(12) UK Patent (19) GB (11) 2154347 (13) B

(54) Title of invention

Paging communication system

(51) INT CL⁴: H04B 5/04

(21) Application No
8503433

(22) Date of filing
11 Feb 1985

(30) Priority data

(31) 59/024337

(32) 14 Feb 1984

(33) Japan (JP)

(43) Application published
4 Sep 1985

(45) Patent published
13 Jan 1988

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(52) Domestic classification (Edition J)
G4H 13D 14A 14B 14D 14G 1A 60
NC1 NEL
U1S 2196 G4H

(56) Documents cited
None

(58) Field of search
G4H

GB 2 154 347 B

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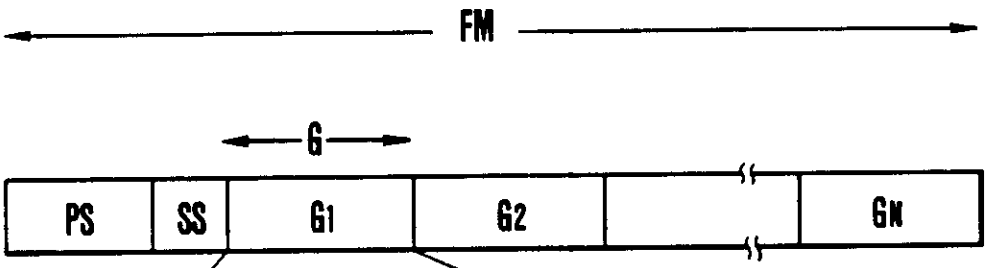

FIG. 1a

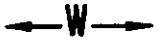

FIG. 1b

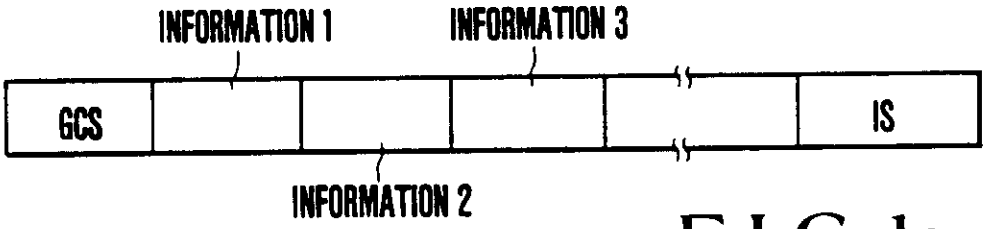

FIG. 1c

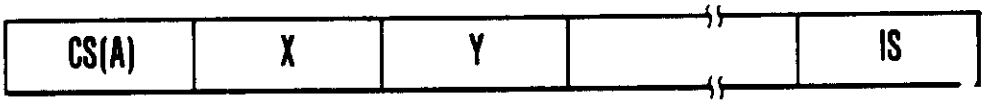

FIG. 1d

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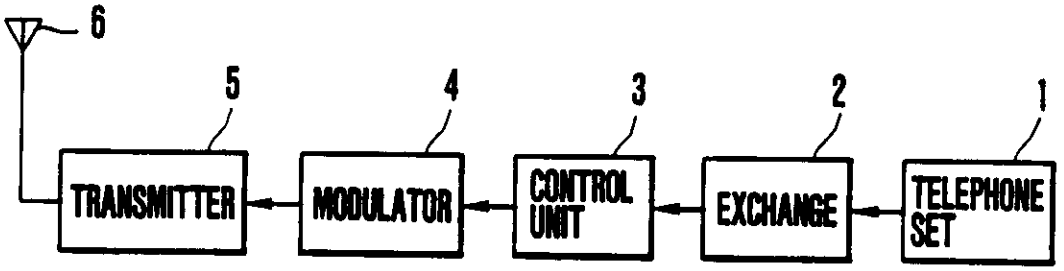

FIG.2a

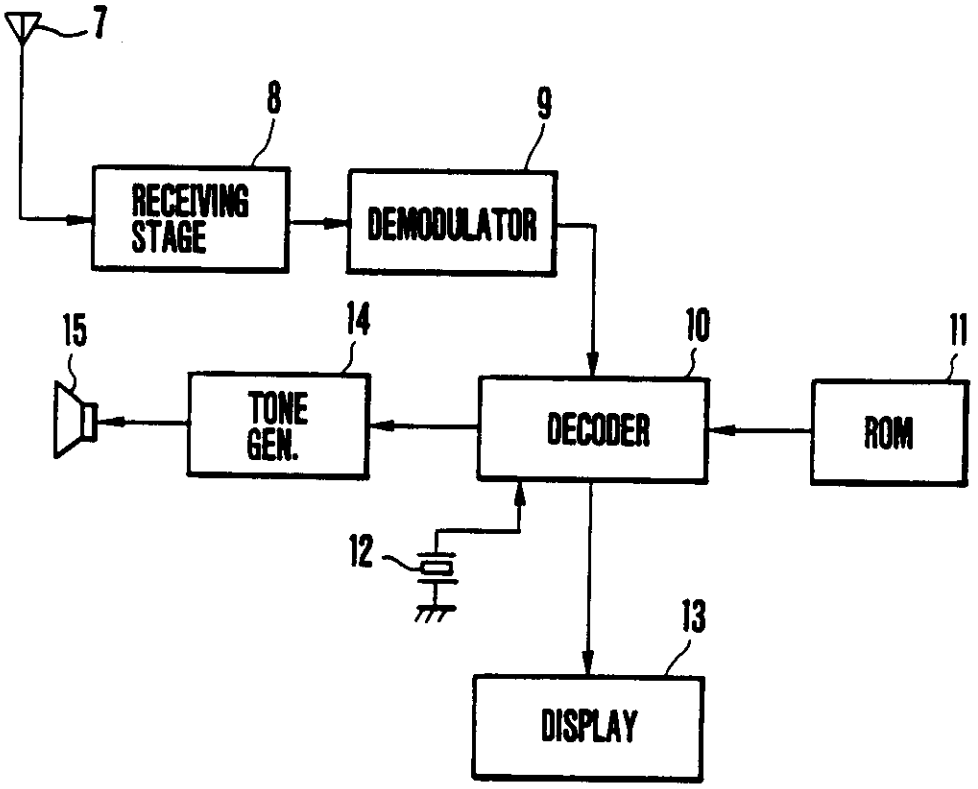

FIG.2b

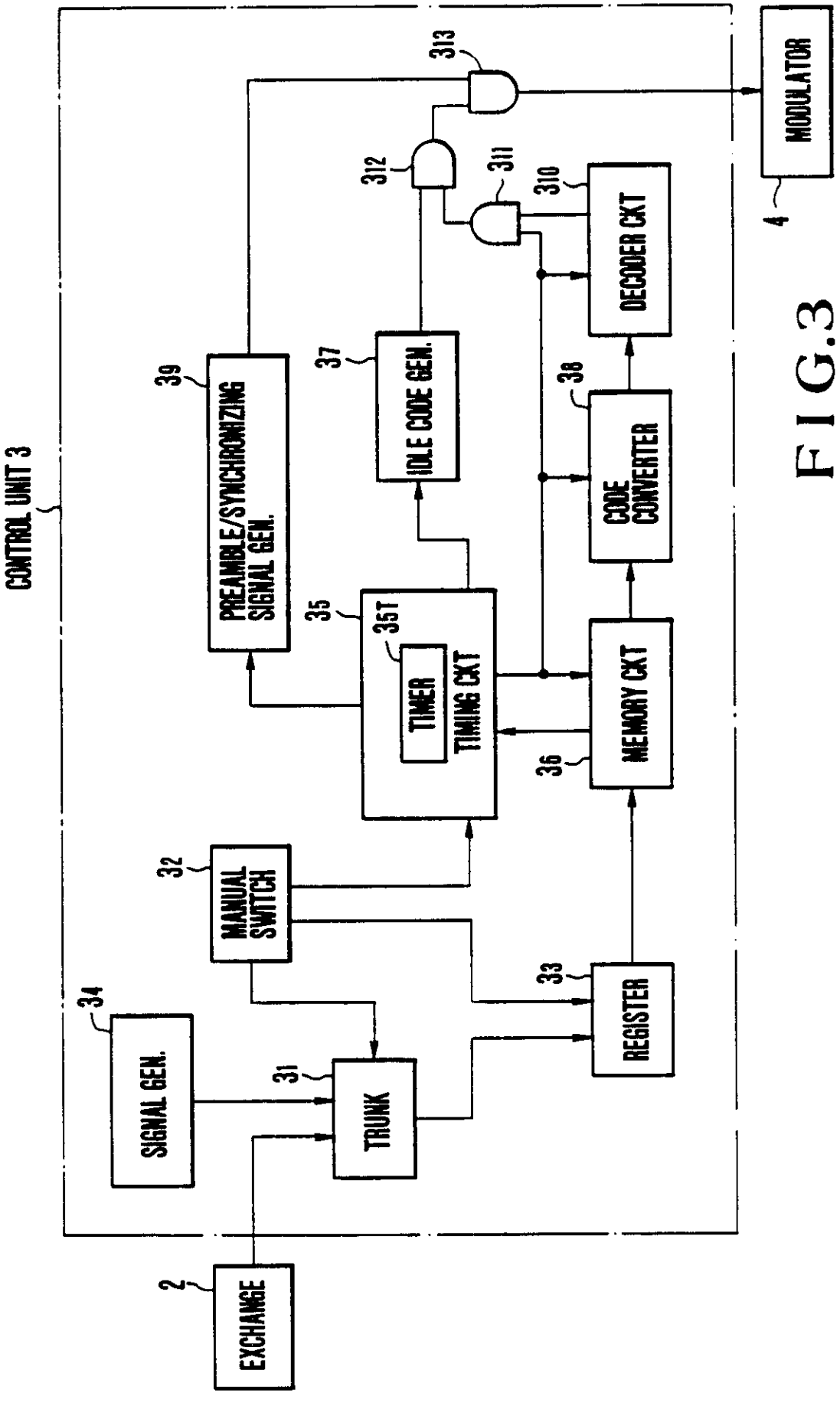
CONTROL UNIT 3
313
312
311
310
DECODER CKT
MODULATOR
4
39
PREAMBLE/SYNCHRONIZING SIGNAL GEN.
37
IDLE CODE GEN.
38
CODE CONVERTER
35
35T
TIMER
TIMING CKT
MEMORY CKT
36
32
MANUAL SWITCH
33
REGISTER
34
SIGNAL GEN.
31
TRUNK
2
EXCHANGE

FIG.3

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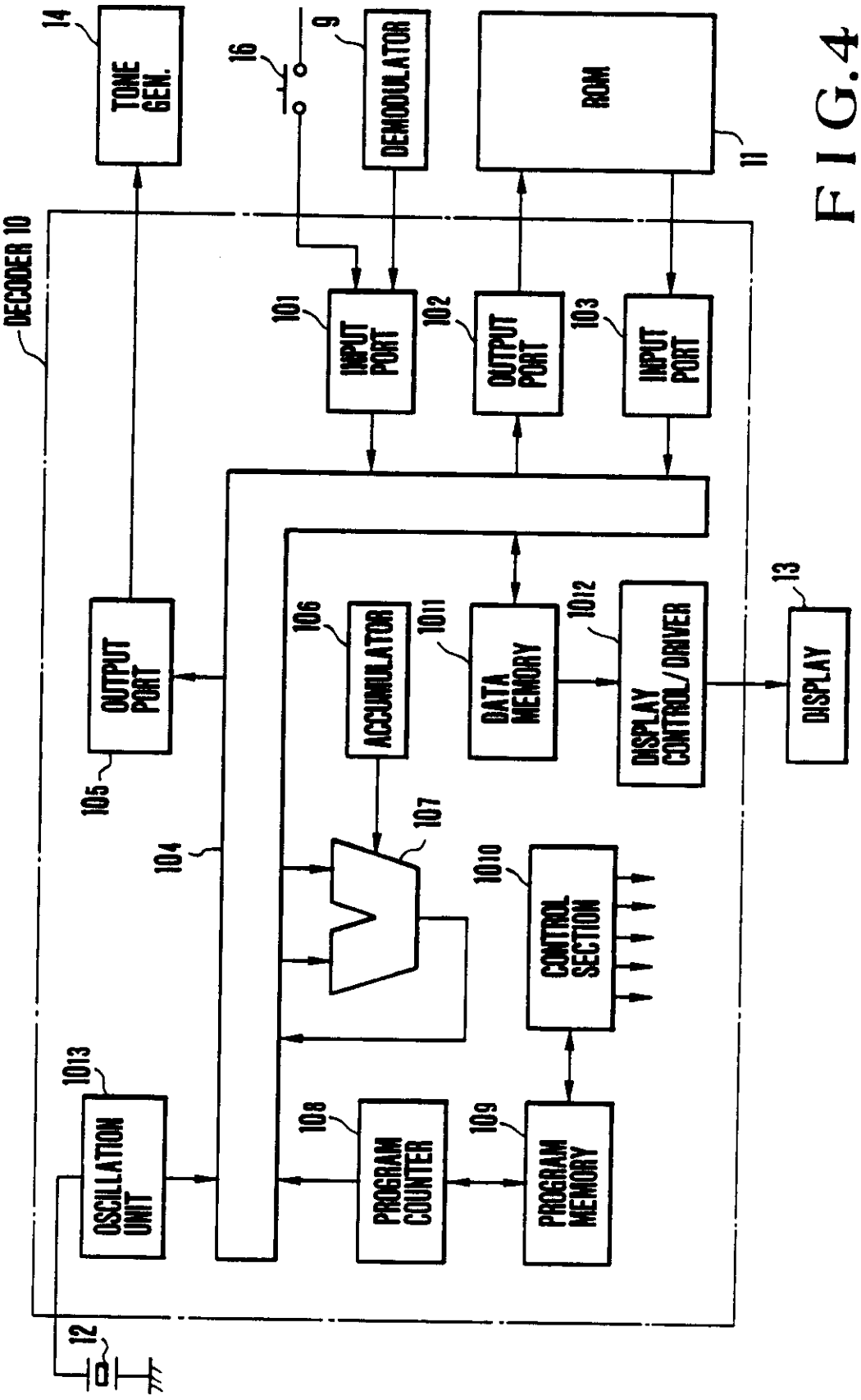

FIG.4

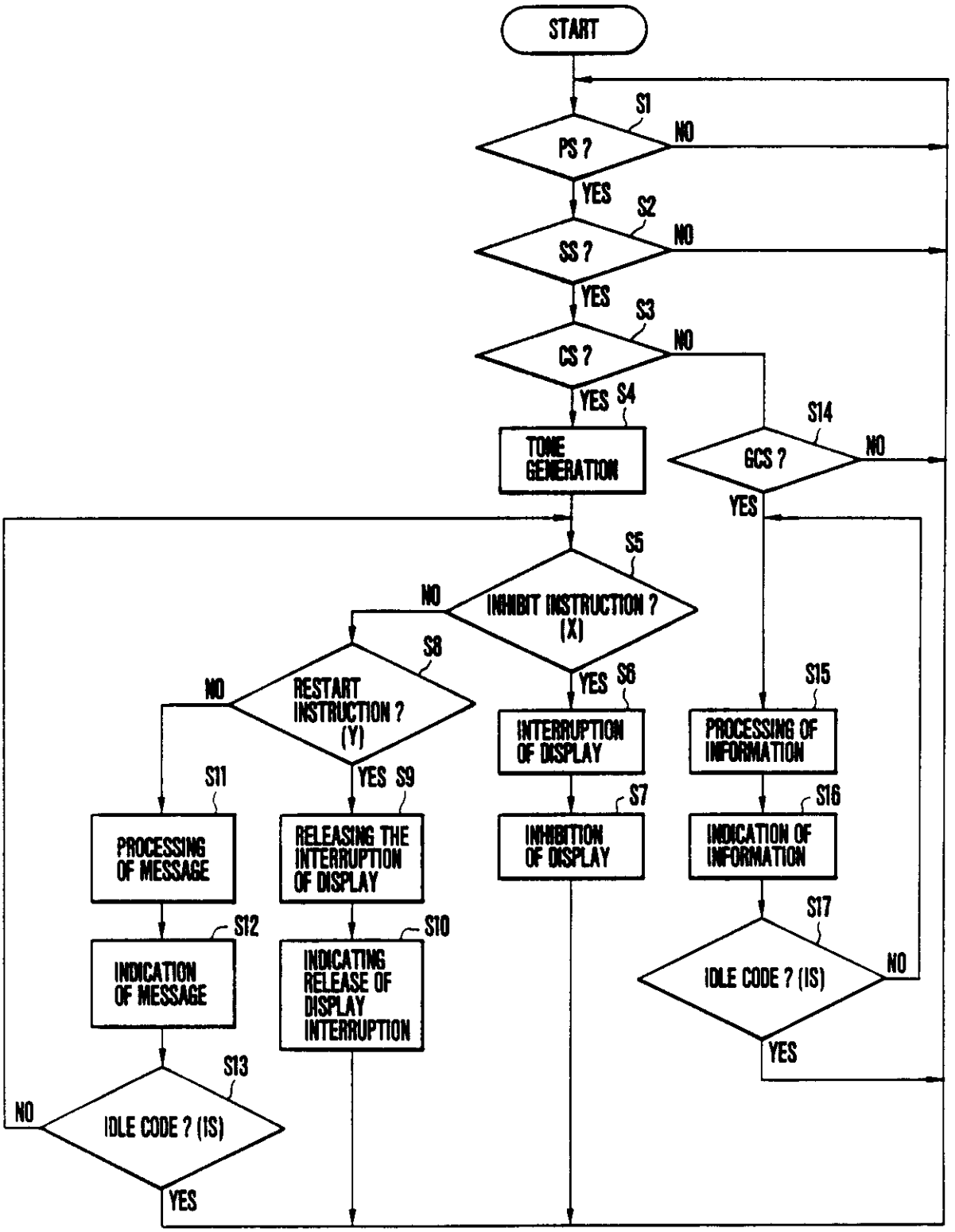
START
S1
PS ?
NO
YES
S2
SS ?
NO
YES
S3
CS ?
NO
YES
S4
TONE GENERATION
S14
GCS ?
NO
YES
S5
INHIBIT INSTRUCTION ? (X)
NO
YES
S6
INTERRUPTION OF DISPLAY
S7
INHIBITION OF DISPLAY
S8
RESTART INSTRUCTION ? (Y)
NO
YES
S9
RELEASING THE INTERRUPTION OF DISPLAY
S10
INDICATING RELEASE OF DISPLAY INTERRUPTION
S11
PROCESSING OF MESSAGE
S12
INDICATION OF MESSAGE
S13
IDLE CODE ? (IS)
NO
YES
S15
PROCESSING OF INFORMATION
S16
INDICATION OF INFORMATION
S17
IDLE CODE ? (IS)
NO
YES

FIG.5

Paging Communication System

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Background of the Invention

The present invention relates to a paging communication system adapted to transmit an individual calling code from a base station to receivers to effect communication therebetween, and more particularly to a paging communication system capable of supplying the same information to all receivers assigned to a particular group number.

In such a communication system, there are provided a large number of receivers assigned to the same group number, to which information is supplied.

However, in the prior art, there has not been adopted a system of inhibiting information supply to a particular receiver within the same group. Accordingly, the drawback with this system is that the information is supplied to a receiver which is not renewed for contract fee. Further, since a radio base station is not configured so as to count the number of individual calls, there is an inconvenience that the contract fee is determined with respect to all receivers as a monthly charge, i.e., a flat charge independent of the frequency of use.

Summary of the Invention

With the above in view, an object of the present invention is to provide a paging communication system which minimises such problems encountered in the conventional paging communication system.

Another object of the invention is to provide a paging communication system which is configured so as to inhibit information supply only to receivers that are not renewed for contract fee and which may determine an amount of charge depending upon the frequency of calling of individual calling number at the time of a renewal of a contract fee.

In an embodiment of the invention to be described a paging system includes a base station configured so as to transmit a plurality of individual calling codes, and a plurality of message codes respectively subsequent to the individual calling codes as well as, a group calling code common to the same group of receivers, and a plurality of information codes subsequent to the group calling code, and each of the receivers is operative in synchronism with a corresponding one of the individual calling codes and the group calling code to indicate a corresponding one of the message codes when the corresponding individual calling code coincides with a stored predetermined individual calling code and to indicate a corresponding one of the information codes when the group calling code coincides with a stored predetermined group calling code, the base station has

first means for counting the number of transmissions to each receiver, and second means operative to transmit as each of corresponding ones of the message codes, first data indicating that an information code assigned to a particular one or each of particular ones of the receivers is masked, when a counted value obtained by the first means is above a predetermined value, and each of the receivers has third means operative in response to the first data to inhibit an ordinary receiving processing in respect to the masked information code.

The second means may be further operative to transmit, as corresponding one of the message codes second data for restarting an ordinary receiving processing in respect to the masked information code. The third means may be further operative in response to the second data to restart an ordinary receiving processing in respect to the masked information code.

A communication charge to each receiver may be determined in accordance with a counted value of the first means.

The base station in the embodiment to be described comprises a control unit operative to convert a calling signal from each telephone set through a switch board to a coded signal, a modulator for modulating a carrier wave with the coded signal, and a transmitter for transmitting the modulated carrier wave, wherein the first and second means are provided in the control unit. The first means may be comprised of a timer

provided in timing circuit. The second means includes memory means for storing data indicative of calling numbers, and encoder means for encoding the data indicative of calling numbers transferred from the memory means in synchronism with a timing signal from the timing circuit, whereby when a counted value obtained by the timer assigned to a particular one or each of particular ones of receivers is above a predetermined value, the encoder means is operative to generate the first data that an information code is masked. When the base station recognizes that a particular one or each of particular ones of receivers has effected renewal of a contract fee, the encoder means is operative to generate the second data for restarting an ordinary receiving processing in respect to the masked information code.

Each receiver in the embodiment to be described comprises a receiving stage for receiving the modulated coded signal, a demodulator for demodulating the received modulated carrier wave into a code signal, and a decoder for decoding the coded signal into a signal, thereby indicating the message code and information code or sounding a tone, wherein the third means is provided in the decoder.

The decoder may be comprised of an one chip CPU operative to effect message processing to indicate a corresponding message code when both the first and second data are not detected in a received signal, to indicate an interruption of a display for a corresponding message

code when the first data is detected in a received signal, and to indicate release of the interruption of a display for the corresponding message code when the first data is not detected and the second data is detected.

Brief Description of the Drawings

The features and advantages of a paging communication system according to the present invention will become more apparent from the following description taken in conjunction with the accompanying drawings, in which:

Figs. 1a to 1d are diagrams showing examples of signal trains used in the present invention;

Figs. 2a and 2b are block diagrams schematically illustrating an embodiment of a paging system according to the present invention;

Fig. 3 is a block diagram illustrating an example of a control unit shown in Fig. 2a;

Fig. 4 is a block diagram illustrating an example of a decoder shown in Fig. 2b; and

Fig. 5 is a flowchart showing the operation of the receiver shown in Figs. 2b and 4.

Detailed Description of Preferred Embodiment

A prefered embodiment of a paging system according to the present invention will be described with reference to attached drawings.

For facilitating the understanding of the present invention, a format of a paging signal transmitted from a

radio base station to receivers will be first referred to.

Referreing to Figs. 1a to 1d, there are shown examples of respective signal trains, wherein FM, G and W denote a single frame, a field for an individual group of receivers and a single word, respectively.

As shown in Fig. 1a, each frame comprises a field for a preamble signal PS for a bit synchronization, a field for a synchronizing signal SS for a frame synchronization and N divided fields G_1 to G_N assignd to signals corresponding to a plurality of groups of subscriber receivers.

The field corresponding to each group (G_1 to G_N) includes signal trains shown in Figs. 1b and 1c. The signal train shown in Fig. 1b comprises a plurality of sections for calling codes CS_1, CS_2 ... assigned to respective receivers, a plurality of sections for message codes MS_1, MS_2 ... corresponding to respective calling codes CS_1, CS_2 ..., and a section for an idle code IS for indicating the end of each group. The signal train shown in Fig. 1c comprises a section for a calling code (a group calling code) GCS common to respective receivers, a plurality of sections for information codes 1, 2 ..., and a section for an idle code IS for indicating the end of each group. Each of signal trains shown in Figs. 1b and 1c contains K (arbitrary integer) words.

In the above-mentioned example, as shown in Figs. 1b and 1c, the signal train corresponding to individual

number and the signal train corresponding to the common group number are separately shown. However, it is apparent that they may be transmitted as a single signal train.

Referring to Fig. 1d, there is shown an example of a signal train employed in the paging communication system according to the present invention. The signal train in this figure includes a section for a calling code assigned to an arbitrary receiver A, an inhibit data X indicating that an information code assigned to the receiver A is masked, and a restart data Y for restarting ordinary receiving processing in respect to the masked information code X or another masked information code. As will be described later, in the paging communication system of the invention, a base station is provided with a control unit operative to transmit the inhibit data and restart data as a message code, and each receiver is provided with a decoder operative in response to the inhibit data to inhibit an ordinary receiving processing in respect to the masked code and operative in response to the restart data to restart an ordinary receiving processing in respect thereto. Thus, the communication system of the invention enables the supply of information to be inhibited only to a receiver which is not renewed for contract fee.

To obtain such an advantage, the paging communication system according to the present invention is

implemented as follows.

Referring to Figs. 2a and 2b, there are shown in a block form a radio base station and a receiver, respectively.

As shown in Fig. 2a, the radio base station comprises a telephone set 1, an exchange 2 connected to the telephone set 1, a control unit 3 adapted to receive an output from the exchange 2 to convert the output into a coded output, a modulator 4 for modulating a carrier wave with the coded output from the control unit 3, and a transmitter 5 adapted to receive an output from the modulator 4 to transmit it through an antenna 6. The control unit 3 has a device for counting calling numbers per individual receiver and is configured so that an information supply inhibit instruction or an information supply restart instruction can be inputted by a manual operation.

Referring to Fig. 2b, the receiver comprises a receiving stage 8 for receiving an arrival signal caught by an antenna 7, a demodulator 9 for demodulating an output from the receiving stage 8, and a decoder 10 adapted to receive each of the outputs from the demodulator 9, a read only memory (ROM) 11 and a crystal oscillator 12 to compare a demodulated sigral from the demodulator 9 with an individual calling code or a group calling code common to the same group stored in the ROM 11 thereby to produce a predetermined output. The receiver

further comprises a display 13 for indicating an output from the decoder 10, a tone generator driven by an output from the decoder 10 to generate an output indicative of a tone, and a speaker 15 which produces a sound in response to the output from the tone generator 14.

The operation of the embodiment shown in Figs. 2a and 2b will be described with reference to Fig. 1.

In the radio base station shown in Fig. 2a, a signal transmitted from the telephone set 1 passes through the exchange 2 and the signal is converted to a code in the control unit 3. The converted output from the control unit 3 is inputted to the demodulator 4 and then is transmitted via the transmitter 5 and the antenna 6.

On the other hand, in the receiver shown in Fig. 2b, a signal transmitted from the radio base station is caught by the antenna 7. The arrival signal is inputted to the demodulator 9 through the receiving stage 8. Thus, it is demodulated into a code in the demodulator 9 and a demodulated output is inputted to the decoder 10. When the demodulated signal is inputted to the decoder 10, it is compared with the individual calling number or the group calling number stored in advance in the ROM 11. As a result, when the demodulated signal coincides with the individual calling number, the decoder 10 produeces an output for allowing the tone generator 14 to operate, thereby producing a sound from the speaker 15 and indicating a message code MS (Fig. 1b) subsequent to the

individual calling number on the display 15. When the demodulated signal coincides with the group calling number, information 1 and 2 etc. subsequent to the group calling number are indicated on the display 13.

The configuration of the control unit 3 in the base station shown in Fig. 2a and the operation thereof will be described in detail with reference to a block diagram shown in Fig. 3.

Fig. 3 shows parts extracted from those related to control unit 3 wherein the parts shown in Fig. 3 identical to the those shown in Fig. 2a are designated by the same reference numerals, respectively. The control unit 3 comprises a trunk circuit 3_1 adapted to receive an output from the exchange 2, a manual switch 3_2, a register 3_3 adapted to receive outputs from the trunk 3_1 and the manual switch 3_2, a signal generator 3_4 operative to produce signals, e.g., the group calling code CGS common to respective receivers, and information codes 1 and 2 etc. The control unit 3 further comprises a timing circuit 3_5 which is adapted to receive an output from the manual switch 3_2 and is provided with a plurality of timers 3_{5T} assigned to respective receiver, which timers 3_{5T} constitute means for counting the number of transmissions to each receiver, and a memory circuit 3_6 for storing an output from the register 3_3, which is configured so as to store calling number until a readout signal from the timing circuit 3_5 is arrived.

The control unit 3 further comprises an idle code generator 3_7 operative to produce the idle code IS shown in Figs. 1b, 1c and 1d in response to an output from the timing circuit 3_5, and a code convertor 3_8 and an encoder circuit 3_{10} which are controlled by an output from the timing circuit 3_5. The code converter 3_8 is configured so as to convert a BCD (Binary Coded Decimal) number into a binary code of 21 bits and the decoder circuit 3_{10} is configured so as to add a parity check bit of 10 bits to the information code of 21 bits to generate a calling number comprising BCH (Bose-Chaudhuri Hocquenghem) of a cyclic code (a parity check code of 10 bits and an information code of 21 bits). The control unit further comprises a preamble/synchronizing signal generator 3_9 controlled by an output from the timing circuit 3_5 to produce a preamble signal PS and a synchronizing signal SS for a frame synchronization shown in Fig. 1a, an AND gate 3_{11} for ANDing an output from the timing circuit 3_5 and an output from the encoder circuit 3_{10}, an AND gate 3_{12} for ANDing the output from the AND gate 3_{11} and an output from the idle code generator 3_7, and an AND gate 3_{13} for ANDing an output from the AND gate 3_{12} and an output from the preamble/synchronizing signal generator 3_9. The AND gate 3_{13} is configured so that its output is transmitted to the modulator 4.

The operation of the control unit 3 shown in Fig.

3 will be described.

First, when a certain subscriber calls a paging receiver (which will be simply called a "receiver" hereinafer), a subscriber dials a calling number assigned to the receiver by means of a telephone set (Fig. 2a) of the subscriber. Thus, a signal indicative of a dial number is inputted to the trunk circuit 3_1 of the control unit 3 via the telephone exchange 2 and then an output from the trunk circuit 3_1 is inputted to the register 3_3. It is to be noted that a signal indicative of a calling number may be inputted into the register 3_3 by manually operating the manual switch 3_2 by an operator (not shown). It is to be further noted that it is possible to hold a signal from the exchange 2 in the trunk circuit 3_1 by making use of the manual switch 3_2 in order to insert into the signal the group calling code GSC common to each receiver and the information codes 1 and 2 etc. shown in Fig. 1c.

Then, when the register 3_3 receives a predetermined number of "CALLS" such as a dial signal, for instance, four CALLS, it transfers all calling numbers converted into BCD numbers to the memory circuit 3_6. The memory circuit 3_6 stores these calling numbers until a readout signal from the timing circuit 3_5 is arrived. When the calling numbers are inputted into the memory circuit 3_6, the timing circuit 3_5 becomes operative so as to activate the preamble/synchronizing signal generator

3_9, thereby to produce codes indicative of the preamble signal PS for bit synchronization and the synchronizing signal SS for frame synchronization, thus transmitting them to the modulator 4 through the AND gate 3_{13}. Subsequently to the completion of transmission of codes indicative of the preamble signal PS for bit synchronization and the synchronizing signal SS for frame synchronization, the timing circuit 3_5 becomes operative so as to output a reabout signal to the memory circuit 3_6 and at the same time to activate the code converter 3_8, encoder circuit 3_{10} and the AND gate 3_{11}.

Assuming now that calling numbers are stored in the memory circuit 3_6, they are transferred to the code convertor 3_8 with each number being as a unit in order of storage in accordance with the readout signal from the timing circuit 3_5 until the memory circuit 3_6 becomes empty in its storage. Then, the code converter 3_8 becomes operative to convert BCD number to binary information code of 21 bits. As previously mentioned, the encoder circuit 3_{10} becomes operative to add a parity chek bit train of 10 bits to the information code of 21 bits to output a calling number comprising BCH of cyclic code (the parity check code of 10 bits and the code information of 21 bits) to the modulator 4 through AND gates 3_{11}, 3_{12} and 3_{13}.

Then, when the memory circuit 3_6 becomes empty in its storage, it outputs an output signal to the timing

circuit 3_5. In response to this output signal, the timing circuit 3_5 allows the memory circuit 3_6, the code converter 3_8 and the encoder circuit 3_{10} to be inoperative, and at the same time activates the idle code generator 3_7 to output the idle code IS (Fig. 1) to the modulator 4 through the AND gates 3_{12} and 3_{13}.

Then, the timing circuit 3_5 activates the timer 3_{5T} incorporated therein upon completion of signal transmission in the idle code generator 3_7. When there is produced storage signal of a new calling number from the memory circuit 3_6 within a setting time of the timer 3_{5T}, the above-mentioned sequence of operations will be repeated. At this time, when a second storage signal or each of signals subsequent thereto, i.e., each of storage signals occurring subsequently to the first idle code IS is produced from the memory circuit 3_6, the preamble/shynchornizing signal generator 3_9 is placed in inoperative condition until the timer 3_{5T} expires in accordance with an output signal from the timing circuit 3_5. On the other hand, after the timer 3_{5T} expires, the timing circuit 3_5 does not produce any output signal as long as a new number of storage signal is not inputted to the memory circuit 3_6.

Thus, a signal train as shown in Fig. 1a will be outputted in accordance with the above-mentioned sequence of operation.

It is to be noted that since timers 3_{5T}

corresponding to respective individual receivers are provided in the timing circuit 3_5, counting can be effected every time each individual number is outputted.

Then, the configuration of the decoder 10 provided in the receiver shown in Fig. 2b and the operation thereof will be described in detail with reference to a block diagram shown in Fig. 4.

The parts shown in Fig. 4 identical to those shown in Fig. 2b are designated by the same reference numerals, respectively. In this embodiment, the decoder 10 is comprised of a one chip CPU. The decoder 10 comprises an input port 10_1 which inputs a signal demodulated by the demodulator 9 to output the demodulated signal to a data bus 10_4, an output port 10_2 which inputs an instruction transferred via the data bus 10_4 to output an instruction signal for reading a corresponding one of calling codes written in the ROM 11, and input port 10_3 which inputs an output from, for example, ROM 11, receives the calling code read from the ROM 11 in accordance with the above-mentioned instruction signal to output the calling code thus read to the data bus 10_4, and an output port 10_5 to output a signal for activating the tone generator 14.

The decoder 10 further comprises an accumulator 10_6, an arithmetic logic unit 10_7 which inputs an output from the accumulator 10_6 and an instruction transferred via the data bus 10_4, and is operative to

store a computed result into a memory to be referred to later, or to exchange data among the memory and I/O ports 10_1, 10_2, 10_3 and 10_5 through the data bus 10_4, a program counter 10_8, and a program memory 10_9 in which an operational instruction train for performing a decoder function is written. The program memory 10_9 transfers the content of an address corresponding to the program counter 10_8 to a control section 10_{10}. The control section 10_{10} is operative to decode instruction codes to be executed in accordance with the content from the program memory 10_9 to effect each control of respective blocks for executing their instructions.

The decoder 10 further comprises a data memory 10_{11} and a display control/driver 10_{12}. The data memory 10_{11} is configured so as to hold a signal transmitted from the input port 10_1 through the data bus 10_4 to display the content of the signal on the dislay 13 comprising a liquid crystal dispay (LCD) through a dispaly control/driver 10_{12} for a predetermined period of time under the control of a timer (not shown) incorporated in the data memory 10_{11}. The decoder 10 further comprises an oscillation unit 10_{13} cooperative with the crystal oscillator 12 to produce a timing clock signal for driving each blcok. There is further provided a switch 16 for an initialization provided in association with the decoder 10. The switch 16 is connected to a power supply (not shown) through a resistor (not shown) to

supply an output of logical "1" or "0" to the input port 10_1.

The operation of the receiver thus configured will be described in detail with reference to a flowchart shown in Fig. 5.

The flowchart shows an example of a receiving processing in the case where the receiver receives a signal from the radio base station.

First, judgements as to whether there exist the preamble signal PS for bit synchronization and the synchronizing signal SS for frame synchronization in the received signal are effected (steps S_1 and S_2). When either of the preamble signal PS and the synchronizing signal SS is not detected, the receiving processing is returned to an initial state. When both signals PS and SS are detected, a judgement as to whether there exists the calling code (individual calling code) CS inherent in each receiver in the received signal is effected (step S_3). When the result of the judgement in the step S_3 is "YES", the tone generator 14 shown in Fig. 2b and Fig. 4 becomes operative, thereby allowing the speaker 15 to generate a tone output (step S_4). When the result of the judgement in the step S_3 is "NO", an judgement as to whether there exists the calling code common to each receiver (group calling code) GCS is effected (step S_{14}). When the result of the judgement is "NO" in the step S_{14}, the receiving processing is returned to the

initial state.

Then, a message subsequent to the individual calling code CS will be processed per one word as follows. Namely, a judgement as to whether the inhibit instruction (X) is present in the received signal is effected (step S_5). As a result, when the inhibit instruction (X) is included therein, an "interruption of display" is indicated (step S_6). A display is inhibited until a processing (step S_9) for releasing the "interruption of display" is completed, and then the receiving processing is returned to the initial state. When the result of the judgement in the step S_5 is "NO", a judgement as to whether the restart instruction (Y) is present in the received signal is effected (step S_8). When the result of the judgement in the step S_8 is "YES", a processing for releasing the interruption of display is executed (step S_9), to indicate a "release of display interruption" (step S_{10}), thereafter returning to the initial state. On the other hand, when the result of the judgement in the step S_8 is "NO", a processing for a corresponding message is executed (step S_{11}). Then, the message thus processed is indicated on the dispaly 13 shown in Fig. 2b and Fig. 4. Then, a judgement as to whether the idle code IS is present in the received signal is effected (step S_{13}). As a result, when the idle code IS is absent in the received signal, the receiving processing is returned to the step S_5 to

repeatedly execute a processing for a subsequent word in a manner stated above. In contrast, when the idle code IS is detected in the received signal in the step S_{13}, the receiving processing is returned to the initial state.

Turning to the step S_{14}, a judgement as to whether the group calling code GCS common to each receiver is present is effected. As a result, when the group calling code GCS is detected, a processing for the information 1 subsequent thereto shown in Fig. 1c is executed (step S_{15}) and the information 1 thus processed is indicated on the dispaly 13 shown in Fig. 2b and Fig. 4 (step S_{16}). Then, a judgement as to whether the idle code IS is present is effected (step S_{17}). As a result, when the idle code IS is not detected in the step S_{17}, the receiving processing is returned to the step S_{15} to repeatedly carry out a processing for a subsequent word in a manner stated above. In contrast, when the idle code IS is detected in the step S_{17}, the receiving processing is returned to the initial state.

As clear from the foregoing description, in the paging communnication system comprising a base station and a plurality of receivers to be called in group according to the present invention, the base station is operative to transmit, as each of corresponding ones of message codes, data indicating that an information code assigned to a particular one or each of particular ones of the receivers is masked, and each of the receivers has a function of

inhibiting an ordinary receiving processing in respect to the masked information code in response to this data. Thus, the present invention makes it possible to inhibit an information supply only in respect of those receivers for which the contract fee has not been renewed. Further, in the paging communication system according to the present invention, the base station has a function of counting the number of transmission per each individual number, thus enabling an amount of charge to be determined depending upon calls of individual numbers, at the time of renewal of a contract fee.

CLAIMS

1. A paging communication system in which a base station is configured so as to transmit a plurality of individual calling codes, and a plurality of message codes respectively subsequent to said individual calling codes as well as a group calling code common to the same group of receivers, and a plurality of information codes subsequent to said group calling code, and each of the receivers detects an individual calling code assigned thereto by comparing it with a stored predetermined individual calling code, indicates a message code subsequent to the assigned individual calling code when the assigned individual calling code is detected, detects the group calling code by comparing it with a stored predetermined group calling code, and indicates the information code when the group calling code is detected, characterised in that said base station comprises first means for counting the number of transmissions to each receiver and second means responsive to the counted value obtained by said first means for transmitting first data subsequent to an individual calling code assigned to a particular one of the receivers, said first data indicating that the particular receiver inhibits its ordinary receiving process, and that each of said receivers comprises third means for inhibiting an ordinary receiving process when it receives the first data subsequent to the individual calling code assigned thereto.

2. A system as set forth in claim 1, wherein said base station further comprises fourth means for transmitting second data subsequent to an individual calling code assigned to a particular one of the

receivers, said second data indicating that the particular receiver restarts the ordinary receiving process, and wherein each of said receivers further comprise fifth means for restarting the ordinary receiving process when it receives the second data subsequent to the individual calling code assigned thereto.

3. A system as set forth in claim 1, wherein a communication charge required for each of said receivers is determined in accordance with a counted value of said first means.

4. A system as set forth in claim 2, wherein said base station further comprises a control unit operative to convert a calling signal from each telephone set through an exchange to a coded signal, a modulator for modulating a carrier wave with said coded signal, and a transmitter for transmitting said modulated carrier wave, said control unit being provided with said first, fourth and second means.

5. A system as set forth in claim 4, wherein said control unit comprises a timing circuit having a timer constituting said ~~fifth~~ first means therein.

6. A system as set forth in claim 5, wherein said control unit further comprises memory means for storing data indicative of calling numbers, and encoder means for encoding said data indicative of calling numbers transfered from the memory means in synchronism with a timing signal from said timing circuit.

7. A system as set forth in claim 6, wherein said control unit further comprises a manual switch for inputting instructions for said first and second data, said instructions for said first and second data input from said manual switch being stored into said memory means, said timing circuit being responsive to an output of said manual switch.

8. A system as set forth in claim 7, wherein when a counted value obtained by the timer is above a predetermined value, said timing circuit outputs a readout signal to said memory means to transfer stored data corresponding to said first data to said encoder means thereby generating said first data.

9. A system as set forth in claim 7, wherein when

said base station recognizes that a particular one or ch of particular ones of receivers has effected renewal of a contract fee, said encoder means is operative to generate said second data.

10. A system as set forth in claim 7, wherein each of the receivers comprises a receiving stage for receiving said modulated coded signal, a demodulator for demodulating said modulated carrier wave into a coded signal, and a decoder for decoding said coded signal into a signal, thereby indicating said message code and information code or sounding a tone, said third and fifth means being provided in said decoder.

11. A system as set forth in claim 7, wherein said decoder is comprised of a one chip CPU operative to effect message processing to indicate a corresponding message code when both said first and second data are not detected in a received signal, to indicate an interruption of a display for a corresponding message code when said first data is detected in a received signal, and to indicate release of said interruption of a display for said corresponding message code when said first data is not detected and said second data is detected.

12. A paging communication system as claimed in claim 1 substantially as described herein with reference to the accompanying drawings.

REGISTER ENTRY FOR GB2154347

Form 1 Application No GB8503433.8 filing date 11.02.1985

Priority claimed:
14.02.1984 in Japan - doc: 59024337

Title PAGING COMMUNICATION SYSTEM

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Classified to
G4H U1S
H04B

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Publication No GB2154347 dated 04.09.1985

Examination requested 11.02.1985

Patent Granted with effect from 13.01.1988 (Section 25(1)) with title PAGING COMMUNICATION SYSTEM

**** END OF REGISTER ENTRY ****

RENEWAL DETAILS

PUBLICATION NUMBER GB2154347

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DATE FILED	11.02.1985
DATE GRANTED	13.01.1988
DATE NEXT RENEWAL DUE	11.02.1993
DATE NOT IN FORCE	
DATE OF LAST RENEWAL	31.01.1992
YEAR OF LAST RENEWAL	08
STATUS	PATENT IN FORCE