an identifier for the person.

[0049] The identifier may be searched and matched in a database 34, which also may be provided in a controller 18 of the elevator system 10". The access of the person to the elevator system 10" and to specific floors is restricted based on the identifier. When the identifier is found in the database 24, the person may command the lift (for example via the control panel 26) to move the elevator cabin 12 to the floors as stored in the database with respect to the identifier. When the identifier is not found and the person is not identified, the person may visit only specific floors.

[0050] The elevator system 10" provides the further possibility to control the elevator system 10" with a mobile device 42. When the person has been identified, the controller 18 may connect with or start an application in the mobile device 42, which, for example, may provide functionality as the control panel 26. The mobile device 42 may communicate with the controller 18 with a wireless communication device 44 (such as a Bluetooth © interface) that is arranged inside the elevator cabin 12. It also may be possible that the mobile device 42 directly provides an identifier for the person to the controller 18 via a wireless communication device 44, which may be arranged inside the elevator cabin 12 or outside, for example, at each door 20.

[0051] It has to be noted that the functionality of the elevator systems 10, 10', 10" may be combined, when appropriate. For example, the control panel 26 with the microphone 30 may be used in any elevator system. Furthermore, the badge reader 22" and/or the mobile device 43 also may be used in the system 10, 10'. Additionally, the location of the controller 18, the server 32, 32' and/or the database 34 may be provided by a device of the elevator system 10, 10', 10", by a device in the building, in which the elevator system 10, 10', 10" is housed, or by a device remote from the elevator system and the building.

[0052] Fig. 4 shows a flow diagram for a method for identifying a person, which may be performed by the elevator systems 10, 10', 10". In particular, each of the elevator systems 10, 10', 10" may comprise a control system 45, which, for example, may comprise the controller 18 and other controllers adapted for performing the method. The parts or modules of the control system 45 performing the method may be seen as an access system 45 of the elevator system 10, 10', 10".

[0053] In step S10 of the method, identification data 48 of the person is acquired with an identification device 46. The identification device 46 may be any device with a sensor adapted for generating data, which is adapted for authenticating the person.

[0054] For example, the identification device 46 may comprise a camera 24 and/or an image scanner 36 and the identification data 48 may comprise image data, such as an image or video of the person or her or his face. The image data also may comprise a fingerprint or an image of a bar code or QR code.

[0055] It also may be possible that the identification device 46 comprises a microphone 30 and the identification data 48 comprises audio data. For example, a person may say his or her name or a special code into the microphone 30 and/or the audio data is a sample of the voice of the person.

[0056] A further possibility is that the identification device 46 comprises an electronic reader 22' for an authenticator 50 and the identification data 48 comprises an identifier stored and/or encoded in the authenticator 50. The identification device 46 may comprise a bar code or QR code reader or more general computer-readable code reader. In this case, the authenticator 50 may be an object carrying the computer-readable code, which encodes the identifier. Such objects may be cards, prints, keys, etc.

[0057] On the other hand, the authenticator 50 may comprise an electronic device adapted for sending the identifier. For example, the authenticator 50 may comprise an RFID chip or a mobile device 42, which, for example, may communicate with a further device 44 of the elevator system 10", which then may be seen as electronic reader 22'.

[0058] There are several possibilities, where the identification device 46 is installed, it may be installed in the elevator cabin 12, for example in a cabin control panel

26. It also may be installed outside of the elevator cabin 12, for example, near or at or integrated into the elevator door 20. Furthermore, it is possible that the elevator system 10, 10', 10" comprises identification devices 46 of different types and/or at different locations.

[0059] In step S12, the identification data 48 is matched with user profiles 52 of a plurality of persons, which user profiles 52 are stored in an identification database 34. When the identification data 48 comprises an identifier of the person, a user profile 52 associated with the identifier may be searched.

[0060] Otherwise, when the identification data comprises image data, the identification data 48 may be processed with further software for extracting features of the person or the object shown in the image data. For example, a face recognition algorithm may process the image data. It also may be possible that biometric data is derived from the image data. In the user profiles 52, corresponding features associated with the respective persons are stored. When the identification data comprises audio data, the identification data 48 may be processed with a voice recognition software, for extracting features of the voice of the person. In both cases, a user profile 52 may be found, when the extracted features match with the features stored in the user profile.

[0061] Also, an algorithm for evaluating a computer-readable code may be performed, which directly may result in an identifier for the person.

[0062] It has to be noted that there need not be a 1:1 relationship between persons and user profiles. For example, several persons may be provided with a badge 38 that encoded the same identifier. It also may be that one person has several badges 38, when needing access to different parts of the building. For example, a user profile 52 simply may correspond to a person that is allowed to enter a specific office.

[0063] Furthermore, the process of extracting features from the identification data 48 may be performed directly in the identification device 46, a controller 18 of the elevator system 10, 10', 10" or a server 32, 32' interconnected with the elevator system 10, 10', 10", i.e. in any part of the access system 45.

[0064] In step S 14, the access system 45 switches to a personal mode or to an anonymous mode based on whether a use profile has been found or not.

[0065] When no user profile 52 has been found matching the identification data 48, the access system 45 switches in an anonymous mode. In the anonymous mode, the person may only have restricted access to floors and/or parts of the building. For example, in the anonymous mode, only specific floors may be selected. Furthermore, in the anonymous mode, the person only has restricted access to control functions of the elevator system. For example, the person may not perform voice commands and/or may not use an application in a mobile device 42 for controlling the elevator system.

[0066] It also may be that when no user profile 52 has been found matching the identification data 48, that the

access system 45 saves the identification data 48 of the not identified person, for example in the data base 34. In such a way, also not identified persons may be personally identified later in another way.

[0067] On the other hand, when a user profile 52 is found based on the identification data 48, the access system 45 switches in a personal mode, which is associated with the corresponding user profile 52. In a simple case, there is only one personal mode associated with all user profiles. I.e. when a person has been identified, this person may visit the same floors and/or control the elevator as all other identified persons. However, usually different personal modes may be associated with the user profiles 52. For example, every person may have a different personal mode.

[0068] It also may be that the user profile has a time restriction and switching in the personal mode is only valid within a time period stored in the user profile 52. Although a user profile 52 has been found, when the actual time is outside the time period, switching in the anonymous mode may not be possible.

[0069] Furthermore, the personal mode and/or the anonymous mode may be dependent on an elevator operation mode. For example, in case of an emergency or an elevator malfunction, all persons only may select a specific floor, such as the ground floor. Furthermore, it may be that in the case of an emergency, also not identified persons, such as firefighters, may select floors, which usually are not accessible by anonymous persons.

[0070] In step S16, the elevator system 10, 10', 10" interacts with the person in the personal mode or the anonymous mode. For example, a specific interaction may be receiving a button selection. In general, the mode of the elevator system 10, 10', 10" may restrict the interaction of the person with the elevator system 10, 10', 10". For example, specific floors may not be selected, the elevator cabin 12 will not be moved to specific floors. It also may be that at specific floors, the doors 20 will not open.

[0071] The possible interactions also may be indicated by the elevator system 10, 10', 10". For example, buttons may not be lighted, when the corresponding function may not be used.

[0072] Furthermore, the elevator system 10, 10', 10" may issue visible and/or audible information about the possible interactions. For example, a message may be displayed in the elevator cabin, that the person has been identified as a specific person and/or what this person is allowed to do (or not).

[0073] It also may be that the elevator system 10, 10', 10" receives gesture commands from the person via a camera 24 or receives audio commands from the person via a microphone 30. For example, the identification device 46 also may be used for receiving the commands. A person may indicate per gestures, where he or she wants to go. Also a person may say, where he wants to go. In these cases, the identification of the person and evaluation of the gesture or voice command may be per-

formed simultaneously.

[0074] Another possible interaction may be that an application in a mobile device 42 of the person is started, when the person has been identified. This application may provide a virtual control panel with which, for example, a floor may be selected.

[0075] Finally, it should be noted that the term "comprising" does not exclude other elements or steps and the "a" or "an" does not exclude a plurality. Also elements described in association with different embodiments may be combined. It should also be noted that reference signs in the claims should not be construed as limiting the scope of the claims.

15 List of reference signs

[0076]

10, 10', 10"	elevator system
12	elevator cabin
14	elevator shaft
16	drive
18	controller
20	elevator door
22, 22', 22"	door control panel
24	camera
26	cabin control panel
28	button
30	microphone
32, 32'	server
34	database
36	fingerprint scanner
38	badge
40	RFID chip
42	mobile device
44	wireless communication device
45	control/access system
46	identification device
48	identification data
50	authenticator
52	user profile

Claims

1. A method for identifying a person by an elevator system (10, 10', 10"), the method comprising:

acquiring identification data (48) of the person with an identification device (46);
matching the identification data (48) with user profiles (52) of a plurality of persons, which user profiles (52) are stored in an identification database (34);

when a user profile (52) is found based on the identification data (48): switching in a personal mode, which is associated with the user profile (52) and interacting with the person in the per-

- sonal mode;
when no user profile (52) is found: switching in an anonymous mode, and interacting with the person in the anonymous mode.
2. The method of claim 1,
wherein the identification device (46) comprises an electronic reader for an authenticator (50) and the identification data (48) comprises an identifier stored and/or encoded in the authenticator (50);
wherein the authenticator (50) comprises an electronic authentication device and/or a computer-readable code.
 3. The method of claim 1 or 2,
wherein the identification device (46) comprises a camera (24) and/or an image scanner (36) and the identification data (48) comprises image data of the person;
wherein matching the identification data (48) comprises: identifying the person by image processing of the identification data (48).
 4. The method of one of the previous claims,
wherein the identification device (46) comprises a microphone (30) and the identification data (48) comprises audio data;
wherein matching the identification data (48) comprises: identifying the person by voice recognition based on the identification data (48).
 5. The method of one of the previous claims,
wherein interacting with the person in the personal mode comprises activating an application in a mobile device (42) of the person.
 6. The method of one of the previous claims,
wherein interacting with the person comprises at least one of:
 - receiving button selections of the person;
 - receiving gesture commands from the person via a sensor (24);
 - receiving audio commands from the person via a microphone (30).
 7. The method of one of the previous claims,
wherein at least two different personal modes are associated with the user profiles (52).
 8. The method of one of the previous claims,
wherein the database (34) storing the user profiles (52) is provided in a device (18) of the elevator system (10"); and/or
wherein the database (34) storing the user profiles (52) is provided in a device (32') in a building housing the elevator system (10"); and/or
wherein the database (34) storing the user profiles
- (52) is provided in a cloud server (34).
9. The method of one of the previous claims,
wherein switching in the personal mode is only valid within a time period; and, when the user profile (52) has been found outside the time period, switching in the anonymous mode.
 10. The method of one of the previous claims,
when no user profile (52) has been found, saving the identification data (48) of the not identified person.
 11. The method of one of the previous claims,
wherein the personal mode and/or the anonymous mode is dependent on an elevator operation mode.
 12. The method of one of the previous claims,
wherein the identification device (46) is installed in the elevator cabin (12); and/or
wherein the identification device (46) is installed in a control panel (22, 26).
 13. The method of one of the previous claims,
wherein the identification device (46) is installed outside an elevator cabin (12); and/or
wherein the identification device (46) is installed at an elevator door (20).
 14. The method of one of the previous claims,
wherein the identification device (46) comprises a camera (24) and the identification data (48) comprises image data of the person;
wherein matching the identification data (48) comprises: identifying the person by image processing of the identification data (48);
wherein, when no user profile has been found, saving the identification data (48) of the not identified person.
wherein interacting with the person in the personal mode comprises activating an application in a mobile device (42) of the person.
 15. An elevator system (10, 10', 10"), comprising:
 - an elevator cabin (12) movable in an elevator shaft (14) and accessible via a plurality of elevator doors (20);
 - an identification device (46) adapted for acquiring identification data (48) of a person;
 - a control system (45) adapted for matching the identification data (48) with user profiles (50) of a plurality of persons, which user profiles (52) are stored in an identification database (34);
 - wherein the control system (45) is adapted for switching in a personal mode, when a user profile (52) is found based on the identification data (48), which personal mode is associated with the user profile (52), and for interacting with the

person in the personal mode;
wherein the control system (45) is adapted for
switching in an anonymous mode, when no user
profile (52) is found, and for interacting with the
person in the anonymous mode.

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Fig. 1

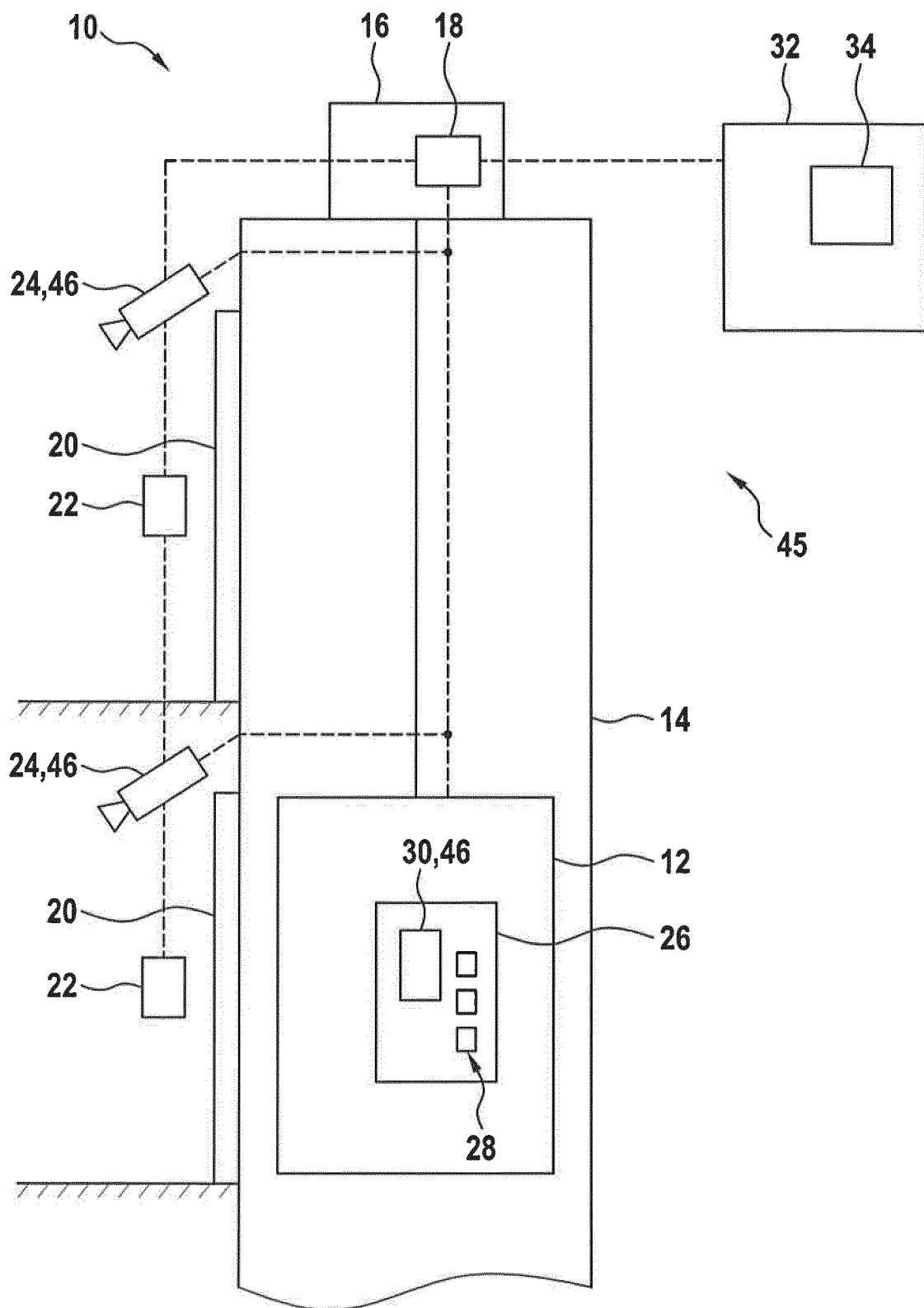


Fig. 2

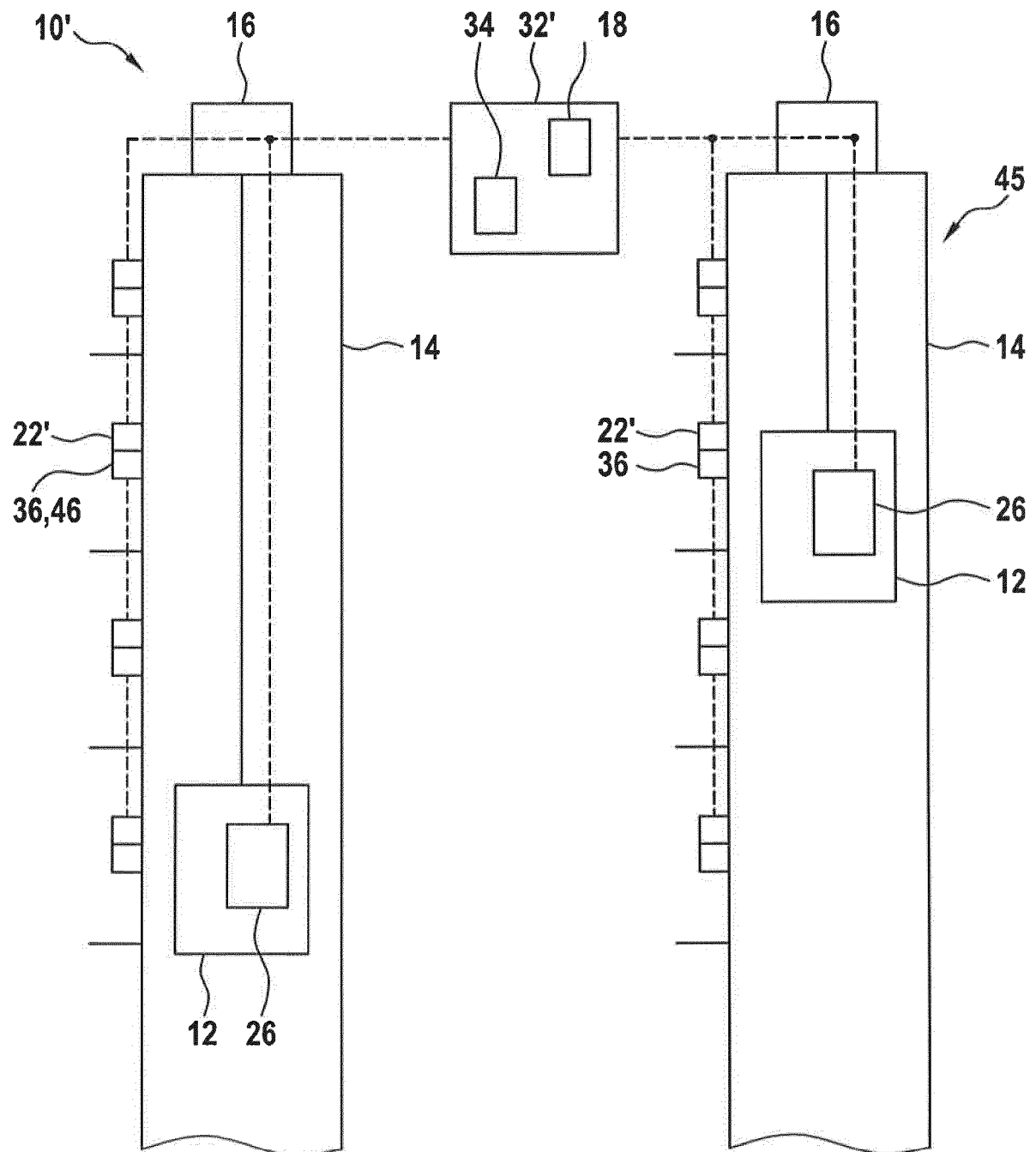


Fig. 3

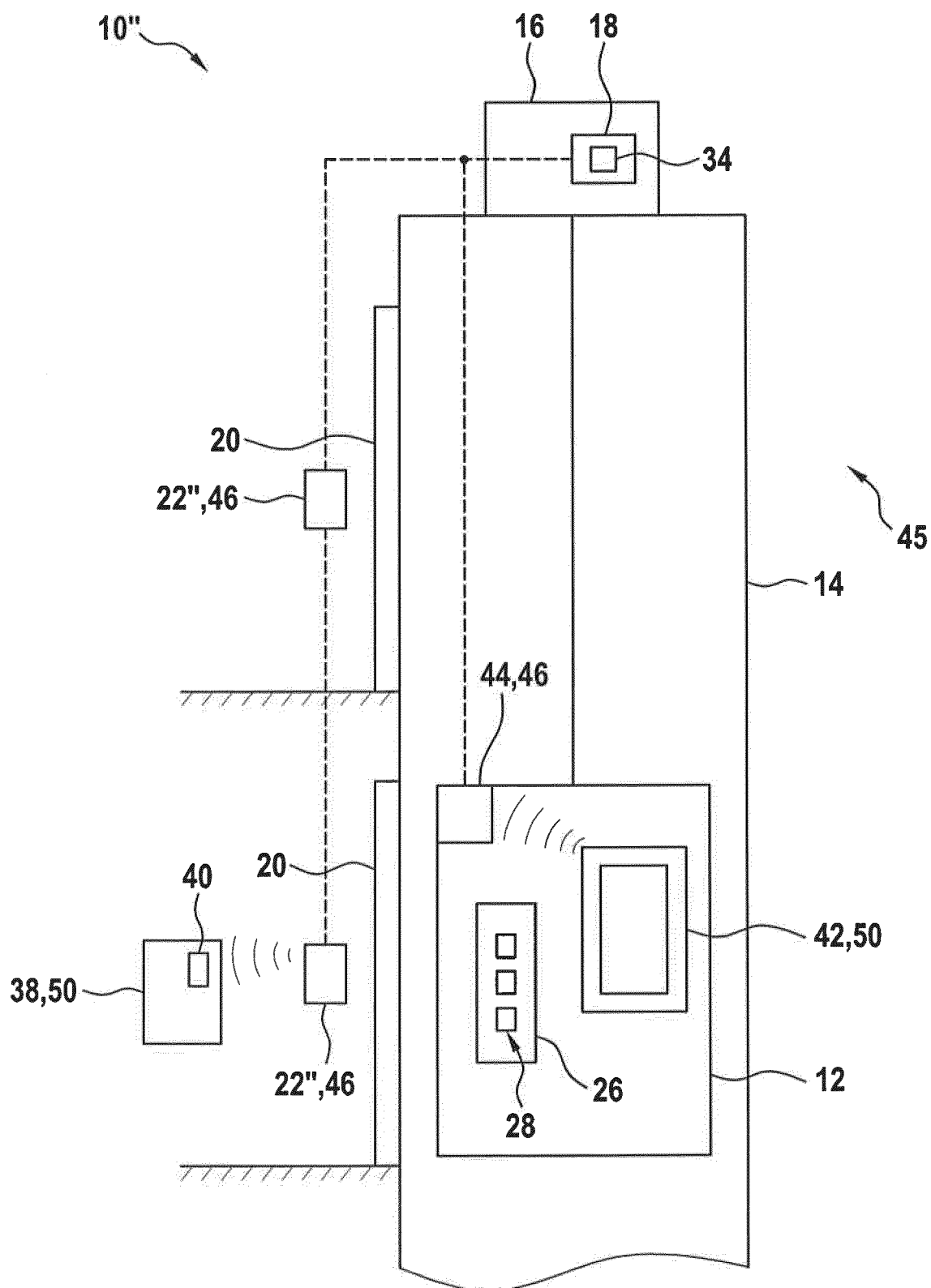
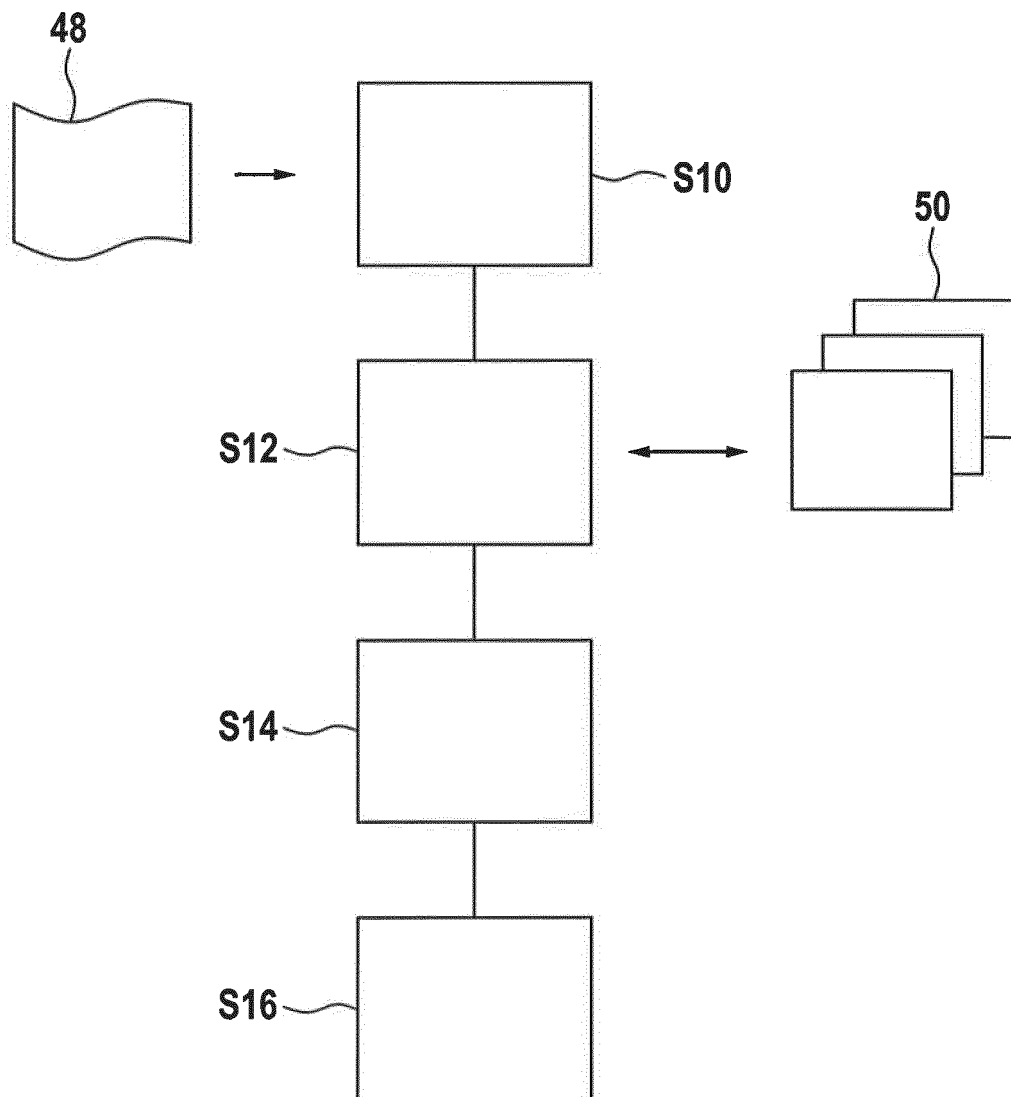


Fig. 4





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Y	* paragraphs [0016] - [0025]; figures 1, 2 *	2,4,5,8	
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Y	* paragraphs [0020] - [0024]; figures 1, 2 *	2,4,5,8, 14	
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Y	* paragraphs [0039], [0041], [0042]; figures 1,2 *		
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Place of search The Hague		Date of completion of the search 8 March 2017	Examiner Miklos, Zoltan
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