(12) PATENT APPLICATION **(11)** Application No. **AU 200045131 A1**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
An automatic answering service system for a mobile phone in which a stored message in the system should be checked whether the stored message is received by a receiving terminal as the mobile phone

(51)[7] International Patent Classification(s)
H04M 003/533 **H04Q 007/20**

(21) Application No: **200045131** (22) Application Date: **2000.07.07**

(30) Priority Data

(31) Number	(32) Date	(33) Country
11-202539	**1999.07.16**	**JP**

(43) Publication Date : **2001.01.18**
(43) Publication Journal Date : **2001.01.18**

(71) Applicant(s)
NEC Corporation

(72) Inventor(s)
Yuko Kimura

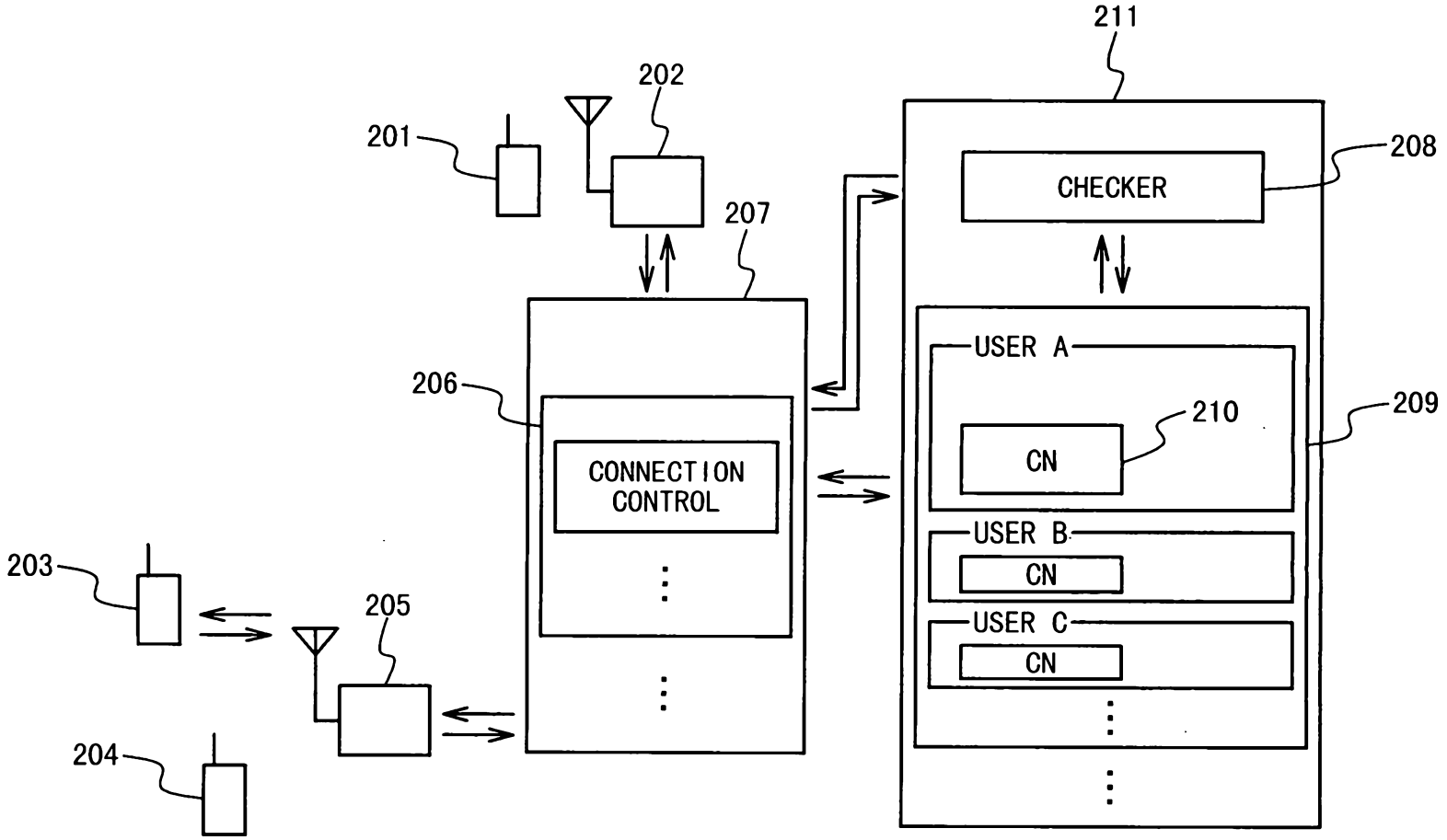
(74) Agent/Attorney
SPRUSON and FERGUSON,GPO Box 3898,SYDNEY NSW 2001

ABSTRACT

AN AUTOMATIC ANSWERING SERVICE SYSTEM FOR A MOBILE PHONE IN WHICH A STORED MESSAGE IN THE SYSTEM SHOULD BE CHECKED WHETHER THE STORED MESSAGE IS RECEIVED BY A RECEIVING TERMINAL AS THE MOBILE PHONE

In an automatic answering phone system in a mobile communication system, to provide a system which allows the transmitting mobile terminal (203) to confirm whether or not the receiving mobile terminal (201) has received the message. An automatic answering service centre (211) is provided with a storing section (209) which, at the time of registering a message from the transmitting mobile terminal (203) to the receiving mobile terminal (201), stores a pass number (pass word) of the transmitting mobile terminal (203) together with a receipt number given from the center (211) in association with the message. The center (211) has a confirmation number storing section (210) for storing a check data indicating the opened state of the message in association with the message for each of the users. When the receiving mobile terminal (201) has opened the message, the check data is set from a non-opened state to an opened state. Thereafter, when the transmitting mobile terminal (203) inputs the pass number and the receipt number, these inputted numbers are compared with the numbers stored in the confirmation number storing section (210) by a inquiry section (208) so that the transmitting mobile terminal (203) is allowed to obtain information as to whether or not the receiving mobile terminal (201) has already opened the message.

Fig. 2


211
202
201
208
CHECKER
207
206
USER A
210
209
CONNECTION CONTROL
CN
USER B
CN
USER C
CN
203
205
204

S&F Ref: 514232

AUSTRALIA

PATENTS ACT 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

Name and Address of Applicant :	NEC Corporation 7-1, Shiba 5-chome Minato-ku Tokyo Japan
Actual Inventor(s):	Yuko Kimura
Address for Service:	Spruson & Ferguson St Martins Tower 31 Market Street Sydney NSW 2000
Invention Title:	An Automatic Answering Service System for a Mobile Phone in which a Stored Message in the System should be Checked whether the Stored Message is Received by a Receiving Terminal as the Mobile Phone

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

AN AUTOMATIC ANSWERING SERVICE SYSTEM FOR A MOBILE PHONE IN WHICH A STORED MESSAGE IN THE SYSTEM SHOULD BE CHECKED WHETHER THE STORED MESSAGE IS RECEIVED BY A RECEIVING TERMINAL AS THE MOBILE PHONE

Background of the Invention

1. Field of the Invention

The present invention relates to a mobile communication system, and more particularly concerns an automatic answering service.

2. Description of the Related Art

An automatic answering phone system for a mobile phone and a PHS (personal handy phone system) are operated when a receiving mobile terminal (mobile phone) cannot respond to the call from a transmitting mobile terminal. This situation is happened, for example, in the case of the receiving mobile terminal side mobile terminal is out of the communication area or in the case of the power source of the terminal is off. This automatic answering phone system has a an automatic answering service for a message of the call.

An apparatus for storing a message which is provided on the automatic answering phone system is provided on the telephone network.

In Fig. 1, the above situation is illustrated. Fig. 1 is a block diagram which explains an automatic answering phone system for a conventional mobile phone. In Fig. 1, a mobile communication system is constituted by, for example, mobile

phone terminals 101 to 104, base stations 102 and 105, a base station controller (or a PHS connecting apparatus: not shown), an exchange 107 and a telephone public network(not shown). An automatic answering service center 109 for storing messages is connected to the exchange 107.

when an user (subscriber) of the mobile phone joins the automatic answering service, a message storing area in the automatic answering service center 109 is set for the user.

When a receiving mobile terminal A 101 could not receive a call from a transmitting mobile terminal B 103, the exchange 107 connects the call to the automatic answering service center 109. A reason for an non-connection between the receiving mobile terminal A 101 and the transmitting mobile terminal B 102 is either the receiving mobile terminal is out of the service area, the power supply of the terminal is off, or the receiving mobile terminal does not off-hook the phone.

The automatic answering service center 109 sends an answering voice guide message which is preliminarily recorded in the center when the center detects the connection with the transmitting mobile terminal B 102. After that, the automatic answering service center 109 receives a message from the transmitting mobile terminal B 103, and stores the received message in the message storing area of the storing section 108 that has been assigned to the receiving mobile terminal A 101, in a digital signal format.

Thereafter, when the receiving mobile terminal A 101 becomes free to answer the phone and a predetermined reproducing

operation through the operation section of the mobile terminal is carried out, the message which is stored in the storing section 108 of the automatic answering service center 109, is reproduced and outputted to the receiving mobile terminal A 101.

Here, for example, Japanese Laid-Open Patent Application (JP-A-H10-032633) has proposed a portable-phone-use automatic answering phone system which enables remote controlling operations such as re-confirmation, delete, etc. of the message from the receiving mobile terminal side. Moreover, for example, Japanese Laid-Open Patent Application (JP-A-H11-017802) has proposed an arrangement in which an automatic answering phone message, which is selected by the receiving mobile terminal based upon the reasons for an non-connection, is sent to the transmitting mobile terminal. Furthermore, a technology for the automatic answering system for the mobile phone is described in Japanese Laid-Open Patent Application (JP-A-H11-68932)

However, in these conventional automatic answering service systems, the transmitting mobile terminal is only allowed to record a message, and cannot confirm whether or not the stored message on the automatic answering phone has been received by the receiving mobile terminal from the transmitting mobile terminal side.

For this reason, unless any contact is made to the transmitting mobile terminal from the receiving mobile terminal side, the transmitting mobile terminal has to call the receiving mobile terminal several times for the same reason, particularly when the message is an urgent one. In this case, the

transmitting mobile terminal is subjected to an increased burden in operations and costs. Moreover, even on the receiving mobile terminal side, the receiving mobile terminal has to confirm the same messages from the same transmitting mobile terminal several times, and is also subjected to an increased burden.

Here, it is a wasteful use of the storing section to record the same messages in a message storing area of the storing section of the automatic answering service center several times repeatedly. Moreover, in the automatic answering service center, there is a limitation to the capacity of the message storing area assigned to each subscriber. For this reason, in practical use, the number of messages to be stored is limited. Thus, the wasteful use of the storing section leads to interruption in effective use of the message storing area assigned to each subscriber.

Summary of the Invention

It is an object of the present invention is to provide a system, which allows a transmitting mobile terminal to confirm whether or not the receiving mobile terminal has received his or her message from the transmitting mobile terminal side.

In order to achieve an aspect of the present invention, an automatic answering service system for a mobile phone includes a transmitting mobile terminal, a receiving mobile terminal, a storing area, a check data storing area and inquiry section.

The transmitting mobile terminal transmits a message which should be received by a receiving mobile terminal. The storing area stores the message from the transmitting mobile terminal. The check data storing area stores a check data showing whether the stored message is received by the receiving mobile terminal. The inquiry section processes a reproduction of the stored message based on a request from the receiving mobile terminal. The inquiry section sets the check data which is set reproduced state when the reproduction is performed. The reproduced state is referred by the transmitting mobile terminal to detect the reproduction.

In the above system for a mobile phone, the inquiry section receives a first access data from the transmitting mobile terminal for the storing message and/or transmits a second access data for the storing message to the transmitting mobile terminal. Furthermore, the inquiry section inquiries a received first access data and/or a received second access data from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

In the above system for a mobile phone, the inquiry section sets the check data to a non-open state in which the message is not received by the receiving mobile terminal when the message is stored. The inquiry section sets the check data to an open state when the message is received by the receiving mobile terminal.

In the above system for a mobile phone, the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number with the storing message. Furthermore, the inquiry section inquiries a received subscriber number from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored with the stored message when the transmitting mobile terminal checks the check data.

In the above system for a mobile phone, the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number with the storing message. Furthermore, the inquiry section inquiries a received subscriber number from the transmitting mobile terminal with the transmitted subscriber which is stored together with the stored message when the transmitting mobile terminal checks the check data.

In the above system for a mobile phone, the storing area, the check data storing area and the inquiry section are provided on an automatic answering service center.

In order to achieve an aspect of the present invention, a method of automatic answering service for a mobile phone includes transmitting by a transmitting mobile phone a message which should be received by a receiving mobile terminal. The method further includes storing the message in a storing area and storing a check data in a check data storing area which shows whether the stored message is received by the receiving mobile terminal. Furthermore the method includes processing a

receiving of the stored message based on a request from the receiving mobile terminal, setting the check data which is set reproduced state when the reproduction is performed. The check data is referred by the transmitting mobile terminal to detect the reproduction.

In the above, the method includes receiving a first access data from the transmitting mobile terminal for the storing message and/or transmits a second access data for the storing message to the transmitting mobile terminal. The method further includes inquiry a transmitted first access data and/or a transmitted second access data from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

In the above, the method includes setting the check data to a non-open state in which the message is not received by the receiving mobile terminal when the message is stored. The method further includes setting the check data to an open state when the message is received by the receiving mobile terminal.

In the above, the method includes receiving a subscriber number from the transmitting mobile terminal and stores the subscriber number with the storing message. The method further includes inquiry the transmitted subscriber number from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

In the above, the method includes receiving a subscriber number from the transmitting mobile terminal and stores the subscriber number with the storing message. The method further includes inquiring the received subscriber number from the transmitting mobile terminal with the transmitted subscriber number which is stored together with the stored message when the transmitting mobile terminal checks the check data.

In order to achieve an aspect of the present invention, an automatic answering center for a mobile phone includes a storing area, a check data storing area and an inquiry section. A storing area stores the message from a transmitting mobile terminal to a receiving mobile terminal. A check data storing area stores a check data showing whether the stored message has been received by the receiving mobile terminal. An inquiry section reproduces the stored message based on a request from the receiving mobile terminal. The inquiry section sets the check data when the reproduction is performed, whereby the transmitting mobile terminal detects the reproduction by referring to the check data.

In the above, the inquiry section receives a first access data from the transmitting mobile terminal for the storing message and/or transmits a second access data for the storing message to the transmitting mobile terminal. The inquiry section inquires the received first access data and/or the received second access data with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the

check data.

In the above, the inquiry section sets the check data to a non-open state indicating that the message is not yet received by the receiving mobile terminal when the message is stored. The inquiry section sets the check data to an open state when the message has been received by the receiving mobile terminal.

In the above, the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message. The inquiry section inquiries the received subscriber number from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

In the above, the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message. The inquiry section inquiries the received subscriber number from the transmitting mobile terminal with a stored subscriber number which is stored together with the stored message when the transmitting mobile terminal checks the check data.

Brief Description of the Drawings

Fig. 1 is a block diagram which explains an automatic answering phone system in a conventional portable phone;

Fig. 2 is a block diagram that shows a system construction in one embodiment of the present invention;

Fig. 3 is a block diagram that shows the construction of a storing section of one embodiment of the present invention;

Fig. 4 is a flow chart that shows a sequence of processes in one embodiment of the present invention; and

Fig. 5 is a flow chart that shows a sequence of processes in one embodiment of the present invention.

Description of the Preferred Embodiments

The following description will describe embodiments of the present invention. In the embodiments of the present invention, a mobile communication system provided with a radio station for radio-communicating with a mobile terminal and an exchange communicating with the radio station, an automatic answering service center, which communicates with the exchange, is provided with: a storage section (209 in Fig. 2) having an area (Fig. 3(b) and Fig. 3(c)) for storing a pass number inputted through a transmitting mobile terminal side terminal and a receipt number given by the system side in association with a message, in addition to an area (Fig. 3(e)) for storing a message from a transmitting mobile terminal side terminal to a receiving mobile terminal side terminal at the time of recording the message, and an open-message check area (Fig. 3(a)) maintaining a confirming marker for managing whether or not the receiving mobile terminal side terminal has already confirmed the message in association with the message, for each of automatic answering service subscribers. The automatic answering phone system is also provided with a means (208 in Fig. 2) which, in the case

when, after having recorded the message at the transmitting mobile terminal terminal, a message confirming mode is selected and the pass number and the receipt number are inputted, compares the inputted pass number and the receipt number with those stored in the storage section, and if there are any coincided pass number and receipt number, obtains information as to whether or not the receiving mobile terminal has already confirmed the message based upon the value of the confirmed marker in association with the message corresponding to the coincided numbers, and sends the information to the transmitting mobile terminal.

When a transmitting mobile terminal leaves a message in the message storing area assigned to the receiving mobile terminal, the transmitting mobile terminal inputs a pass number in addition to a receipt number provided by the automatic answering service center, and these numbers are stored in the storing section of the automatic answering service center in association with each message. The storing section in the automatic answering service center also maintains a confirming marker indicating whether or not the receiving mobile terminal has opened the message, in association with each message.

After the message has been registered, the transmitting mobile terminal inputs the receipt number and the pass number through the phone terminal, and after these numbers have been confirmed, is allowed to obtain information as to whether or not the receiving mobile terminal has already received the message from the transmitting mobile terminal, based upon the

value of the confirming marker.

In order to give a more detailed explanation of the embodiment of the present invention, referring to Figures, the following description will discuss one example of the present invention. Fig. 2 is a block diagram that shows an arrangement of one example of the present invention. As shown in Fig. 2, the example of the present invention is provided with mobile terminals 201, 203 and 204, radio stations 202 and 205, and an exchange 207, and the exchange 207 is connected to an automatic answering service center 211 through the automatic answering service connection section of a control section 206.

In the example of the present invention, the automatic answering service center 211 is provided with a inquiry section 208, and a confirmation number storing section 210 is placed in a storing section 209 in addition to a message storing area, for each of the users.

Fig. 3 is a block diagram that shows the construction of the confirmation number storing section 210 of the storing section 209 in one example of the present invention. The confirmation number storing section 210 is provided with (a) an open-message check area, (b) a pass word storing area and (c) a receipt number storing area for each entry. Here, these areas are maintained in association with a message storing area (e). The message storing area (e) has an area in which information constituted by an open-message check, a pass word and a receipt number is stored. If a telephone number is automatically transmitted from the transmitting mobile

terminal, the telephone number is used as the pass word and/or the receipt number.

To the open-message check area is added a mark indicating the opened state or unopened state for each of the messages stored in the message storing area (e). In order to allow the transmitting mobile terminal to confirm whether or not the message has been opened, a check is given to the message when the receiving mobile terminal has confirmed the message. For example, at the time when a message is registered on the transmitting mobile terminal side, an "non-open-mark" is given thereto, and when the receiving mobile terminal has confirmed the message, an "open-mark" is set in the open-message check area.

A value, which has set by a transmitting mobile terminal for each message, is maintained as information in the pass word storing area (b) and the receipt number area (c).

In order to permit the process for allowing the transmitting mobile terminal to confirm whether or not the receiving mobile terminal has received the message, and in order to prevent the third person from confirming whether or not the receiving mobile terminal has received the message, it is necessary to establish a security system in which information which is recognized by the transmitting mobile terminal who registers a message is also registered so as to make the third person other than the transmitting mobile terminal inaccessible.

For this reason, in this example of the present invention,

at the time of registering a message, the transmitting mobile terminal is encouraged to input arbitrary numbers through the phone terminal as a pass word (pass number). In this case, in order to prevent cases in which the same transmitting mobile terminal registers a plurality of messages using the same pass word, or in which the same pass word is used by different transmitting mobile terminals, the service center also gives a number (receipt number) so that the registered message is unambiguously discriminated by using the receipt number and the pass word. Here, a combination of the pass word and the receipt number is referred to as "registered number".

An explanation will be given of the inquiry section 208 in one example of the present invention.

In order to know whether or not the message stored in the storing section 209 has been received, the transmitting mobile terminal inputs the pass word that has been set at the time of registering the message and the receipt number given by the service center through the transmitting mobile terminal.

The number information inputted through the transmitting mobile terminal is temporarily stored in the inquiry section 208 of the automatic answering service center 211 through the exchange 207 in which the inputted password and the receipt number are collated with the registered number (Fig. 3(d)) added to the message registered in the confirmation number storing section 210 stored in the storing section 209.

Then, in the case when the corresponding message is present, after checking the contents of the check area (a) in the

confirmation number storing section 210, a guidance is given to the transmitting mobile terminal as to whether or not the message has been opened, in the form of voice, character, or other information.

Figs. 4 and 5 show a flow chart that explains the sequence of processes of one example of the present invention.

Referring to Figs. 4 and 5, in this example of the present invention, the operation will be explained by exemplifying a case in which a transmitting mobile terminal B calls a receiving mobile terminal A who is a subscriber for the automatic answering service.

In the case of the automatic answering phone mode on the receiving mobile terminal A side, the exchange connects the receiving mobile terminal's phone to the service center (Steps 401, 402).

The service center first demands the transmitting mobile terminal B to make selections as to whether or not (I) a message is registered and as to whether or not (II) the confirmation of opening of the message is required. When the transmitting mobile terminal B selects the register of the message (I) within a predetermined period of time, the service center stores the message in the message storing area (e) of the storing section 209 (Step 404).

Thereafter, the service center demands the transmitting mobile terminal B to input a password, and gives the transmitting mobile terminal a receipt number (Step 405).

The transmitting mobile terminal B inputs a password with

a desired number (Step 406).

The password is stored in the password storing area in the confirmation number storing section 210 in the storing section 209.

The receipt number is also stored in the receipt number storing area in the confirmation number storing section 210 in the storing section 209.

Moreover, for example, supposing that the unopened state is defined as "0" with the opened state being defined as "1", "0" is set in the check area in the confirmation number storing section 210 as a mark indicating the message unopened state (Step 407).

In the case when the transmitting mobile terminal B selects the confirmation of opening of the message (II) within a predetermined period of time at Step 403, as shown in Fig. 4, the service center demands the transmitting mobile terminal A to input the password and the receipt number (Steps 408, 409).

The transmitting mobile terminal B inputs a registered number consisting of the password and the receipt number, obtained at the time of registering the message, through the phone terminal (Step 410).

The registered number inputted through the phone terminal is temporarily stored in the inquiry section installed in the service center (Step 411).

The inquiry section 208 in the service center 211 retrieves the confirmation number storing section 210 of the storing section 209 for any number in the registered numbers of

respective messages stored in the storing section 209 that is coincident with the inputted number (Step 412).

In the case when there is not any number coincident with the inputted registered number in the confirmation number storing section 210 in the storing section 209 (NO in Step 413), the information "no message is present, or the message has already been opened" is given to the transmitting mobile terminal B.

In the case when there is a number coincident with the inputted registered number in the confirmation number storing section 210 in the storing section 209 (YES in Step 413), the information "the message has not been opened" or "the message has been opened" is given to the transmitting mobile terminal B, depending on whether or not the confirmation mark is set in the open-message check area in the confirmation number storing section 210 (Step 415, 418).

Here, in the case when the transmitting mobile terminal B selects neither (I) nor (II) within the predetermined time at Step 402 in Fig. 3, the call is automatically connected to the service center, without the need for inputting any confirmation numbers.

This arrangement is made so as not to give any adverse effects on other functions such as "automatic transfer function".

Moreover, when the receiving mobile terminal A has opened the message, the service center sets the open-mark at the value of the check area (a) in the confirmation number storing section

210 corresponding to the opened message. That is, for example, the value "1" indicating the opened state is set in place of the value "0" indicating the un-opened state (Step 420).

Thereafter, the service center demands the transmitting mobile terminal A to make a selection as to whether or not the message should be deleted (Step 421).

In the case of deletion, the check area (a), the registered number (d) and the message storing area (e) corresponding to the message are deleted from the confirmation number storing section 210.

At Step 421, when the message is reserved, the open mark, the registered number and the message are stored (Step 422).

As described above, in accordance with the present invention, it is possible to reduce load imposed on the transmitting mobile terminal side, that is, the fact that the same message has to be transmitted a plurality of times, and also to reduce load imposed on the receiving mobile terminal side, that is, the fact that the message having the same contents has to be received a plurality of times; thus, it becomes possible to improve the functions of the automatic answering phone and services for the customers.

Moreover, the present invention makes it possible to reduce wasteful use of the storing section assigned to the receiving mobile terminal, to increase the period in which important data is stored, and also to receive more messages or other items; thus, effective applications should be achieved.

CLAIMS: The claims defining the invention are as follows:

1. An automatic answering service system for a mobile phone comprises:

a transmitting mobile terminal transmitting a message which should be received by a receiving mobile terminal;

a storing area which stores the message;

a check data storing area which stores a check data showing whether the stored message has been received by the receiving mobile terminal; and

an inquiry section processing reproduction of the stored message based on a request from the receiving mobile terminal and setting the check data when the reproduction is performed, whereby the transmitting mobile terminal detects the reproduction by referring to the check data.

2. An automatic answering service system for a mobile phone as claimed in claim 1, wherein:

the inquiry section receives a first access data from the transmitting mobile terminal for the storing message and/or transmits a second access data for the storing message to the transmitting mobile terminal; and

the inquiry section inquires the received first access data and/or the received second access data with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

3. An automatic answering service system for a mobile phone as claimed in claim 1, wherein:

the inquiry section sets the check data to a non-open state indicating that the message is not yet received by the receiving mobile terminal when the message is stored and sets the check data to an open state when the message has been received by the receiving mobile terminal.

4. An automatic answering service system for a mobile phone as claimed in claim 1, wherein:

the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message; and

the inquiry section inquiries the received subscriber number from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

5. An automatic answering service system for a mobile phone as claimed in claim 1, wherein:

the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message, and

the inquiry section inquiries the received subscriber number from the transmitting mobile terminal with a stored subscriber number which is stored together with the stored

message when the transmitting mobile terminal checks the check data.

6. An automatic answering service system for a mobile phone as claimed in claim 1, wherein:

wherein the storing area, the check data storing area and the inquiry section are provided on an automatic answering service center.

7. A method of automatic answering service for a mobile phone comprises:

transmitting by a transmitting mobile phone a message which should be received by a receiving mobile terminal;

storing the message in a storing area;

storing a check data in a check data storing area which shows whether the stored message has been received by the receiving mobile terminal;

receiving the stored message based on a request from the receiving mobile terminal;

setting the check data which is set reproduced state when the reproduction is performed; and

referring the check data by the transmitting mobile terminal to detect the reproduction.

8. A method of automatic answering service for a mobile phone as claimed in claim 7, comprises:

receiving a first access data from the transmitting mobile

terminal for the storing message and/or transmits a second access data for the storing message to the transmitting mobile terminal;

inquiring a received first access data and/or a received second access data from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

9. A method of automatic answering service for a mobile phone as claimed in claim 7, comprises:

setting the check data to a non-open state indicating that the message is not yet received by the receiving mobile terminal when the message is stored; and

setting the check data to an open state when the message has been received by the receiving mobile terminal.

10. A method of automatic answering service system for a mobile phone as claimed in claim 7, comprises:

receiving a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message; and

inquiry the received subscriber number from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

11. An automatic answering service system for a mobile phone as claimed in claim 7, comprises:

receiving a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message, and

inquiry the received subscriber number from the transmitting mobile terminal with the transmitted subscriber number which is stored together with the stored message when the transmitting mobile terminal checks the check data.

12. An automatic answering center for a mobile phone comprises:

a storing area which stores the message from a transmitting mobile terminal to a receiving mobile terminal;

a check data storing area which stores a check data showing whether the stored message has been received by the receiving mobile terminal; and

an inquiry section processing reproduction of the stored message based on a request from the receiving mobile terminal and setting the check data when the reproduction is performed, whereby the transmitting mobile terminal detects the reproduction by referring to the check data.

13. An automatic answering center for a mobile phone as claimed in claim 12, wherein:

the inquiry section receives a first access data from the

transmitting mobile terminal for the storing message and/or transmits a second access data for the storing message to the transmitting mobile terminal; and

the inquiry section inquires the received first access data and/or the received second access data with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

14. An automatic answering center for a mobile phone as claimed in claim 12, wherein:

the inquiry section sets the check data to a non-open state indicating that the message is not yet received by the receiving mobile terminal when the message is stored and sets the check data to an open state when the message has been received by the receiving mobile terminal.

15. An automatic answering center for a mobile phone as claimed in claim 12, wherein:

the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message; and

the inquiry section inquiries the received subscriber number from the transmitting mobile terminal with the first access data and/or the second access data which are/is stored together with the stored message when the transmitting mobile terminal checks the check data.

16. An automatic answering center for a mobile phone as claimed in claim 12, wherein:

the inquiry section receives a subscriber number from the transmitting mobile terminal and stores the subscriber number together with the storing message, and

the inquiry section inquiries the received subscriber number from the transmitting mobile terminal with a stored subscriber number which is stored together with the stored message when the transmitting mobile terminal checks the check data.

17. An automatic answering service system substantially as herein described with reference to any one of the embodiments shown in Figs. 2-5 of the accompanying drawings.

18. A method for an automatic answering service, said method substantially as herein described with reference to any one of the embodiments shown in Figs. 2-5 of the accompanying drawings.

19. An automatic answering center substantially as herein described with reference to any one of the embodiments shown in Figs. 2-5 of the accompanying drawings.

DATED this Fifth Day of July, 2000

NEC Corporation

Patent Attorneys for the Applicant

SPRUSON & FERGUSON

Fig. 1 PRIOR ART

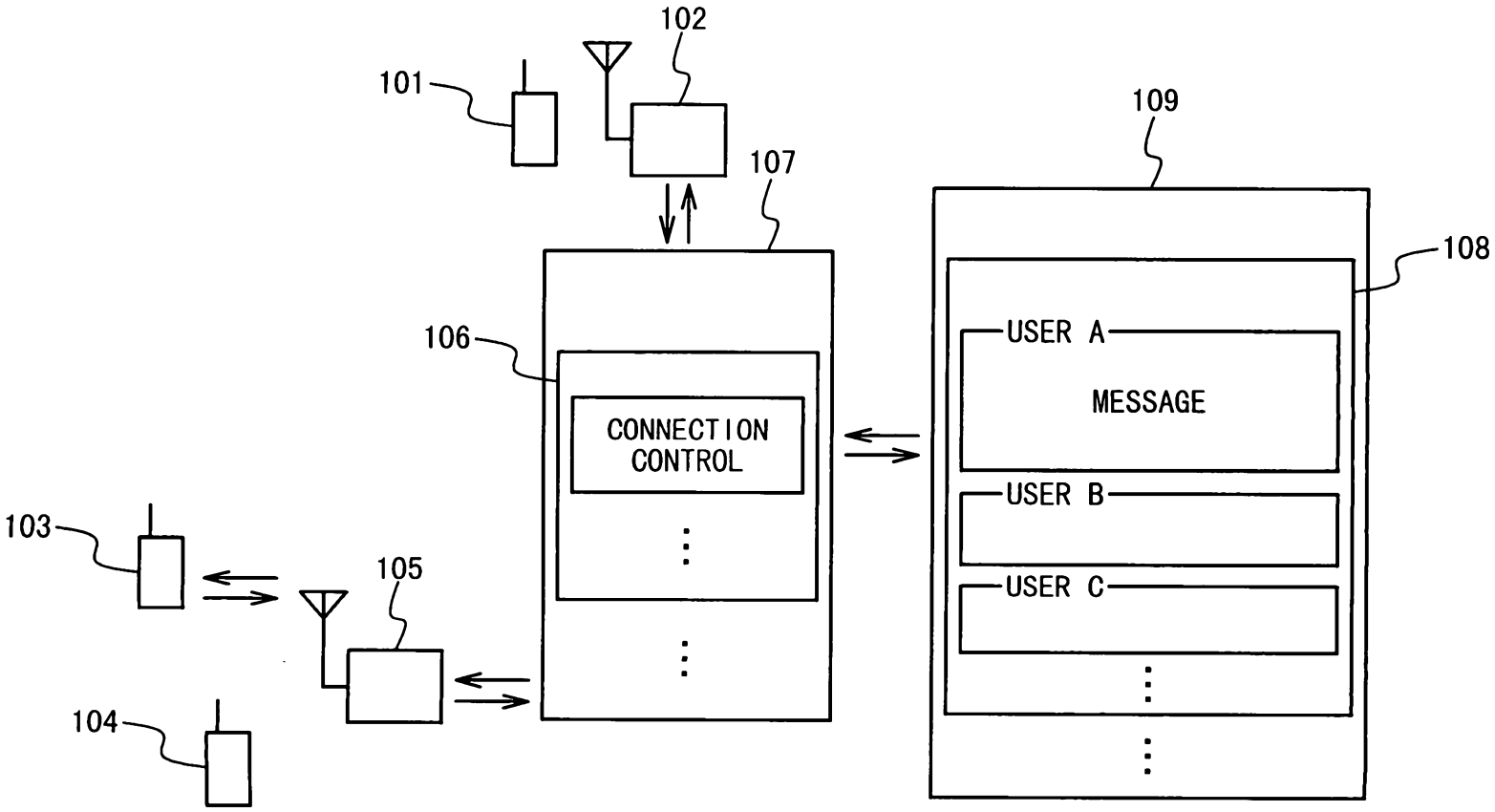


Fig. 2

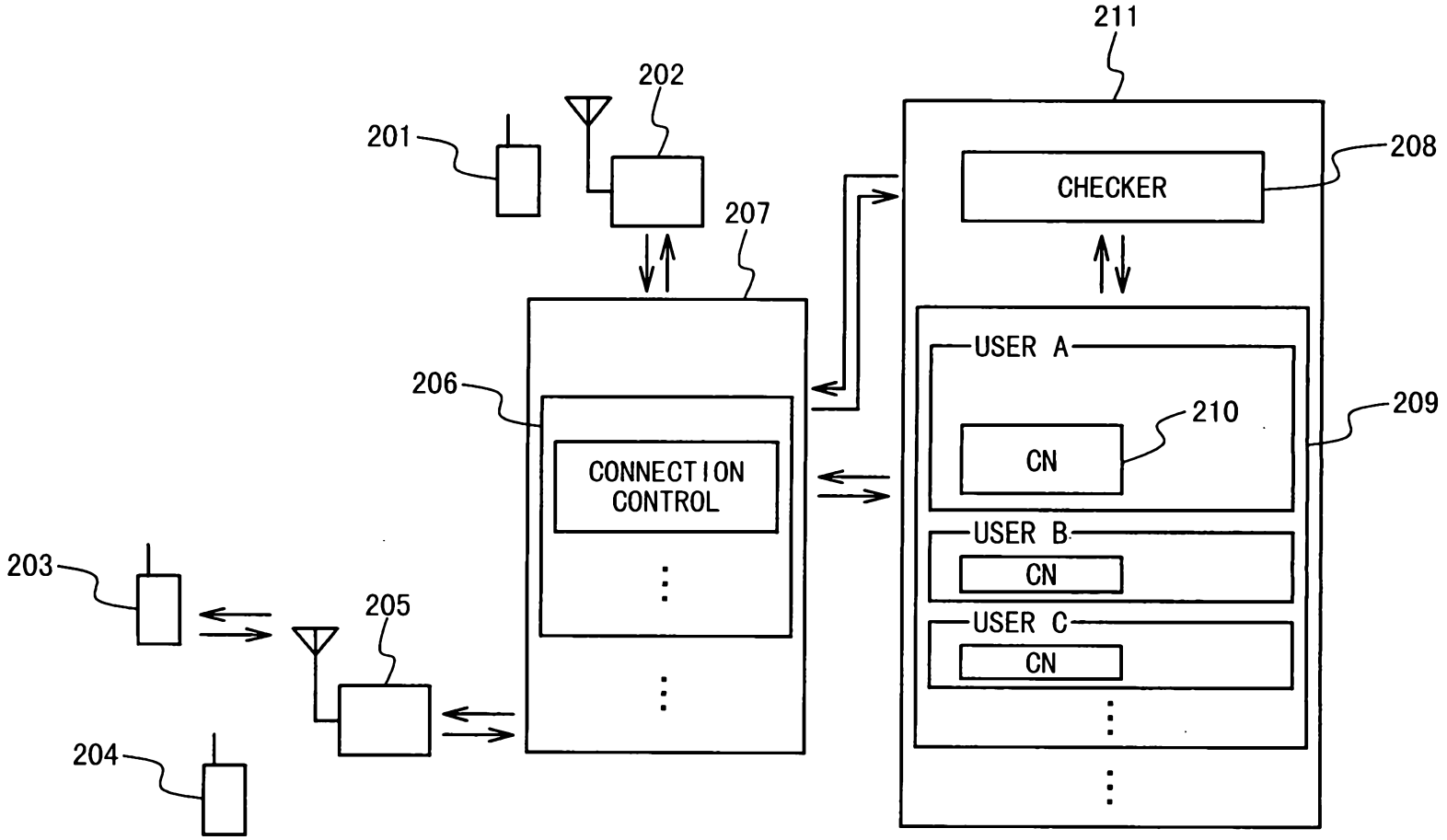

211
202
201
208
CHECKER
207
206
USER A
210
209
CONNECTION CONTROL
CN
USER B
CN
USER C
CN
203
205
204

Fig. 3

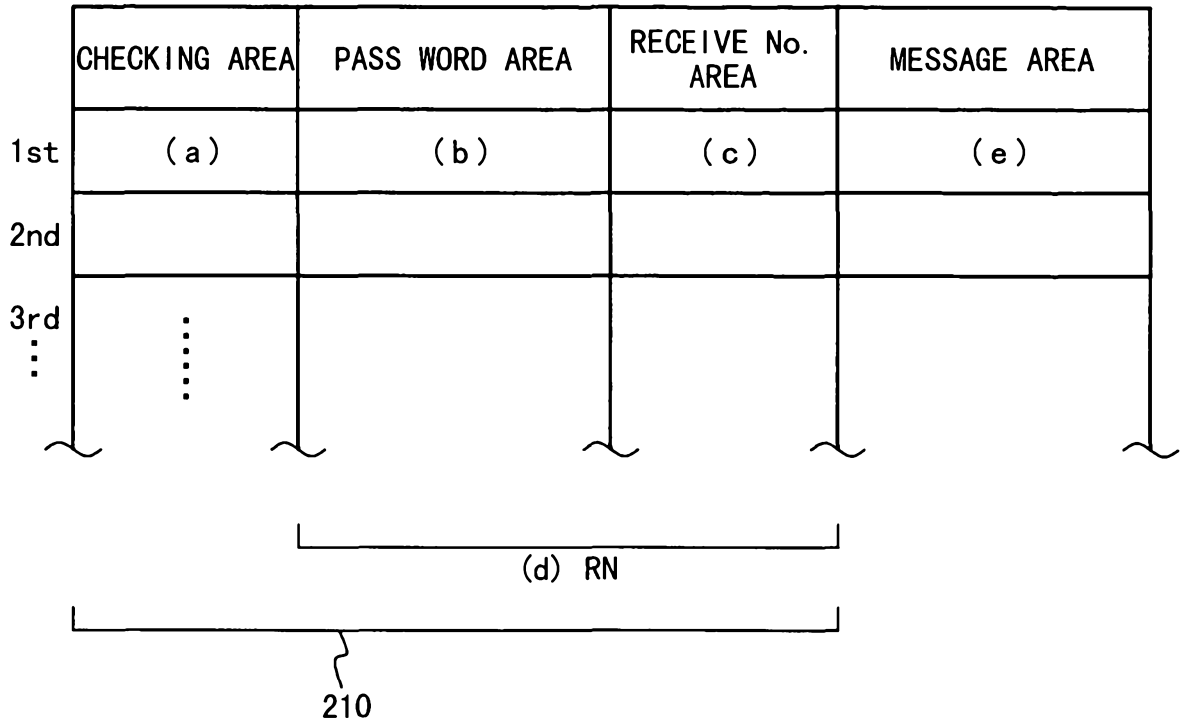

CHECKING AREA
PASS WORD AREA
RECEIVE No. AREA
MESSAGE AREA
1st
(a)
(b)
(c)
(e)
2nd
3rd
(d) RN
210

Fig. 4

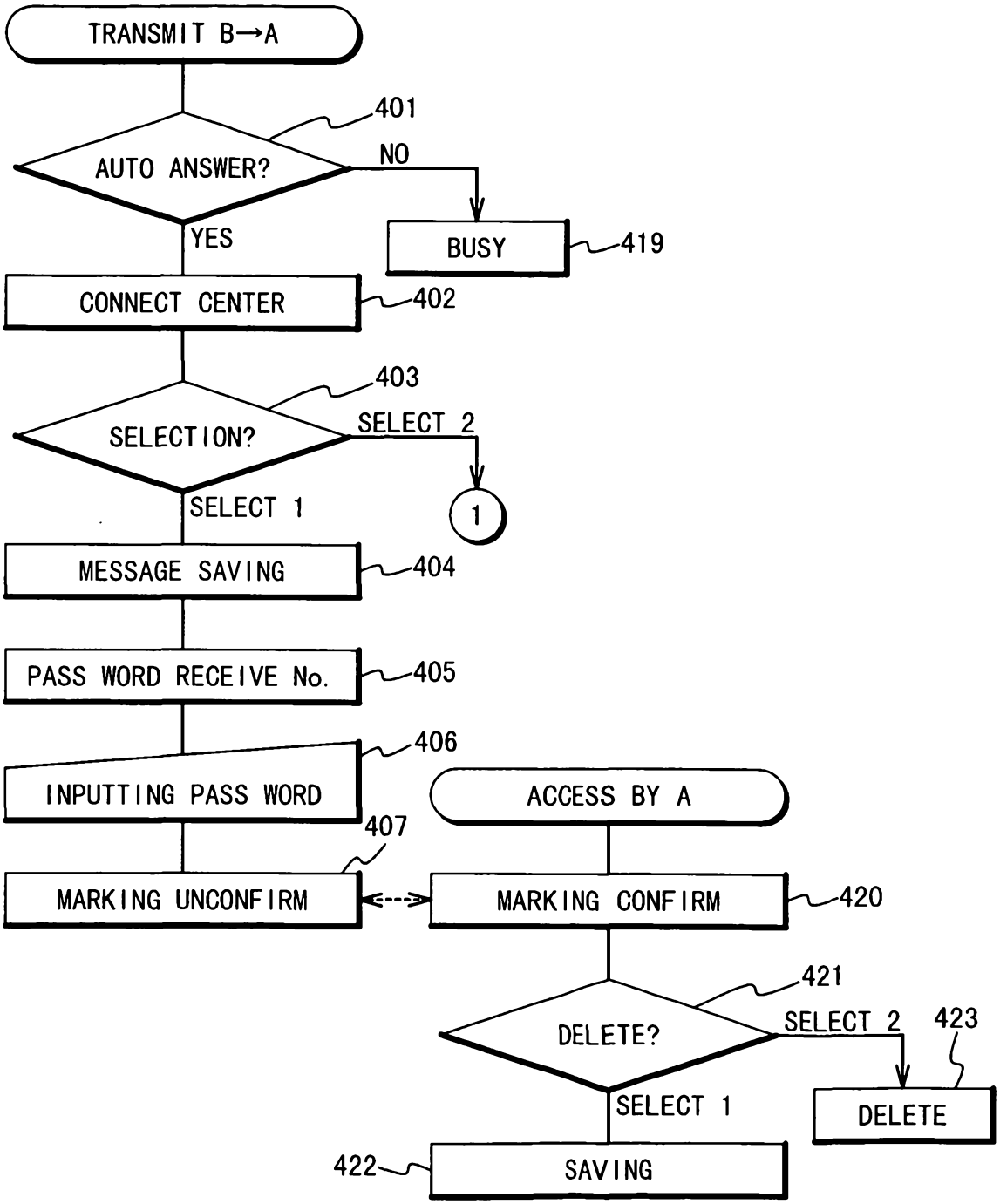
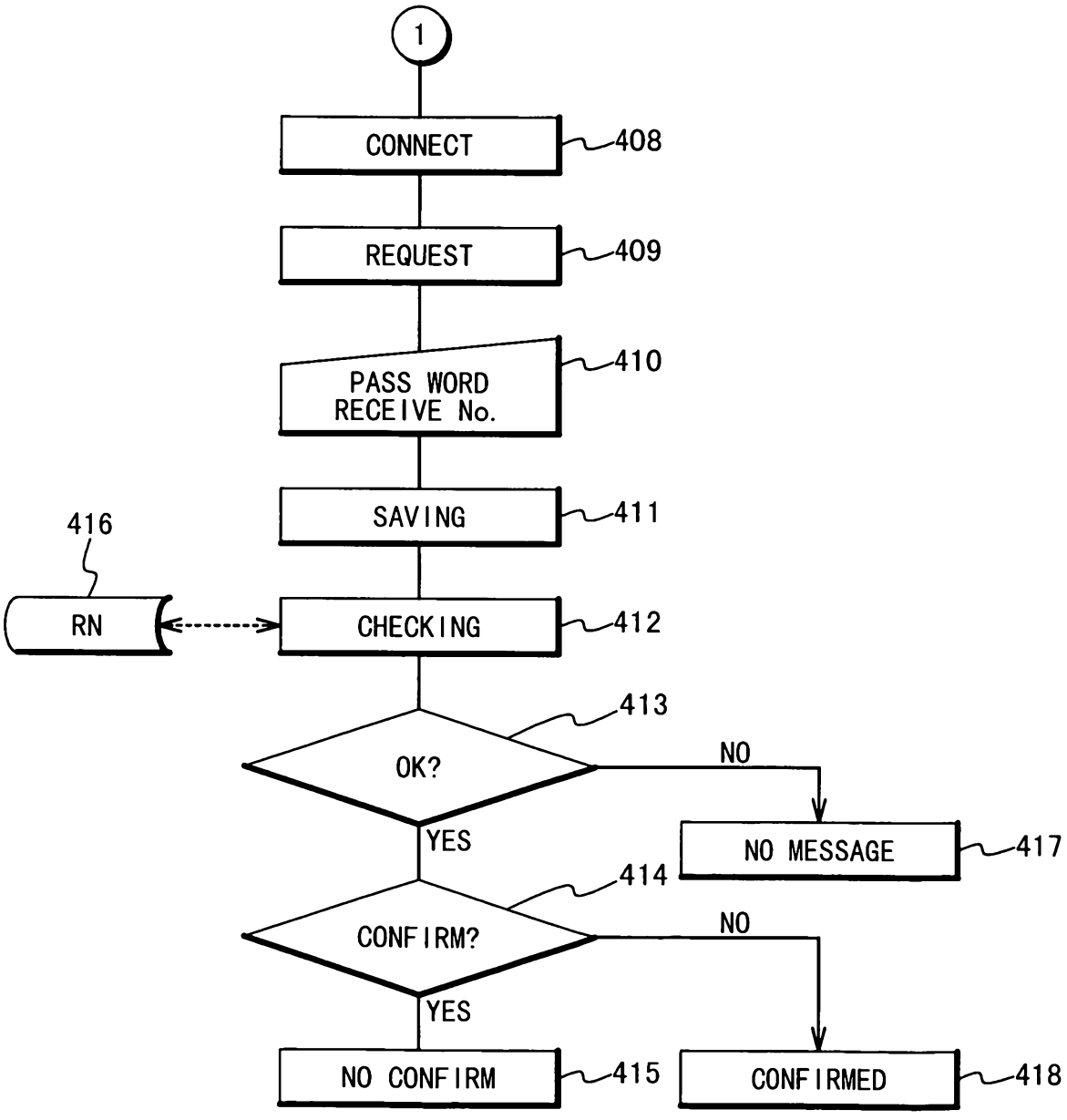

TRANSMIT B→A
401
AUTO ANSWER?
NO
YES
BUSY
419
CONNECT CENTER
402
403
SELECTION?
SELECT 2
SELECT 1
1
MESSAGE SAVING
404
PASS WORD RECEIVE No.
405
406
INPUTTING PASS WORD
ACCESS BY A
407
MARKING UNCONFIRM
MARKING CONFIRM
420
421
DELETE?
SELECT 2
423
SELECT 1
DELETE
422
SAVING

Fig. 5


1
CONNECT
408
REQUEST
409
PASS WORD
RECEIVE No.
410
SAVING
411
416
RN
CHECKING
412
413
OK?
NO
YES
NO MESSAGE
417
414
CONFIRM?
NO
YES
NO CONFIRM
415
CONFIRMED
418