

(19)



(11)

EP 2 895 415 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

04.08.2021 Bulletin 2021/31

(51) Int Cl.:

B66B 5/00 (2006.01)

B66B 9/08 (2006.01)

(86) International application number:

PCT/GB2013/052381

(21) Application number: **13766127.8**

(22) Date of filing: **12.09.2013**

(87) International publication number:

WO 2014/041351 (20.03.2014 Gazette 2014/12)

(54) IMPROVEMENTS IN OR RELATING TO STAIRLIFTS

VERBESSERUNGEN AN ODER IN ZUSAMMENHANG MIT TREPPENAUFZÜGEN

AMÉLIORATIONS DANS OU CONCERNANT DES FAUTEUILS MONTE-ESCALIER

(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**

(30) Priority: **12.09.2012 GB 201216283**

(43) Date of publication of application:

22.07.2015 Bulletin 2015/30

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- **David Parkin: "Firm aims to increase jobs and turnover with intelligent home stairlift of future", Yorkshire Post, 2 November 2003 (2003-11-02), XP055246571, Retrieved from the Internet: URL:<http://www.yorkshirepost.co.uk/news/firm-aims-to-increase-jobs-and-turnover-with-intelligent-home-stairlift-of-future-1-25-31627> [retrieved on 2016-02-01]**

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Description

Field of the Invention

[0001] This invention relates to stairlifts and has been devised, in particular, to provide a monitoring method and apparatus associated with a stairlift.

Background to the Invention

[0002] Stairlifts are, in many instances, installed in residential properties for use by people having a physical impairment, but who wish to remain living independently. However, inevitably a user's desire for independence is countered by concern on the part of family, friends and/or care-providers that the user is safe and well, and not in need of external assistance.

[0003] Facilities for communication between remote parties are described in WO03/098908 and WO2010/141865.

[0004] WO03/098908 presents a method and system for remote asset management with the intention of providing the basis for a diverse product group.

[0005] WO2010/141865 discloses methods and systems for lift monitoring.

[0006] WO2007/045837 discloses a system for monitoring a fault in a mobility aid including a fault detector for detecting a fault. A signal generator is provided for generating a signal representative of the fault which is wirelessly transmitted to a remote location. The person controlling the mobility aid, if unable to move, request assistance or call for help, thus may be able to alert a third party to the problem.

[0007] WO2006/109050 discloses a monitoring system for monitoring an apparatus for raising and lowering a person such as an adjustable furniture weight item or a hoist. The monitoring system comprises a memory for recording information relating to the history of the monitored apparatus. The memory may record periods when power supply to an actuator of the apparatus exceeds a predefined threshold, and the number of operations performed by the apparatus. When the number of operations reaches a predetermined amount the system can inhibit operation of the device. This means that the apparatus can prevent a user from using apparatus beyond a point that a maintenance service is recommended.

[0008] David Parkin: "Firm aims to increase jobs and turnover with intelligent home stairlift of future", Yorkshire Post, 2 November 2003 (2003-11-02), XP055246571, Retrieved from the Internet: URL:<http://www.yorkshire-post.co.uk/news/firm-aims-to-increase-jobs-and-turnover-with-intelligent-home-stairlift-of-future-1-2531627> [retrieved on 2016-02-01] discloses remote monitoring and diagnosis of faults in a stairlift to inform carers or contractors of immediate or future problems with stairlift equipment.

[0009] It is an object of the invention to provide a method of, and/or apparatus for, addressing the desires and

concerns expressed above; or which will at least offer a novel and useful choice.

Summary of the Invention

[0010] In one aspect the invention provides a method of monitoring a stairlift user as defined in claim 1.

[0011] Preferably said method includes generating a signal for reception at a remote location in the event of a change in the position of said carriage on said rail.

[0012] Preferably said method includes generating a signal for reception at a remote location as to the position of said carriage on said rail at regular time intervals.

[0013] Preferably the method further comprises generating a signal for reception at a remote location representative of the number of carriage movements in a prescribed time or the fact there have been no movements for a prescribed time.

[0014] Preferably said signals are transmitted to said remote location, at least in part, wirelessly.

[0015] Said method may comprise transmitting data associated with said signal(s) to authenticated devices over the internet using Hypertext Transfer Protocol or other suitable data transfer protocols.

[0016] Preferably a facility is provided to monitor ambient conditions in the proximity of the stairlift and/or to monitor one or more physiological parameters of a user while using said stairlift, said method comprising generating one or more signals representative of said ambient conditions and/or said physiological parameters and transmitting said signals to a remote location.

[0017] In a second aspect the invention provides a system for monitoring a stairlift user as defined in claim 8.

Brief Description of the Drawings

[0018] The various aspects of the invention will now be described with reference to the accompanying drawings in which:

- Figure 1: shows a typical stairlift to which the invention may be applied;
- Figure 2: shows a schematic of the components of a system according to the invention; and
- Figure 3: shows a logic diagram of the system in operation.

Description of Working Embodiment

[0019] The present invention relates to a system for monitoring a stairlift user by monitoring the activity of a stairlift used by that user.

[0020] Stairlifts are commonly installed in residences occupied by persons having a degree of infirmity. The stairlift enhances the mobility of the user and enables the user to address a number of the consequences of their infirmity. Once installed, the stairlift quickly becomes a part of the user's life with the stairlift's movements re-

flecting the rhythms of the user's activity.

[0021] In a significant number of situations, a stairlift is installed to enable a user to continue living independently in their own home. Whilst this is of benefit to the stairlift user, family, friends and/or care-providers inevitably want assurance that the user is safe and able to function effectively when on their own.

[0022] The present invention provides a method and system to not only endorse a stairlift user's desire for independence, but also to address the concerns of family, friends and/or care-providers.

[0023] Referring to Figure 1 a typical stairlift comprises a carriage 10 mounted on a rail 11 for movement along the rail between an upper end 12 and a lower end 13. To this end the carriage includes a motor/gearbox unit 14 having a pinion 15 on the output thereof. The pinion engages a rack 16 extending along the underside of the rail. Mounted at each end of the rail 11 are limit switches 17. When engaged by the carriage as it reaches an end of the rail, the switches 17 cut power to the motor/gearbox 14.

[0024] In the conventional manner a chair 20 is mounted on the carriage 10 to accommodate a stairlift user. The chair 20 includes a chair base 21, a chair back 22, two spaced armrests 23 and a footrest 24. A hand control 25 is mounted on one of the armrests to allow the user to control movement of the carriage up and down the rail.

[0025] The various stairlift functions are typically placed under the control of an electronic control unit (ECU) 26 within the carriage.

[0026] According to the present invention a monitoring system is applied to the stairlift to report information based on the position of the carriage 10 on the rail 11 and/or the activity of the carriage 10. For example, the system can generate an alert every time the carriage changes position and comes to rest. Alternatively, or in addition, the system can generate an alert reporting the position of the carriage at regular time intervals or at one or more prescribed times. Alternatively or in addition, the system might report the number of carriage movements in a prescribed time or the fact that there have been no movements for a prescribed time period.

[0027] Alternatively, but preferably in addition, the system may report information relating to the ambient surroundings of the stairlift and/or the health of user. For example the system might be configured to generate data in a form so as to report a number of ambient conditions such as temperature, light level, carbon monoxide level, methane level, smoke presence, movement and/or a number of user parameters such as weight, temperature, heart rate, respiratory rate and/or galvanic response.

[0028] The position of the carriage on the rail can be determined in any known manner including by the use of switches mounted on the rail 11 that are triggered when engaged by the carriage 10. Switches 17 could be used to determine the presence of the carriage at either end of the rail. Other position sensing technologies could include (but not be limited to) reed switches, mechanically

actuated switches, ultrasound proximity sensors, optical-based sensors and near field identification systems. Position could also be determined by monitoring the rotation of the pinion 15 in a manner described in our European Patent No. 0 738 232.

[0029] To determine stairlift activity a clock 27 may be incorporated in or associated with the ECU 26 to measure the time elapsing between stairlift movements and/or to record the number of carriage movements occurring within a prescribed period. However, and more simply, the system is preferably configured to generate an alert in the event that the carriage changes position on the rail and/or after a prescribed period of time, say every five minutes, whether or not the carriage has moved. Other variations are within the scope of the invention including generating alerts of the position of the rail at one or more prescribed times during the day, and generating an alert in the event that the number of carriage movements in a prescribed period are less than a prescribed number.

[0030] The system may include sensors 28 of any known form to collect data on the ambient conditions and to generate data representative of those conditions. Similarly, the chair 20 may include sensors 29 in the chair base, backrest and/or armrests to capture user physiological data and to generate signals representative of that data.

[0031] Signals from the ECU 26, clock 27 and the position sensors are preferably collected in a micro controller 30 located in, or within the near vicinity of, the stairlift. As can be seen from Figure 2, the micro controller 30 may also collect data from the ambient surroundings sensors 28 and from the user physiological data sensors 29. Data from all sensors is configured by the micro controller 30 for delivery to central data service 31.

[0032] A possible operation of the microcontroller 30 is shown in Figure 3. As can be seen the microcontroller 30 monitors both carriage position and a time threshold. If there is a change of carriage position a position signal is generated and sent via a data link to a data service. The data service, in turn, issues messages or alerts to authenticated devices as will be described in greater detail below. If a period of time has elapsed and that period of time exceeds a threshold defined in the microcontroller then, once again, a position signal is generated and sent via a data link to data service.

[0033] The micro controller 30 may communicate with a remote central data service 31 in a number of alternative ways including by direct SMS or other mobile data link such as GSM, GPRS, 3G, 4G or via a wireless data or wired data link to a router 32 and thence via a broadband data link. The communication to the data service 31 could also be a combination of fixed-line using telephone lines or other cable-based networks, and wireless technologies.

[0034] In the preferred embodiment, the micro-controller communicates wirelessly with a domestic broadband facility.

[0035] The system might also employ a local receiver

(not shown) to which data is communicated using Ethernet, Bluetooth, Zigbee, WiFi or other communication technology with the local receiver then passing on the data to the remote data service 31 using any suitable, compatible communication technology.

[0036] The remote data service 31 is preferably a bespoke internet based application configured to receive data from the micro controller 30 in a number of suitable ways including GPRS/3G, 4G Wi-Fi and wired link via a Router. The data service 31 might also receive SMS messages converted as with other incoming data to HTTP format.

[0037] The system according to the invention provides for the central data service 31 to relay information contained in the signals incoming from the ECU 26 or micro controller 30 to one or more subscribers via authenticated data receiving devices having installed thereon 'client' applications to enable interaction with the data service. Examples of such devices include mobile telephones, tablet computers, personal computers, television sets and/or any other device or technology capable of imparting information to a human. The devices can be authenticated using Challenge-Handshake Authentication Protocol or other suitable authentication protocol.

[0038] In order to exchange data with the data service, subscribers would have to be pre-authorized and log into the system using, for example, a user name and password.

[0039] The precise configuration of the data service 31 is not essential to the invention. At its most simple the data service 31 would simply receive from the ECU 26 or micro controller 30, and pass on to subscribers, messages concerning stairlift activity. More sophisticated versions of the data service may be configured to discriminate between subscribers, passing certain types of information to some subscribers but not to others. The data service might also be configured to interpret more technical data into a form more easily understood by subscribers and even undertake analysis on data coming from the ECU or micro controller and decide whether or not (and in what form) such data should be passed on.

[0040] By way of example, the micro-controller may be configured to pass on a signal indicating carriage position every 5 minutes. If the data service does not receive a signal after a period of 5 minutes the data service may be configured to interpret this as a technical fault and to generate an appropriate alert to a specified subscriber. Assuming there is a constant flow of position information at 5 minute intervals, the data service may be configured not to pass this position information every 5 minutes but at longer periods, say every hour.

[0041] It is also envisaged that the data service 30 would include a facility to communicate with media services such as (but not necessarily limited to) Twitter, Facebook and/or Google + to enable the distribution of data regarding stairlift activity via such media. SMS and e-mail are further options.

Example 1

[0042] A system according to the invention is configured to generate an alert or signal each time the carriage stops at the top or bottom of the rail. As the carriage 10 engages a switch 17 at the top or bottom of the rail a signal is sent to micro controller 30. The micro controller 30 includes a facility to connect to domestic wireless router and, through that, to an Internet data service.

[0043] The incoming signals from the micro controller 30 are associated by the data service with the stairlift account and, once authorised, the signals are formatted appropriately and transmitted to native applications on phones and tablet computers or web applications accessible by browsers on computers, phones, tablets or other devices belonging to subscribers to the account.

[0044] Followers or subscribers are limited to persons who elect to follow the stairlift and who are granted permission to do so by the account administrator. In this way subscribers, who may be relatives, friends or care-providers, can receive regular messages updating the position of the stairlift on its rail. The format of such updates may comprise, for example, '17.42 Went upstairs' or '18.12 Went downstairs'.

[0045] The micro controller may also send a signal, say every 5 minutes, indicating stairlift position, which is interpreted by the data service and transmitted as a message to authenticated recipients in a form such as for example '9.05 Upstairs', at a longer time interval.

Example 2

[0046] In the stairlift shown in Figure 1, telecommunications functionality is built into the ECU 26. The ECU is, in turn, configured in any known way to determine the position of the carriage 10 along the rail 11. This may be achieved by the use of switches along the rail feeding signals back to the ECU or may be achieved by electronically 'mapping' the rail using the technique described in our European Patent no. 0 738 232.

[0047] Telecommunications messages representing carriage position, time of movement, environmental conditions and/or user health are then sent using the facility in the ECU.

[0048] Messages are sent to a central data service 31 via the internet by any suitable communications technology/protocol. The central data service 31 includes or comprises a bespoke application to receive and process messages from the stairlift and to generate and distribute ongoing messages to subscribers in the form of family, friends and/or care-providers. Associated with the data service 31 are 'client' applications for smartphone, tablets, computers and the like; as well as a web application viewable in a browser.

[0049] Access by subscribers or followers would be by pre-authorized login.

[0050] In its simplest form this example could still provide for alerts to be generated via media services such

as Twitter, but other forms of message could be generated including, but not limited to, SMS and e-mail messages.

[0051] The data service 31 may be configured to undertake some interpretation and/or discrimination, passing on some messages to some subscribers or followers, but not to others.

[0052] It will thus be appreciated that the invention described herein provides an effective means of monitoring the behaviour of a stairlift user and, thereby, enhances the independence of that use.

Claims

1. A method of monitoring a stairlift user, monitoring from a remote location the activity of a stairlift carriage (10) on a stairlift rail (11) when used by said user; **characterized in that** the method includes the following steps:

- i) monitoring the position of said carriage (10) on said rail (11);
- ii) monitoring each time the carriage (10) changes position on said rail (11) then comes to rest;
- iii) monitoring the position of said carriage (10) on said rail (11) at regular time intervals or at defined times;
- iv) monitoring the number of carriage (10) movements on said rail in a prescribed time or the fact that there have been no movements for a prescribed period.

2. A method as claimed in claim 1 including generating a signal for reception at a remote location in the event of a change in the position of said carriage (10) on said rail (11).

3. A method as claimed in claim 1 or claim 2 further comprising generating a signal for reception at a remote location as to the position of said carriage (10) on said rail (11) at regular time intervals or at defined times.

4. A method as claimed in any of claims 1 to 3 further comprising generating a signal for reception at a remote location representative of the number of carriage (10) movements in a prescribed time or the fact there have been no movements for a prescribed time.

5. A method as claimed in any one of claims 2 to 4 wherein said signal(s) are transmitted to said remote location, at least in part, wirelessly.

6. A method as claimed in any one of claims 2 to 5 comprising distributing data representing said signal(s) to authenticated devices over the internet us-

ing Hypertext Transfer Protocol or other suitable data transfer protocols.

7. A method as claimed in any one of the preceding claims wherein a facility (28, 29) is provided to monitor ambient conditions in the proximity of the stairlift and/or to monitor one of more physiological parameters of a user while using said stairlift, said method comprising generating one or more signals representative of said ambient conditions and/or said physiological parameters and transmitting said signals to a remote location.

8. A system for monitoring a stairlift user, said system including a facility for monitoring the activity of a stairlift used by said user, said stairlift having a stairlift carriage (10) mounted on a stairlift rail (11), said system being **characterized in that** said monitoring facility is configured to monitor:

- i) the position of said carriage (10) on said rail (11);
- ii) each time the carriage changes position on said rail and then comes to rest;
- iii) the position of said carriage (10) on said rail (11) at regular time intervals or at defined times;
- iv) the number of carriage (10) movements on said rail (11) in a prescribed period or the fact that there have been no movements for a prescribed period;

said system further including a transmit facility (30) for transmitting to a remote location one or more signals representative of said activity.

9. A system as claimed in claim 8 including a facility (28, 29) to monitor ambient conditions in the vicinity of said stairlift and/or physiological parameters of said user whilst using said stairlift, said system being further operable to transmit to a remote location, at least one signal representative of said ambient conditions and/or said physiological parameters.

10. A system as claimed in any one of claims 8 or claim 9 wherein said signals are transmitted to a remote data service using GSM, GPRS, 3G, 4G, WiFi and/or other functional wired and/or wireless communication facility.

11. A system as claimed in claim 10 wherein said remote data service is operable to receive and interpret one or more of said signals identifying the position of said carriage (10) on said rail (11) and to pass on to identified recipients messages derived from said one or more signals.

12. A system as claimed in claim 11 wherein said remote data service is configured to distribute data derived

from said signals over the internet using Hypertext Transfer Protocol or other functioning data exchange protocol.

13. A system as claimed in claim 11 or claim 12 using a media service to relay data to an authenticated receiver, and preferably wherein said media service is Twitter, Facebook and/or Google +.

Patentansprüche

1. Verfahren zum Überwachen eines Treppenliftbenutzers, Überwachen von einem abgelegenen Standort der Aktivität eines Treppenliftschlittens (10) auf einer Treppenliftschiene (11), wenn er von dem genannten Benutzer benutzt wird; **dadurch gekennzeichnet, dass** das Verfahren die folgenden Schritte beinhaltet:

- i) Überwachen der Position des genannten Schlittens (10) auf der genannten Schiene (11);
- ii) Überwachen von jedem Mal, bei dem der Schlitten (10) die Position auf der genannten Schiene (11) ändert, dann zum Stillstand kommt;
- iii) Überwachen der Position des genannten Schlittens (10) auf der genannten Schiene (11) in regelmäßigen Zeitintervallen oder zu definierten Zeitpunkten;
- iv) Überwachen der Zahl von Bewegungen des Schlittens (10) auf der genannten Schiene in einer vorgeschriebenen Zeit oder der Tatsache, dass es für einen vorgeschriebenen Zeitraum keine Bewegungen gegeben hat.

2. Verfahren gemäß Anspruch 1, das das Erzeugen eines Signals zum Empfang an einem abgelegenen Standort in dem Fall einer Änderung der Position des genannten Schlittens (10) auf der genannten Schiene (11) beinhaltet.

3. Verfahren gemäß Anspruch 1 oder Anspruch 2, das ferner das Erzeugen eines Signals zum Empfang an einem abgelegenen Standort bezüglich der Position des genannten Schlittens (10) auf der genannten Schiene (11) in regelmäßigen Zeitintervallen oder zu definierten Zeitpunkten umfasst.

4. Verfahren gemäß einem der Ansprüche 1 bis 3, das ferner das Erzeugen eines Signals zum Empfang an einem abgelegenen Standort umfasst, das für die Zahl von Bewegungen des Schlittens (10) in einer vorgeschriebenen Zeit oder die Tatsache, dass es für eine vorgeschriebene Zeit keine Bewegungen gegeben hat, repräsentativ ist.

5. Verfahren gemäß einem der Ansprüche 2 bis 4, wo-

bei das genannte/die genannten Signal(e) an den genannten abgelegenen Standort mindestens teilweise drahtlos übertragen wird/werden.

6. Verfahren gemäß einem der Ansprüche 2 bis 5, das das Verteilen von Daten, die das genannte/die genannten Signal(e) repräsentieren, an authentifizierte Vorrichtungen über das Internet unter Verwendung des Hypertext-Transfer-Protokolls oder anderer geeigneter Datentransferprotokolle umfasst.

7. Verfahren gemäß einem der vorhergehenden Ansprüche, wobei eine Einrichtung (28, 29) bereitgestellt ist, um Umgebungseinflüsse in der Nähe des Treppenlifts zu überwachen und/oder um einen oder mehrere physiologische Parameter eines Benutzers, während der genannte Treppenlift benutzt wird, zu überwachen, wobei das genannte Verfahren das Erzeugen von einem oder mehreren Signalen, das/die für die genannten Umgebungseinflüsse und/oder die genannten physiologischen Parameter repräsentativ ist/sind, und das Übertragen der genannten Signale an einen abgelegenen Standort umfasst.

8. System zum Überwachen eines Treppenliftbenutzers, wobei das genannte System eine Einrichtung zum Überwachen der Aktivität eines Treppenlifts, der von dem genannten Benutzer benutzt wird, beinhaltet, wobei der genannte Treppenlift einen Treppenliftschlitten (10), der auf einer Treppenliftschiene (11) montiert ist, aufweist, wobei das genannte System **dadurch gekennzeichnet ist, dass** die genannte Überwachungseinrichtung konfiguriert ist, um Folgendes zu überwachen:

- i) die Position des genannten Schlittens (10) auf der genannten Schiene (11);
- ii) jedes Mal, bei dem der Schlitten die Position auf der genannten Schiene ändert und dann zum Stillstand kommt;
- iii) die Position des genannten Schlittens (10) auf der genannten Schiene (11) in regelmäßigen Zeitintervallen oder zu definierten Zeitpunkten;
- iv) die Zahl von Bewegungen des Schlittens (10) auf der genannten Schiene (11) in einem vorgeschriebenen Zeitraum oder die Tatsache, dass es für einen vorgeschriebenen Zeitraum keine Bewegungen gegeben hat;

wobei das genannte System ferner eine Übertragungseinrichtung (30) zum Übertragen an einen abgelegenen Standort von einem oder mehreren Signalen, das/die für die genannte Aktivität repräsentativ ist/sind, beinhaltet.

9. System gemäß Anspruch 8, das eine Einrichtung

- (28, 29) beinhaltet, um Umgebungseinflüsse im Umkreis des genannten Treppenlifts und/oder physiologische Parameter des genannten Benutzers, während der genannte Treppenlift benutzt wird, zu überwachen, wobei das genannte System ferner betriebsfähig ist, um an einen abgelegenen Standort mindestens ein Signal, das für die genannten Umgebungseinflüsse und/oder die genannten physiologischen Parameter repräsentativ ist, zu übertragen.
10. System gemäß einem der Ansprüche 8 oder 9, wobei die genannten Signale an einen abgelegenen Datendienst unter Verwendung von GSM, GPRS, 3G, 4G, WiFi und/oder einer anderen funktionellen drahtgebundenen und/oder drahtlosen Kommunikationseinrichtung übertragen werden.
11. System gemäß Anspruch 10, wobei der genannte abgelegene Datendienst betriebsfähig ist, um ein oder mehrere der genannten Signale, das/die die Position des genannten Schlittens (10) auf der genannten Schiene (11) identifiziert/identifizieren, zu empfangen und zu interpretieren und von dem genannten einen oder den genannten mehreren Signalen abgeleitete Nachrichten an identifizierte Empfänger zu übermitteln.
12. System gemäß Anspruch 11, wobei der genannte abgelegene Datendienst konfiguriert ist, um von den genannten Signalen abgeleitete Daten über das Internet unter Verwendung des Hypertext-Transfer-Protokolls oder eines anderen funktionierenden Datenaustauschprotokolls zu verteilen.
13. System gemäß Anspruch 11 oder Anspruch 12, das einen Mediendienst verwendet, um Daten an einen authentifizierten Empfänger weiterzuleiten, und wobei bevorzugt der genannte Mediendienst Twitter, Facebook und/oder Google+ ist.
- iv) surveiller le nombre de mouvements du chariot (10) sur ledit rail au cours d'un temps prescrit ou le fait qu'il n'y a eu aucun mouvement pendant une période prescrite.
2. Procédé selon la revendication 1, comprenant l'étape consistant à générer un signal à des fins de réception au niveau d'un emplacement à distance en cas de changement au niveau de la position dudit chariot (10) sur ledit rail (11).
3. Procédé selon la revendication 1 ou la revendication 2, comprenant par ailleurs l'étape consistant à générer un signal à des fins de réception au niveau d'un emplacement à distance quant à la position dudit chariot (10) sur ledit rail (11) selon des intervalles de temps réguliers ou à des temps définis.
4. Procédé selon l'une quelconque des revendications 1 à 3, comportant par ailleurs l'étape consistant à générer un signal à des fins de réception au niveau d'un emplacement à distance représentant le nombre de mouvements du chariot (10) au cours d'un temps prescrit ou le fait qu'il n'y a eu aucun mouvement pendant un temps prescrit.
5. Procédé selon l'une quelconque des revendications 2 à 4, dans lequel lesdits signaux sont transmis audit emplacement à distance, au moins en partie, par réseau sans fil.
6. Procédé selon l'une quelconque des revendications 2 à 5, comportant l'étape consistant à distribuer des données représentant lesdits signaux à des dispositifs authentifiés par le réseau Internet en utilisant le protocole de transfert hypertexte ou d'autres protocoles de transfert de données appropriés.
7. Procédé selon l'une quelconque des revendications précédentes, dans lequel un moyen (28, 29) est mis en œuvre pour surveiller des conditions ambiantes à proximité du fauteuil monte-escalier et/ou pour surveiller un ou plusieurs paramètres physiologiques d'un utilisateur lors de l'utilisation dudit fauteuil monte-escalier, ledit procédé comportant les étapes consistant à générer un ou plusieurs signaux représentant lesdites conditions ambiantes et/ou lesdits paramètres physiologiques et à transmettre lesdits signaux à un emplacement à distance.
8. Système permettant de surveiller un utilisateur de fauteuil monte-escalier, ledit système comprenant un moyen permettant de surveiller l'activité d'un fauteuil monte-escalier utilisé par ledit utilisateur, ledit fauteuil monte-escalier ayant un chariot (10) de fauteuil monte-escalier monté sur un rail (11) de fauteuil monte-escalier, ledit système étant **caractérisé en ce que** ledit moyen de surveillance est configuré

Revendications

1. Procédé permettant de surveiller un utilisateur de fauteuil monte-escalier, de surveiller à partir d'un emplacement à distance l'activité d'un chariot (10) de fauteuil monte-escalier sur un rail (11) de fauteuil monte-escalier lors de l'utilisation par ledit utilisateur ; **caractérisé en ce que** le procédé comprend les étapes suivantes consistant à :
- i) surveiller la position dudit chariot (10) sur ledit rail (11) ;
 - ii) surveiller chaque fois que le chariot (10) change de position sur ledit rail (11) puis s'arrête ;
 - iii) surveiller la position dudit chariot (10) sur ledit rail (11) selon des intervalles de temps réguliers ou à des temps définis ;

pour surveiller :

- i) la position dudit chariot (10) sur ledit rail (11) ;
- ii) chaque fois que le chariot change de position sur ledit rail et puis s'arrête ; 5
- iii) la position dudit chariot (10) sur ledit rail (11) selon des intervalles de temps réguliers ou à des temps définis ;
- iv) le nombre de mouvements du chariot (10) sur ledit rail (11) au cours d'une période prescrite ou le fait qu'il n'y a eu aucun mouvement pendant une période prescrite ; 10

ledit système comprenant par ailleurs un moyen de transmission (30) servant à transmettre à un emplacement à distance un ou plusieurs signaux représentant ladite activité. 15

9. Système selon la revendication 8, comprenant un moyen (28, 29) servant à surveiller des conditions ambiantes à proximité dudit fauteuil monte-escalier et/ou des paramètres physiologiques dudit utilisateur lors de l'utilisation dudit fauteuil monte-escalier, ledit système fonctionnant par ailleurs pour transmettre à un emplacement à distance, au moins un signal représentant lesdites conditions ambiantes et/ou lesdits paramètres physiologiques. 20 25
10. Système selon l'une quelconque des revendications 8 ou 9, dans lequel lesdits signaux sont transmis à un service de données à distance en utilisant le système GSM, le service GPRS, la technologie 3G, la technologie 4G, le Wifi et/ou tout autre moyen fonctionnel de communication câblé et/ou sans fil. 30 35
11. Système selon la revendication 10, dans lequel ledit service de données à distance fonctionne pour recevoir et interpréter un ou plusieurs desdits signaux identifiant la position dudit chariot (10) sur ledit rail (11) et pour diffuser auprès de destinataires identifiés des messages dérivés en provenance desdits un ou plusieurs signaux. 40
12. Système selon la revendication 11, dans lequel ledit service de données à distance est configuré pour distribuer des données dérivées desdits signaux par le réseau Internet en utilisant le protocole de transfert hypertexte ou d'autres protocoles d'échange de données qui fonctionnent. 45 50
13. Système selon la revendication 11 ou la revendication 12 qui utilise un service multimédia pour relayer des données à un destinataire authentifié, et de préférence dans lequel ledit service multimédia est Twitter, Facebook et/ou Google+. 55

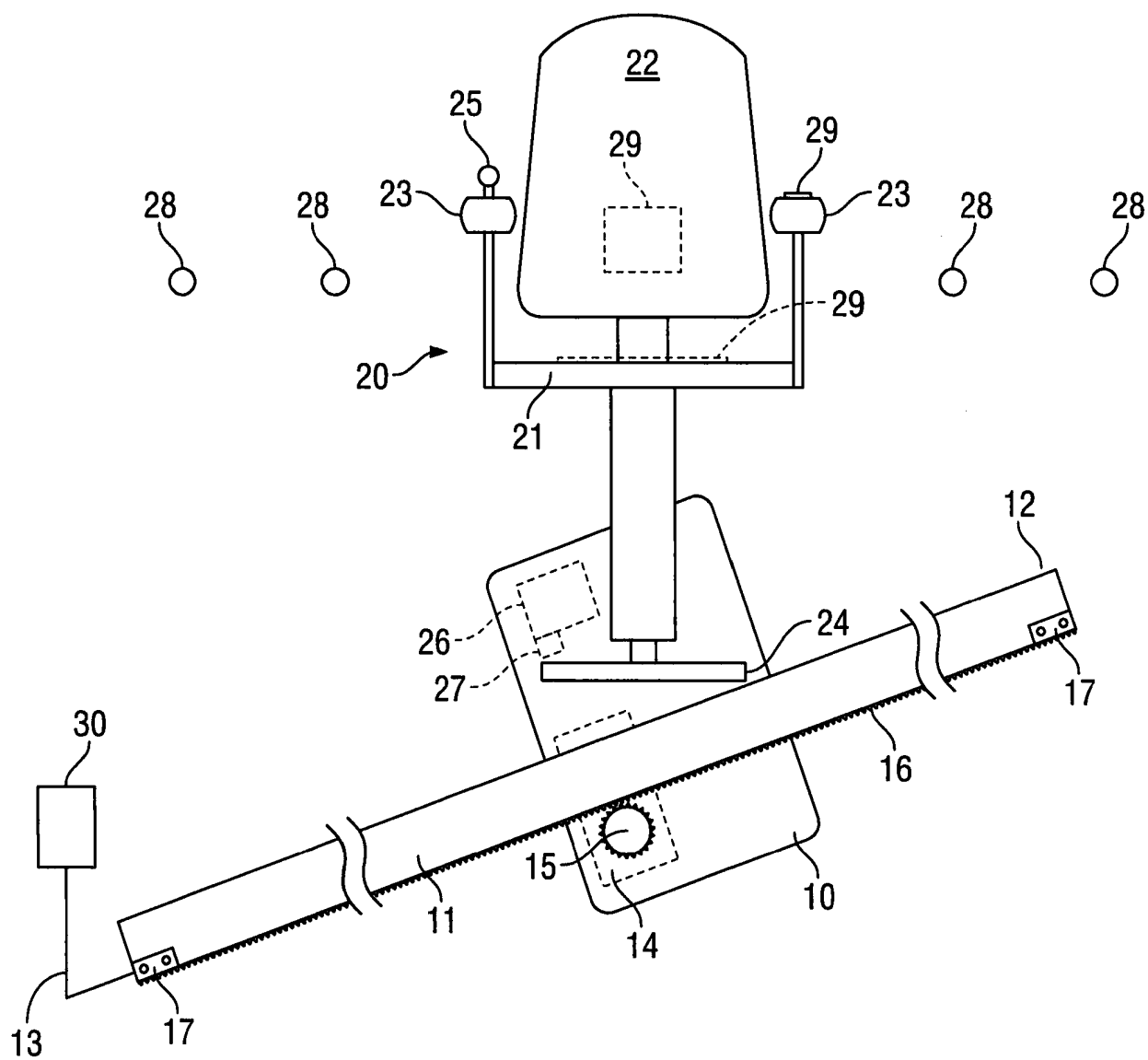


FIG. 1

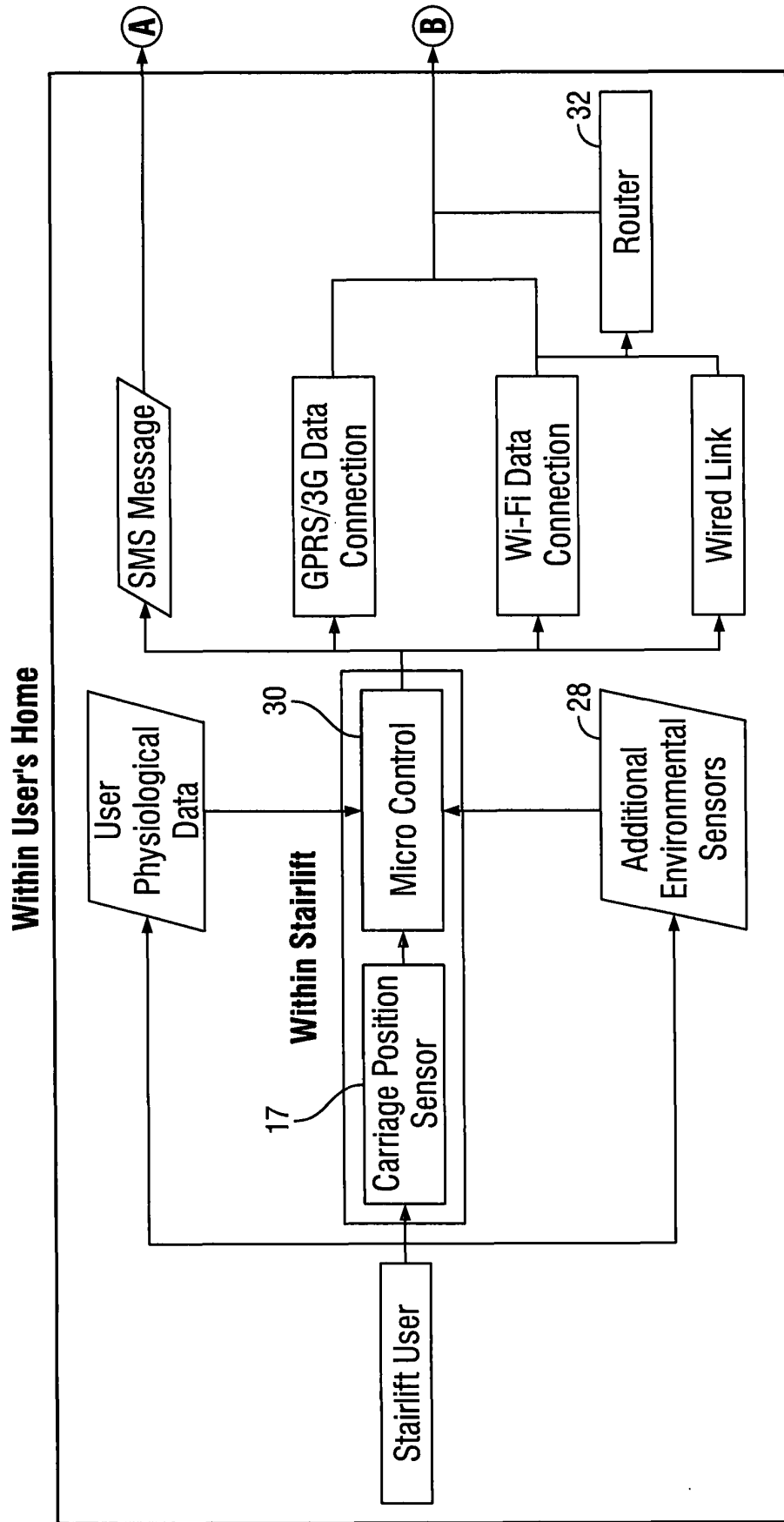


FIG. 2A

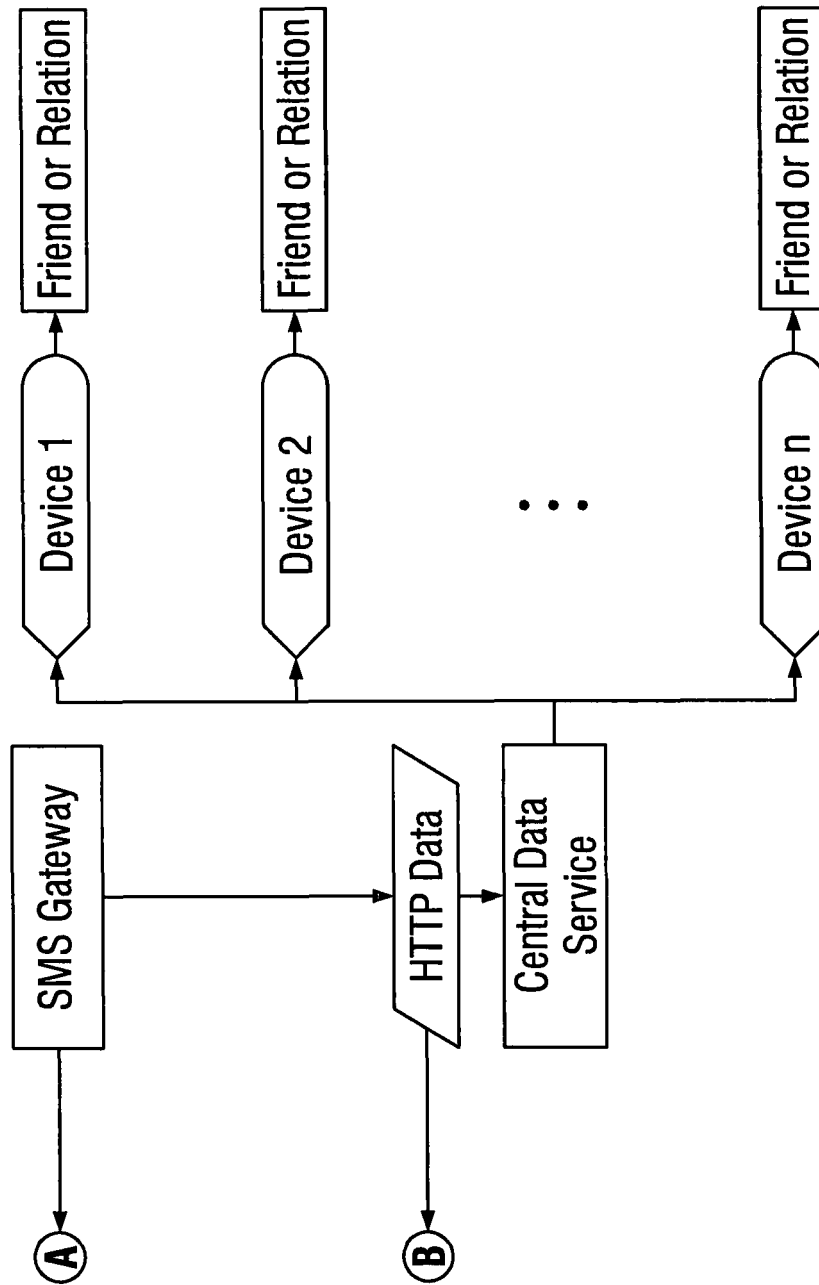


FIG. 2B

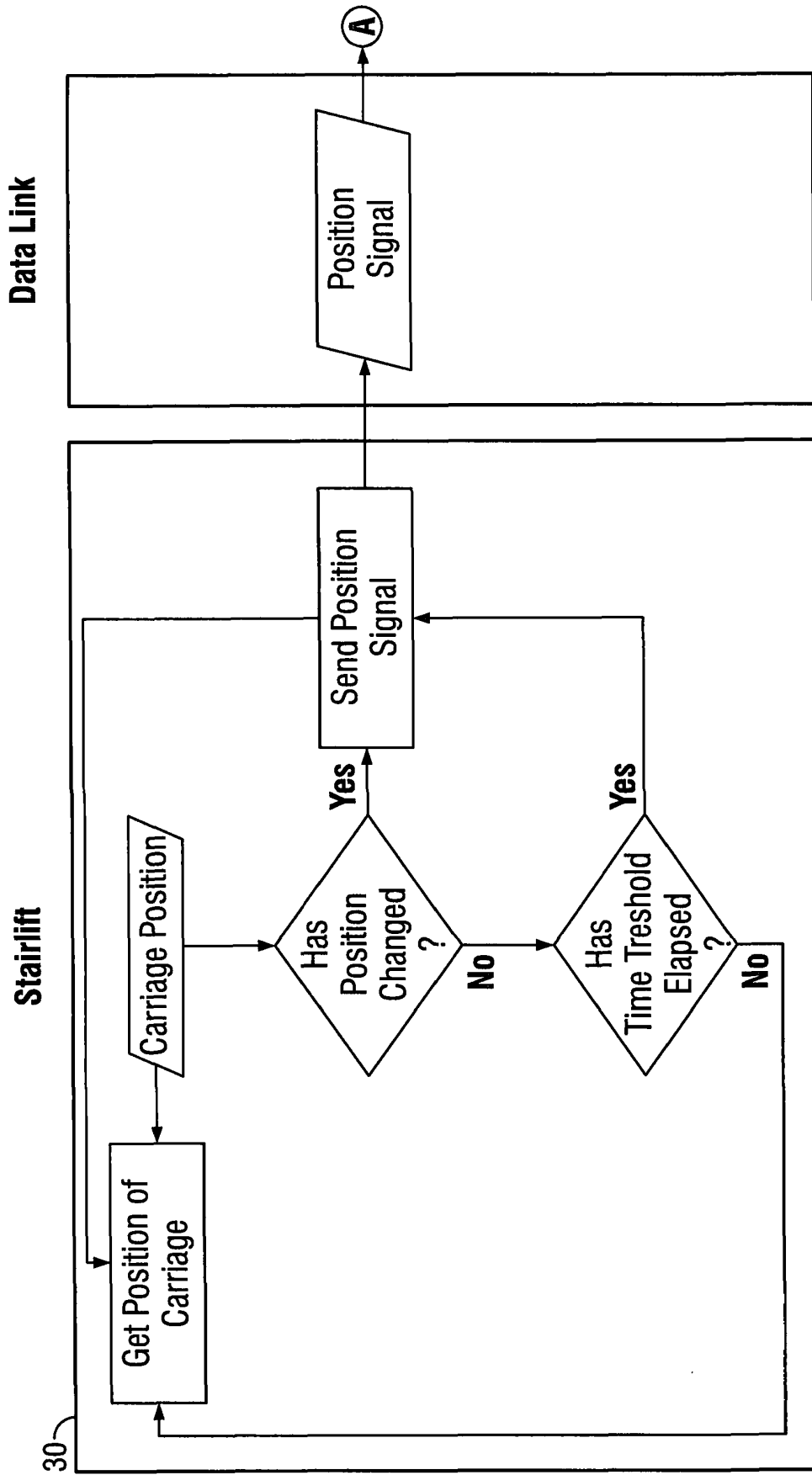


FIG. 3A

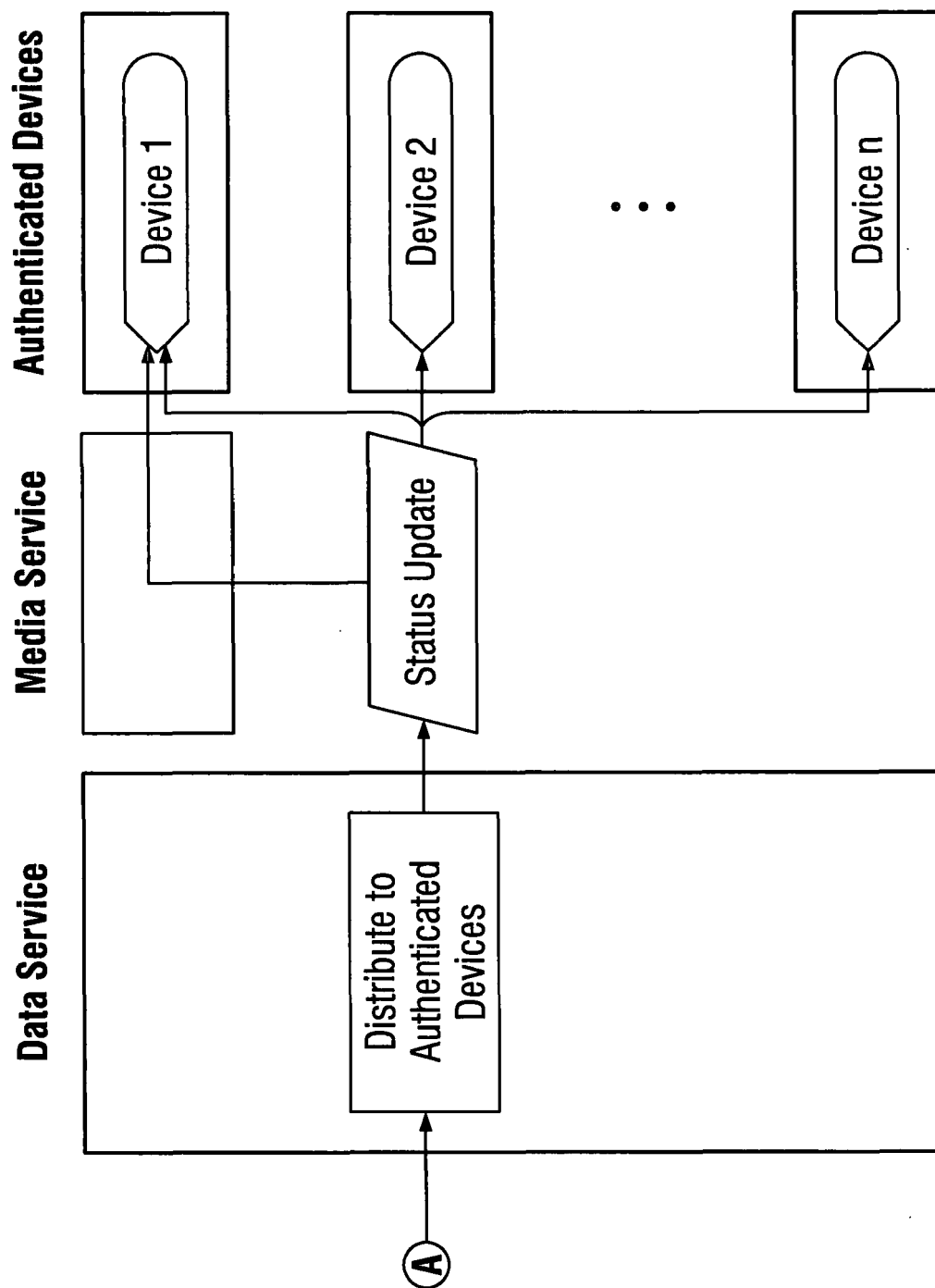


FIG. 3B

REFERENCES CITED IN THE DESCRIPTION

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