United States Patent [19]

Matai et al.

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[45] Date of Patent: Aug. 23, 1988

[54] **SELECTIVE PAGING RECEIVER WITH MESSAGE DISPLAY**

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[73] Assignee: **NEC Corporation,** Japan

[21] Appl. No.: **906,148**

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[30] **Foreign Application Priority Data**

Sep. 17, 1985 [JP] Japan 60-204912

[51] Int. Cl.⁴ H04Q 7/00; G05B 5/22
[52] U.S. Cl. **340/825.44;** 340/311.1; 455/38
[58] Field of Search 340/825.44, 825.47, 340/825.48, 311.1, 286, 792, 799; 455/31, 38; 379/56, 57

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Assistant Examiner—Edwin C. Holloway, III
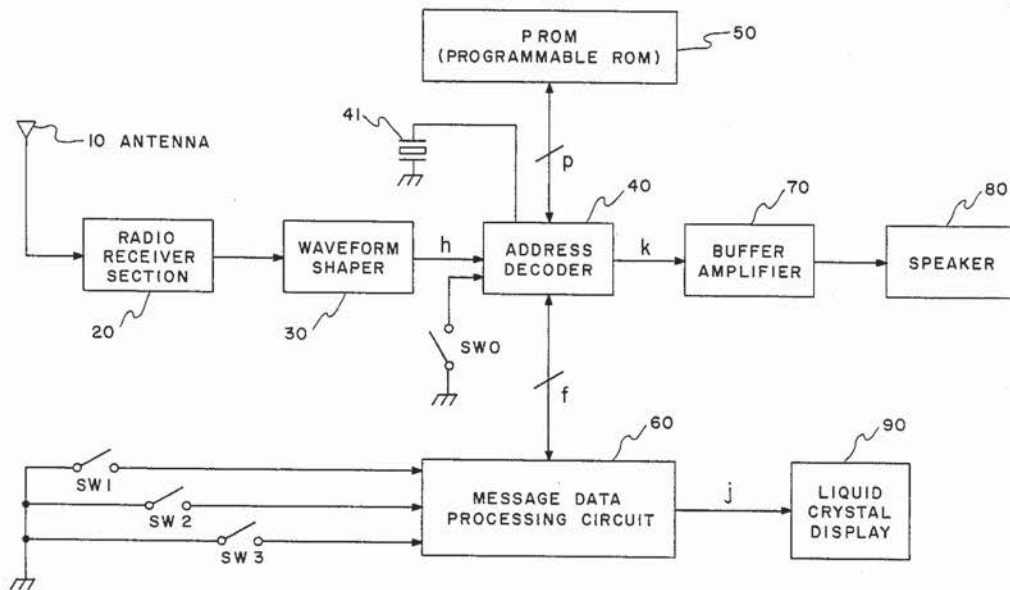*Attorney, Agent, or Firm*—Laff, Whitesel, Conte & Saret

[57] **ABSTRACT**

A pager has a receiver for receiving selective paging numbers and message data and a message display panel for displaying paging messages to the user. The pager has a first memory for storing message data. Control data, arriving together with the message data and related to its display, is stored in a second memory. A display controller, responsive to external operating inputs from the user, is provided for controlling the contents of the messages to be displayed on a basis of the control data. A display responds to control from the display controller, to read out and display messages stored in the first memory.
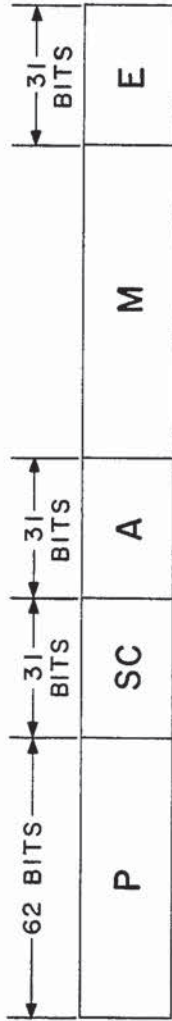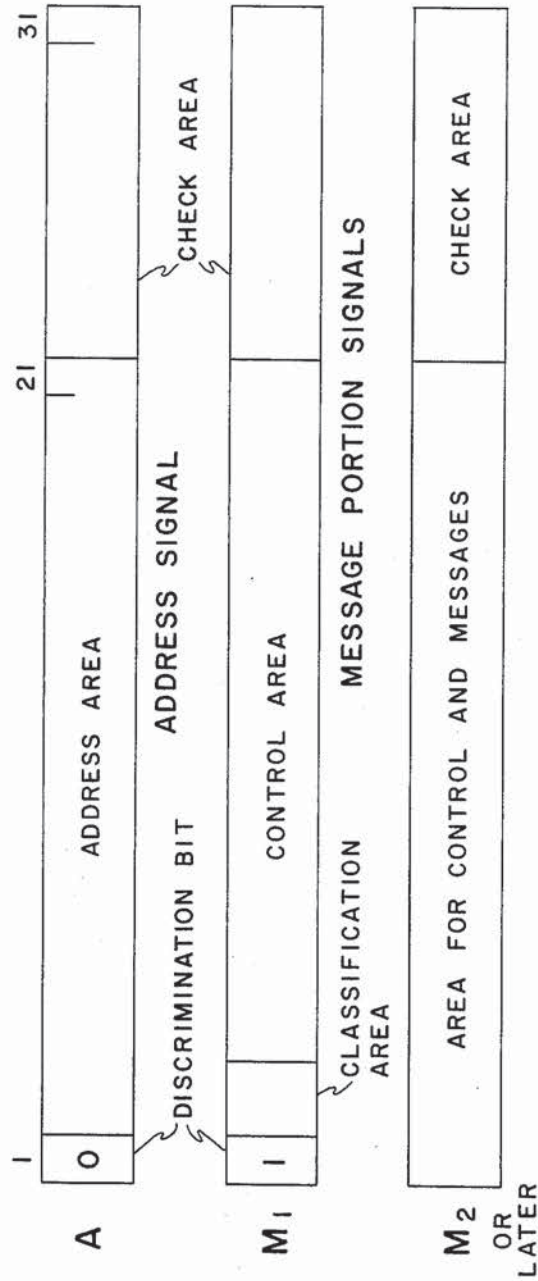
12 Claims, 13 Drawing Sheets

BLOCK DIAGRAM OF SELECTIVE PAGING RECEIVER WITH MESSAGE DISPLAY
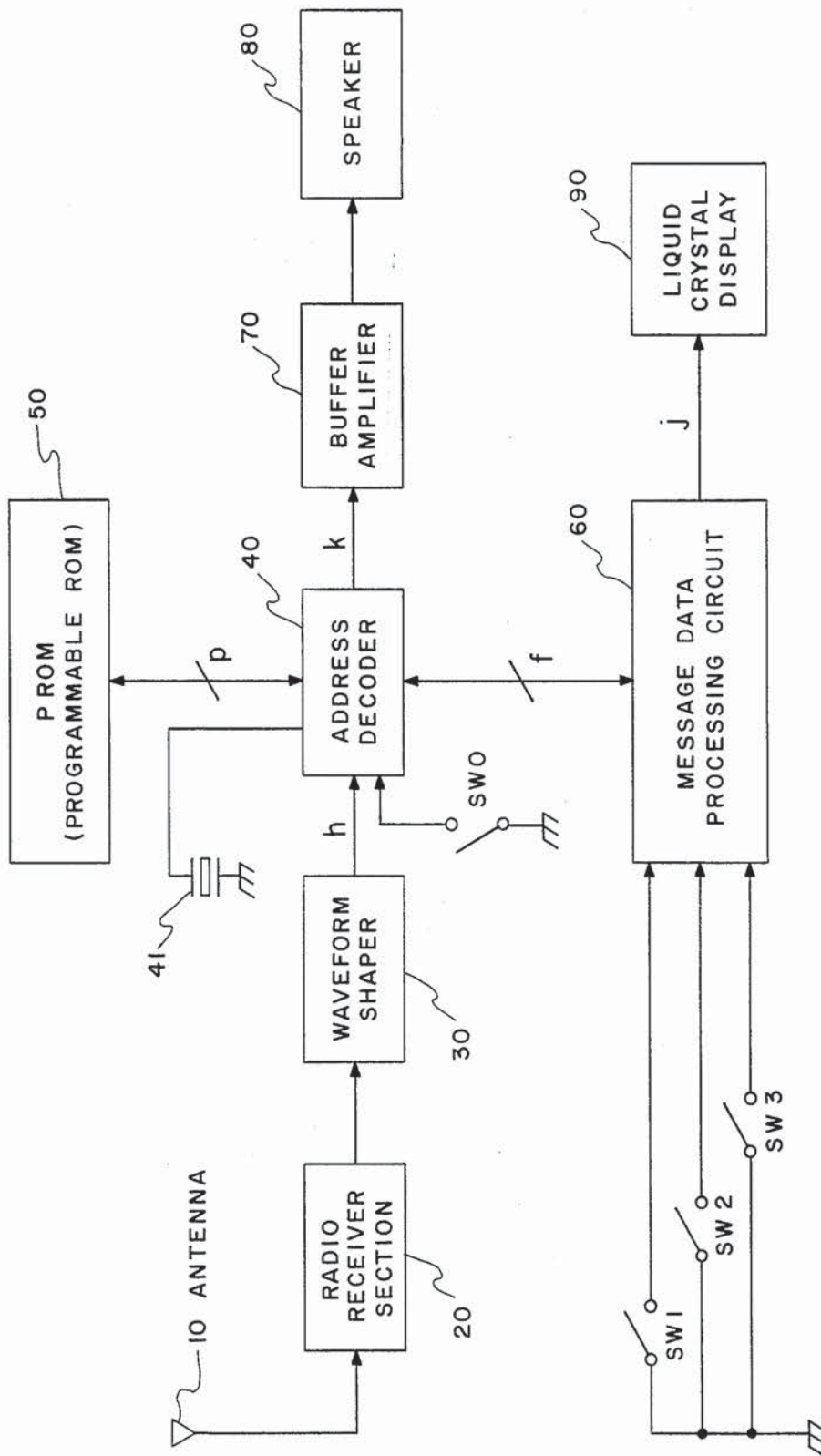
RECEIVED PAGING SIGNAL

FIG. 1(a)

ADDRESS SIGNAL
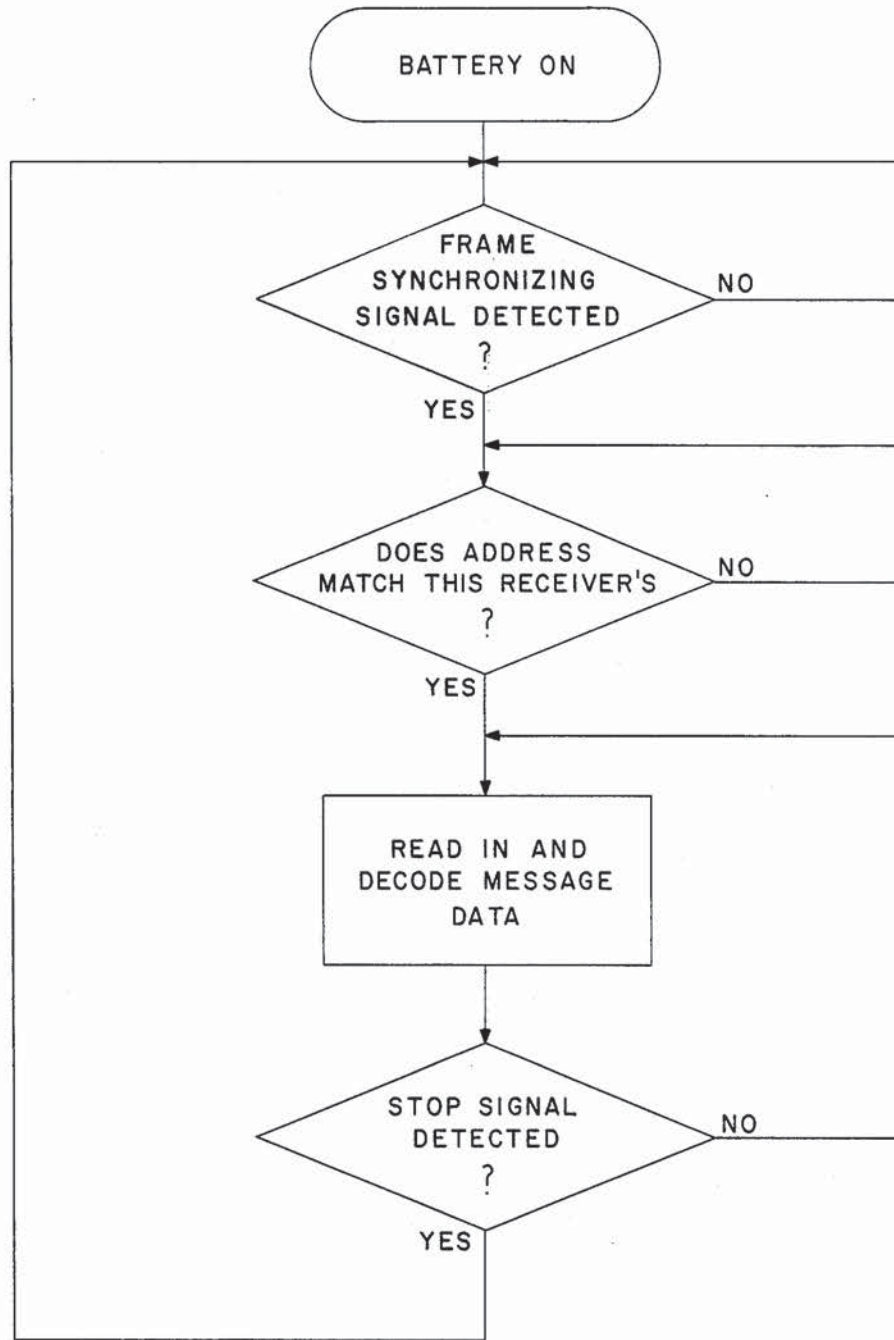
MESSAGE PORTION SIGNALS

FIG. 1(b)

ADDRESS AND MESSAGE PORTION SIGNALS

BLOCK DIAGRAM OF SELECTIVE PAGING RECEIVER WITH MESSAGE DISPLAY

FIG. 2

```
                          ┌──────────────┐
                          │  BATTERY ON  │
                          └──────┬───────┘
        ┌────────────────────────┤◄─────────────────────────────┐
        │                        ▼                               │
        │                  ╱───────────╲                         │
        │                 ╱    FRAME     ╲                        │
        │                ╱ SYNCHRONIZING  ╲      NO               │
        │                ╲ SIGNAL DETECTED ╱─────────────────────┤
        │                 ╲       ?       ╱                       │
        │                  ╲───────────╱                          │
        │                       │ YES                             │
        │                       ▼                                 │
        │                                     ◄────────────────┐  │
        │                  ╱───────────╲                       │  │
        │                 ╱ DOES ADDRESS ╲     NO              │  │
        │                ╲MATCH THIS RECEIVER'S╱───────────────┤  │
        │                 ╲       ?       ╱                    │  │
        │                  ╲───────────╱                       │  │
        │                       │ YES                          │  │
        │                       ▼            ◄──────────────┐  │  │
        │                ┌──────────────┐                  │  │  │
        │                │  READ IN AND  │                 │  │  │
        │                │ DECODE MESSAGE│                 │  │  │
        │                │     DATA      │                 │  │  │
        │                └──────┬───────┘                  │  │  │
        │                       ▼                          │  │  │
        │                  ╱───────────╲                   │  │  │
        │                 ╱ STOP SIGNAL  ╲    NO            │  │  │
        │                ╲   DETECTED     ╱─────────────────┘  │  │
        │                 ╲       ?       ╱                     │  │
        │                  ╲───────────╱                        │  │
        │                       │ YES                           │  │
        └───────────────────────┘                              │  │
```

FLOW CHART OF DECODER OPERATION

FIG. 3

FIG. 4(a) CLASSIFICATION AREA I

    00   CONTROL AREA CONTINUES TO NEXT M_n

    01   PARTIAL DISPLAY

    10   KEY WORD DISPLAY
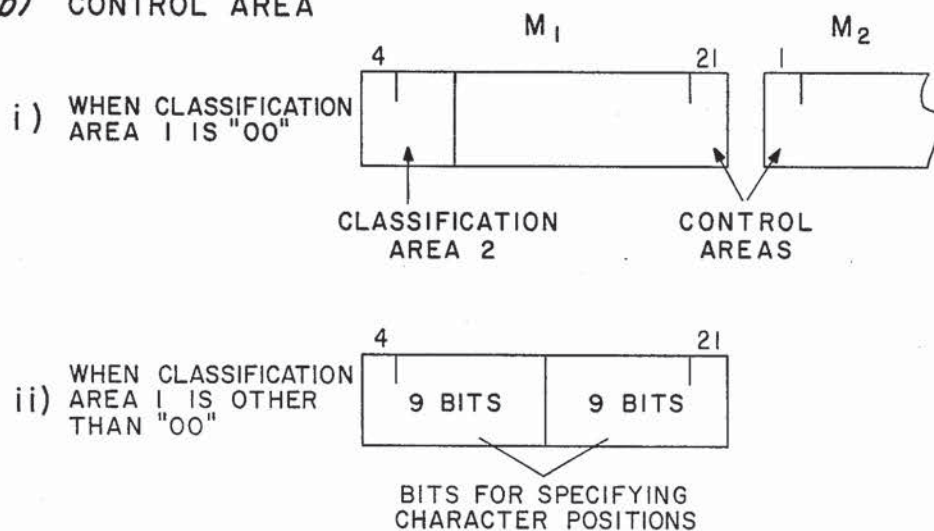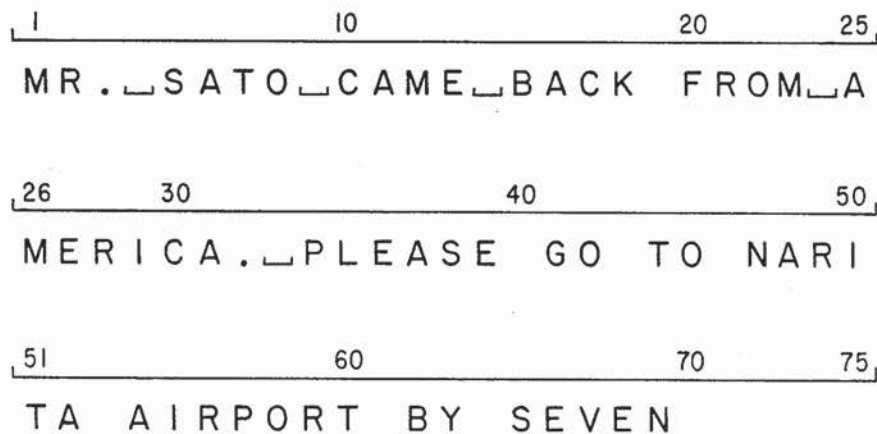
    11   ABBREVIATED DISPLAY

FIG. 4(b) CONTROL AREA

i) WHEN CLASSIFICATION AREA I IS "00"

M_1 M_2

4   21   1

CLASSIFICATION AREA 2

CONTROL AREAS

ii) WHEN CLASSIFICATION AREA I IS OTHER THAN "00"

4   21

9 BITS   9 BITS

BITS FOR SPECIFYING CHARACTER POSITIONS

FIG. 4(c) MESSAGE INFORMATION (SAMPLE MESSAGE)

1   10   20   25

MR.⌣SATO⌣CAME⌣BACK FROM⌣A

26   30   40   50

MERICA.⌣PLEASE GO TO NARI

51   60   70   75

TA AIRPORT BY SEVEN

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