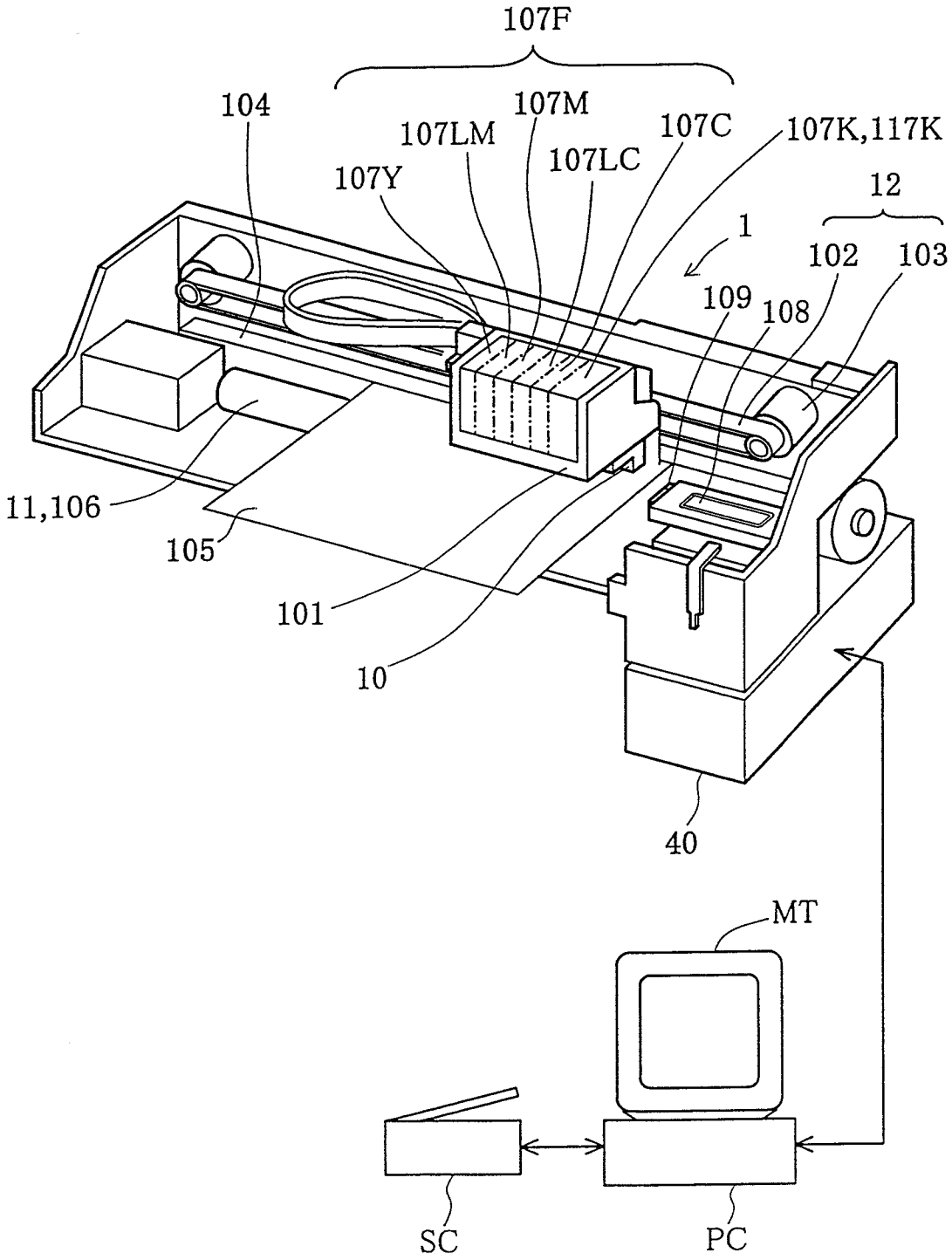
Fig. 1


107F
104
107M
107LM
107C
107K,117K
107Y
107LC
12
1
102
103
109
108
11,106
105
101
10
40
MT
SC
PC

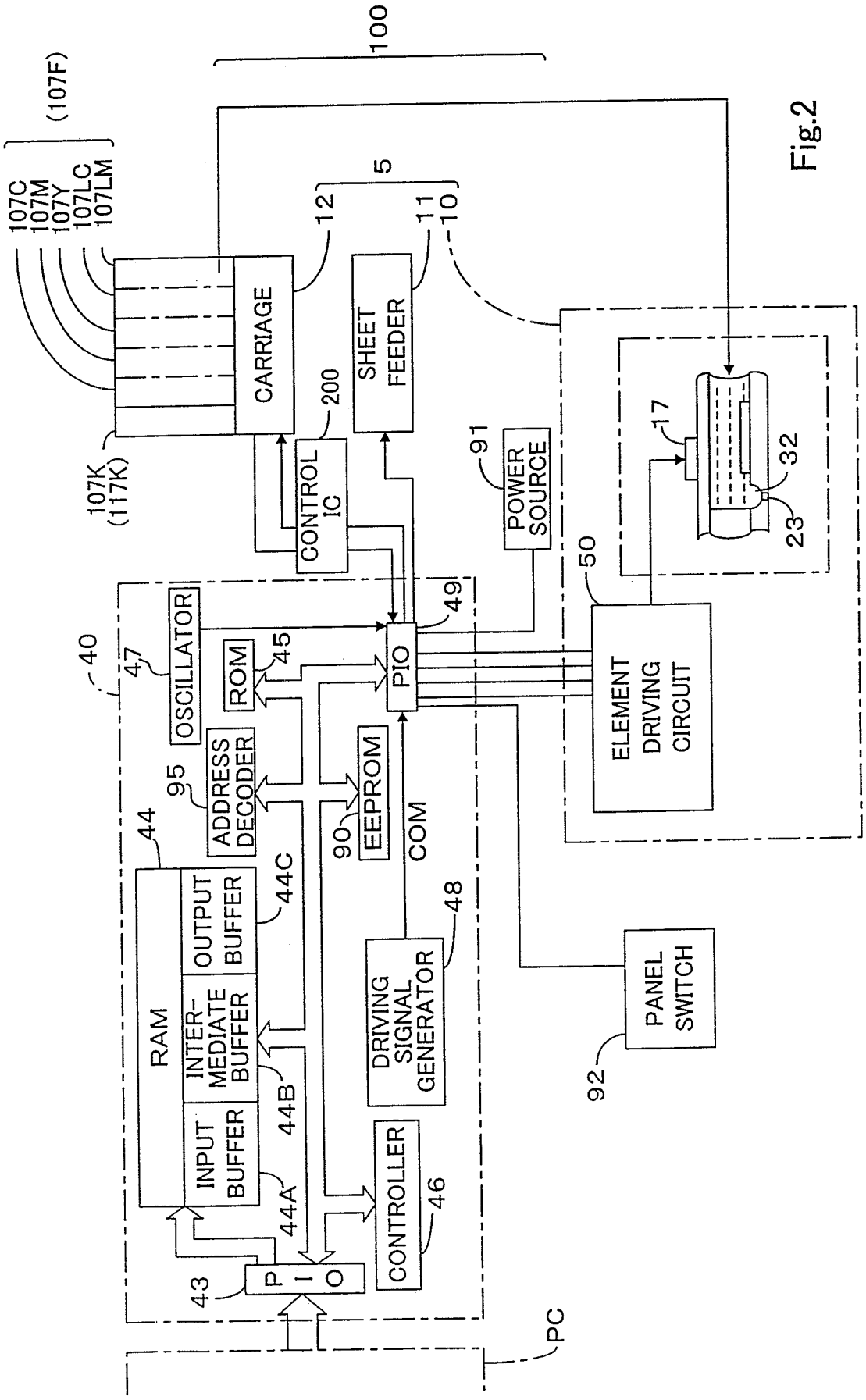
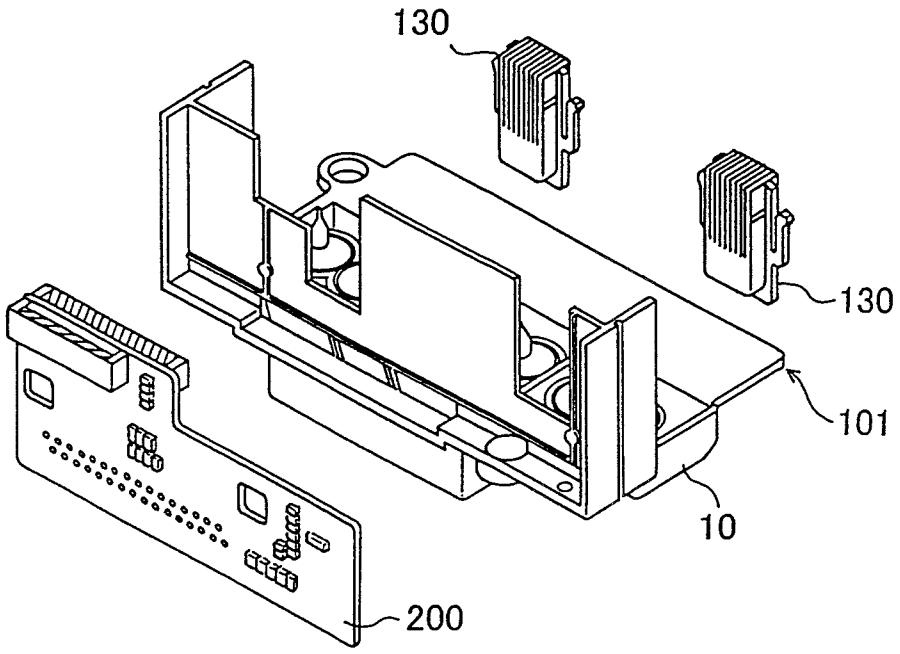

100
(107F)
107C
107M
107Y
107LC
107LM
107K
(117K)
CARRIAGE
12
5
11
10
SHEET FEEDER
200
CONTROL IC
91
POWER SOURCE
17
32
23
50
ELEMENT DRIVING CIRCUIT
40
47
OSCILLATOR
ROM
45
PIO
49
95
ADDRESS DECODER
90
EEPROM
COM
44
RAM
OUTPUT BUFFER
44C
INTER-MEDIATE BUFFER
44B
INPUT BUFFER
44A
43
P
I
O
CONTROLLER
46
DRIVING SIGNAL GENERATOR
48
PANEL SWITCH
92
PC

Fig.2

Fig.3



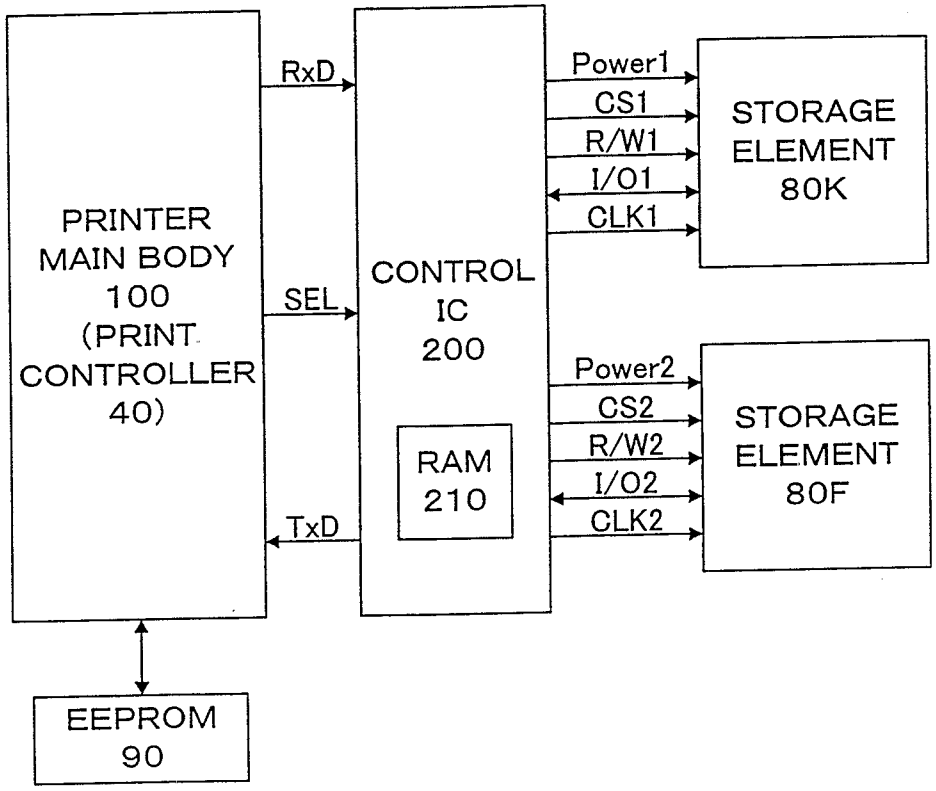

PRINTER
MAIN BODY
100
(PRINT
CONTROLLER
40)
RxD
SEL
TxD
CONTROL
IC
200
RAM
210
Power1
CS1
R/W1
I/O1
CLK1
STORAGE
ELEMENT
80K
Power2
CS2
R/W2
I/O2
CLK2
STORAGE
ELEMENT
80F
EEPROM
90

Fig. 4

Fig. 5

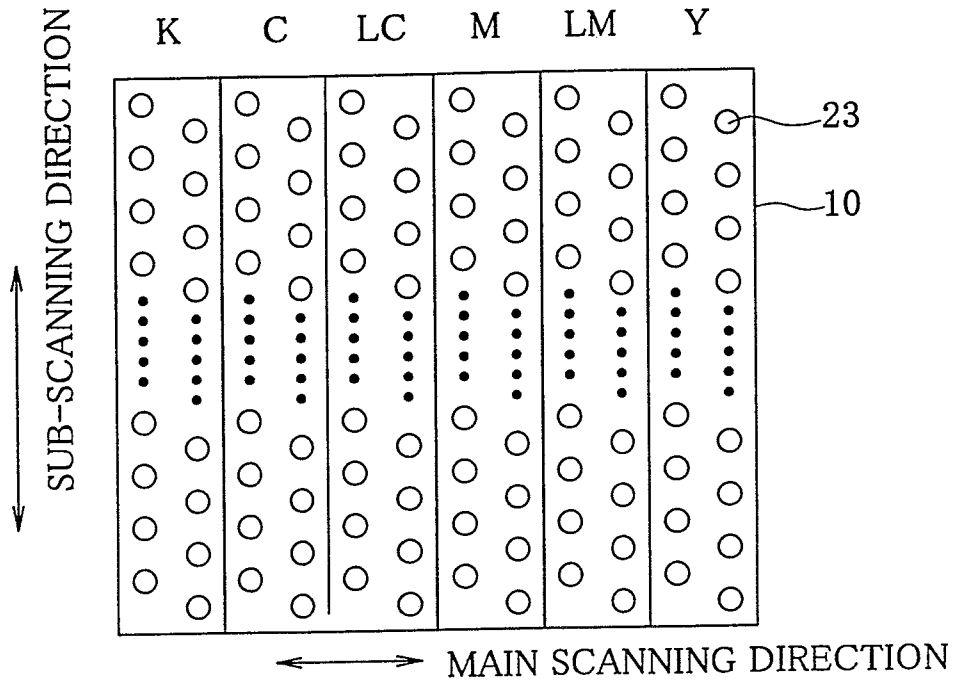

K
C
LC
M
LM
Y
23
10
SUB-SCANNING DIRECTION
MAIN SCANNING DIRECTION

Fig. 6A

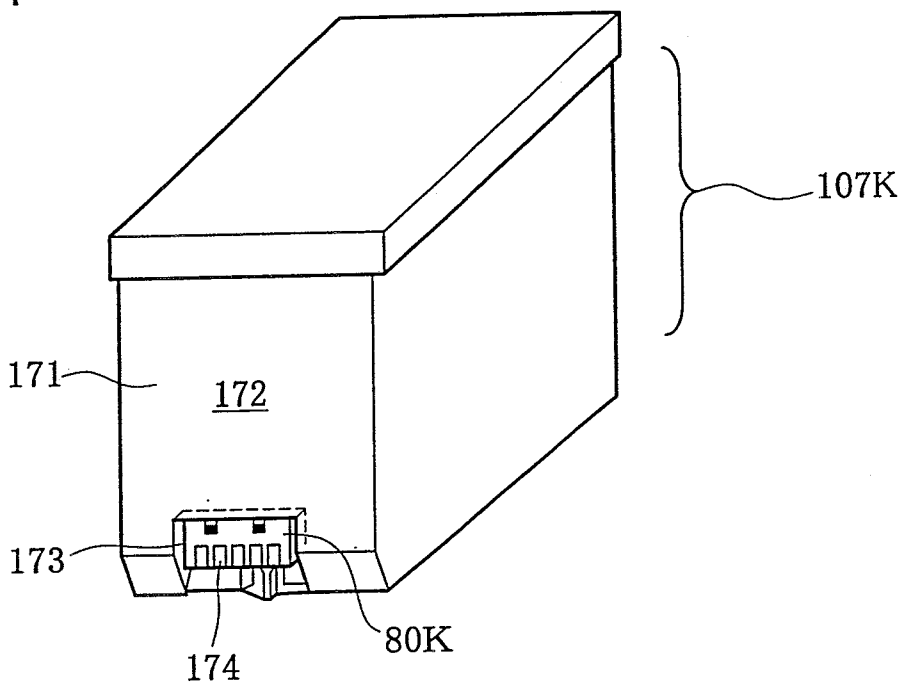


Fig. 6B

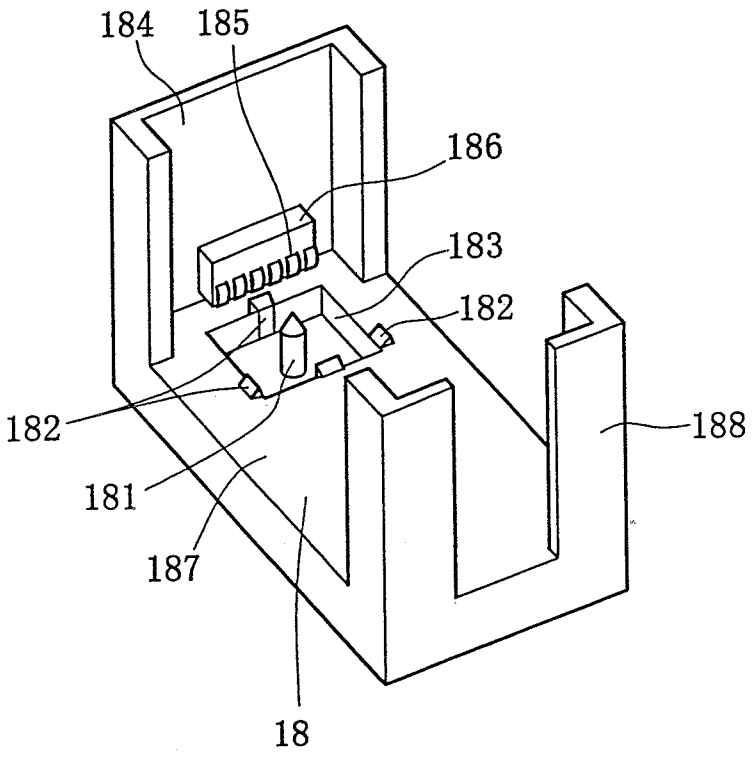
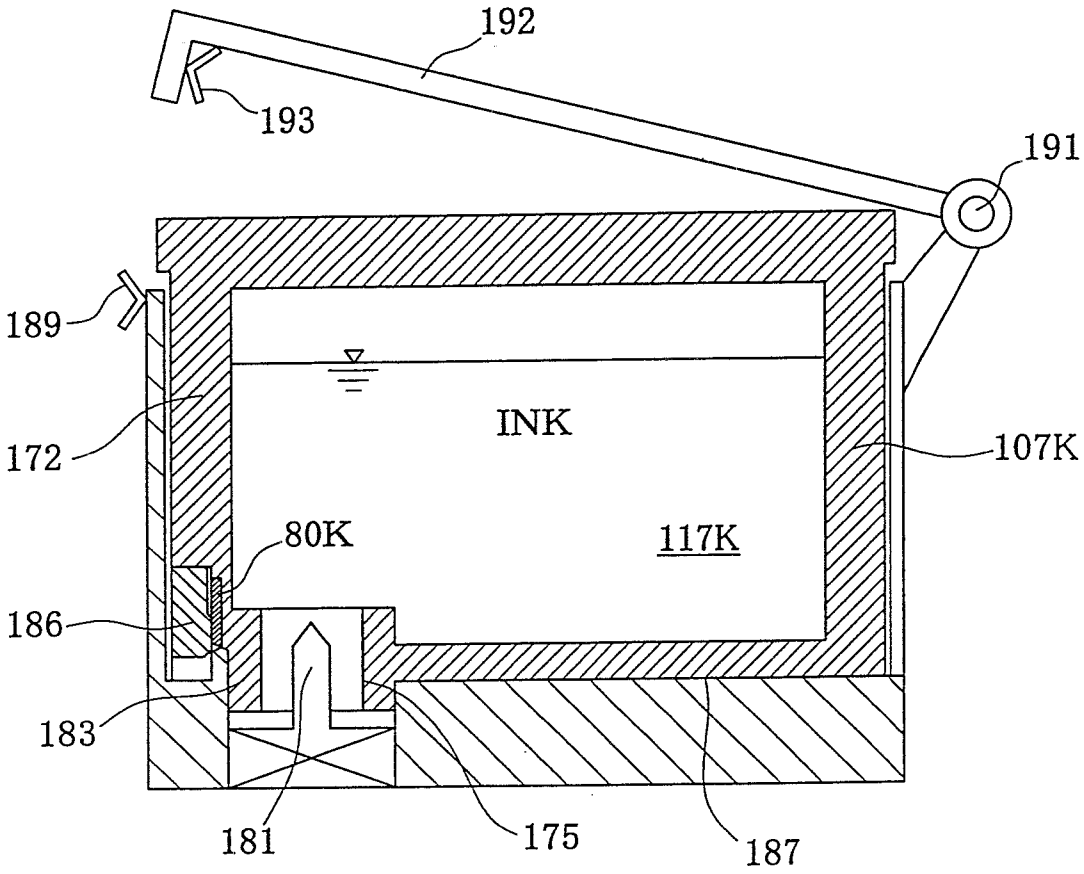


Fig. 7



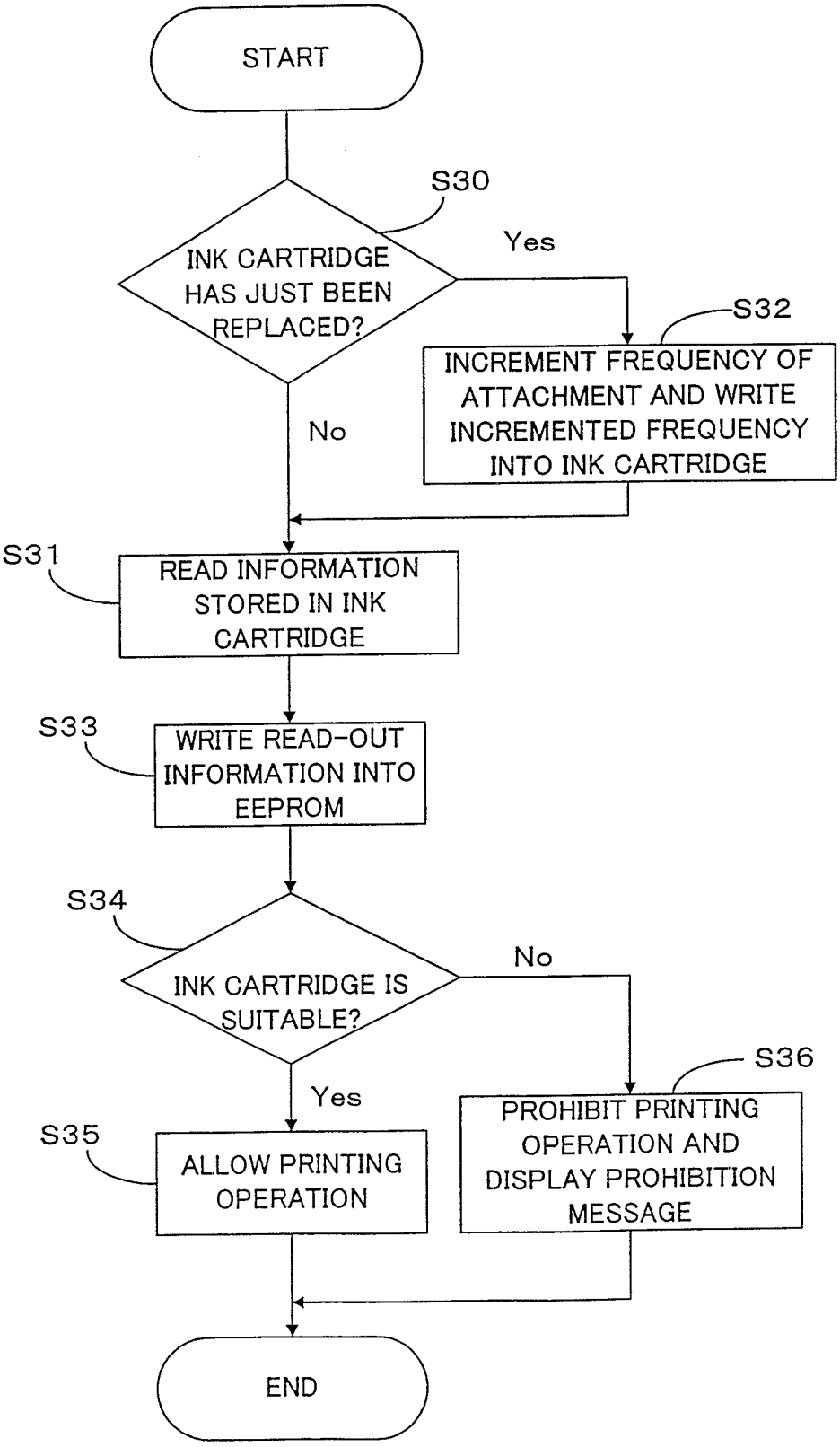

START
S30
INK CARTRIDGE HAS JUST BEEN REPLACED?
Yes
No
S32
INCREMENT FREQUENCY OF ATTACHMENT AND WRITE INCREMENTED FREQUENCY INTO INK CARTRIDGE
S31
READ INFORMATION STORED IN INK CARTRIDGE
S33
WRITE READ-OUT INFORMATION INTO EEPROM
S34
INK CARTRIDGE IS SUITABLE?
No
Yes
S36
PROHIBIT PRINTING OPERATION AND DISPLAY PROHIBITION MESSAGE
S35
ALLOW PRINTING OPERATION
END

Fig. 8

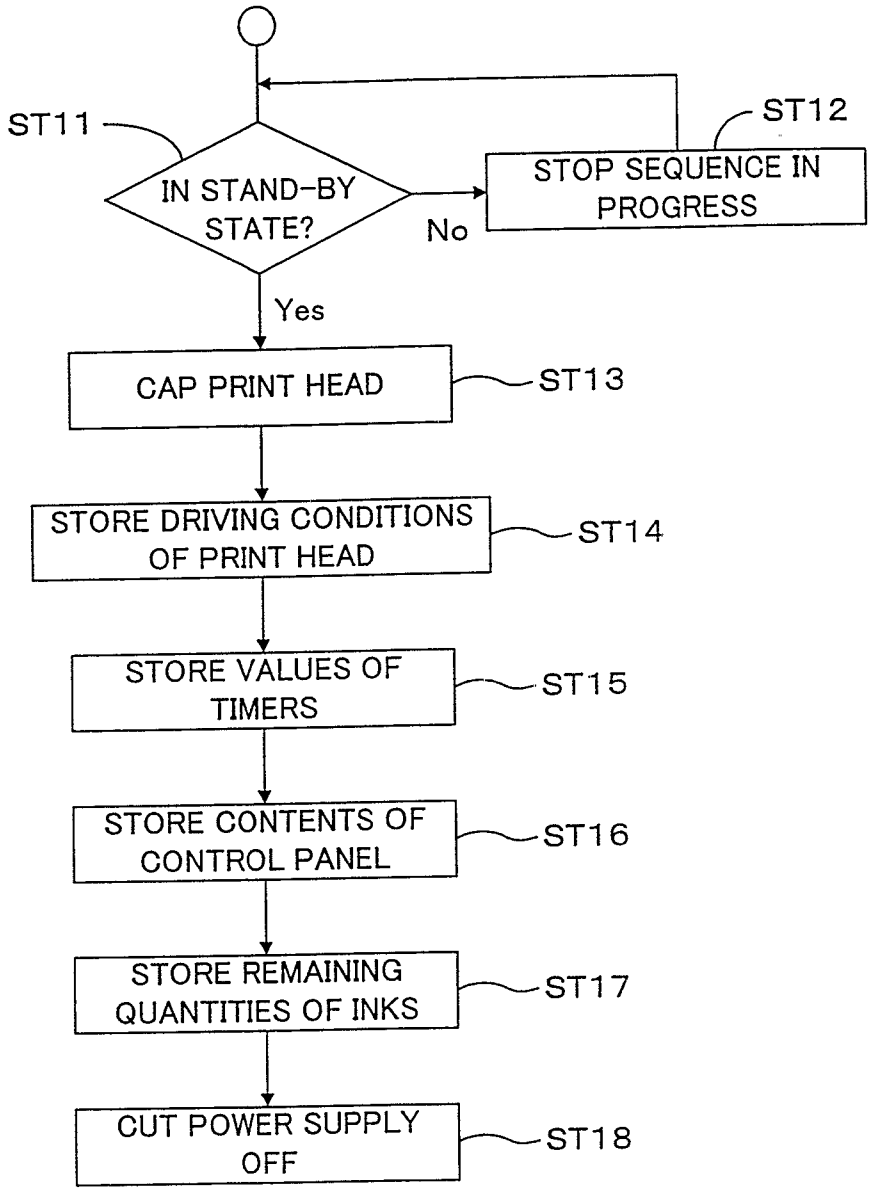

ST11
IN STAND-BY STATE?
No
ST12
STOP SEQUENCE IN PROGRESS
Yes
CAP PRINT HEAD
ST13
STORE DRIVING CONDITIONS OF PRINT HEAD
ST14
STORE VALUES OF TIMERS
ST15
STORE CONTENTS OF CONTROL PANEL
ST16
STORE REMAINING QUANTITIES OF INKS
ST17
CUT POWER SUPPLY OFF
ST18

Fig. 9

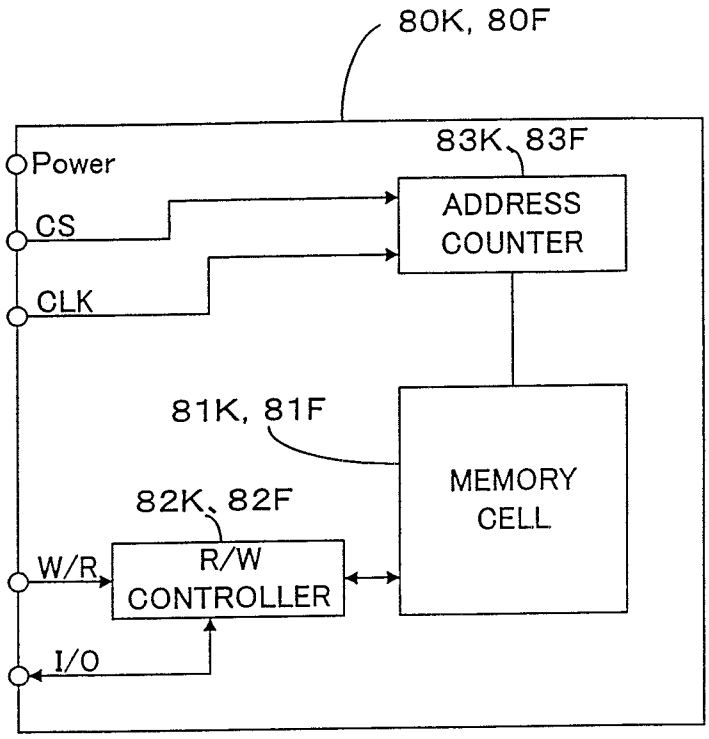

80K, 80F
83K, 83F
Power
CS
CLK
ADDRESS COUNTER
81K, 81F
MEMORY CELL
82K, 82F
W/R
R/W CONTROLLER
I/O

Fig. 10

Address of Control IC 200	Data Length (byte)	Items of Information	Address of Storage Element 80K	Capacity (bit) in Storage Element	
00	1	Remaining quantity of black ink	00	8	650
01	1	Frequency of cleaning	08	8	
02	1	Frequency of attachment	10	8	
03	2	Total time period of attachment	18	16	
05	1	Year of manufacture	28	7	660
06	1	Month of manufacture	2F	4	
07	1	Date of manufacture	33	5	
08	1	Hour of manufacture	38	5	
09	1	Minute of manufacture	3D	6	
0A	1	Production serial No.	43	8	
0B	1	Frequency of recycle	4B	3	
0C	2	Ink cartridge name	4E	10	
0E	1	Ink type	58	8	
0F	1	Term of validity	60	6	
10	1	Term of validity after unsealed	66	5	

Fig.11

Address of Control IC 200	Data Length (byte)	Items of Information	Address of Storage Element 80F	Capacity (bit) in Storage Element	
20	1	Remaining quantity of cyan ink	00	8	750
21	1	Remaining quantity of magenta ink	08	8	
22	1	Remaining quantity of yellow ink	10	8	
23	1	Remaining quantity of light cyan ink	18	8	
24	1	Remaining quantity of light magenta	20	8	
25	1	Frequency of cleaning	28	8	
26	1	Frequency of attachment	30	8	
27	2	Total time period of attachment	38	16	
29	1	Year of manufacture	48	7	760
2A	1	Month of manufacture	4F	4	
2B	1	Date of manufacture	53	5	
2C	1	Hour of manufacture	58	5	
2D	1	Minute of manufacture	5D	6	
2E	1	Production serial No.	63	8	
2F	1	Frequency of recycle	6B	3	
30	2	Ink cartridge name	6E	10	
32	1	Ink type	78	8	
33	1	Term of validity	80	6	
34	1	Term of validity after unsealed	86	5	

Fig. 12

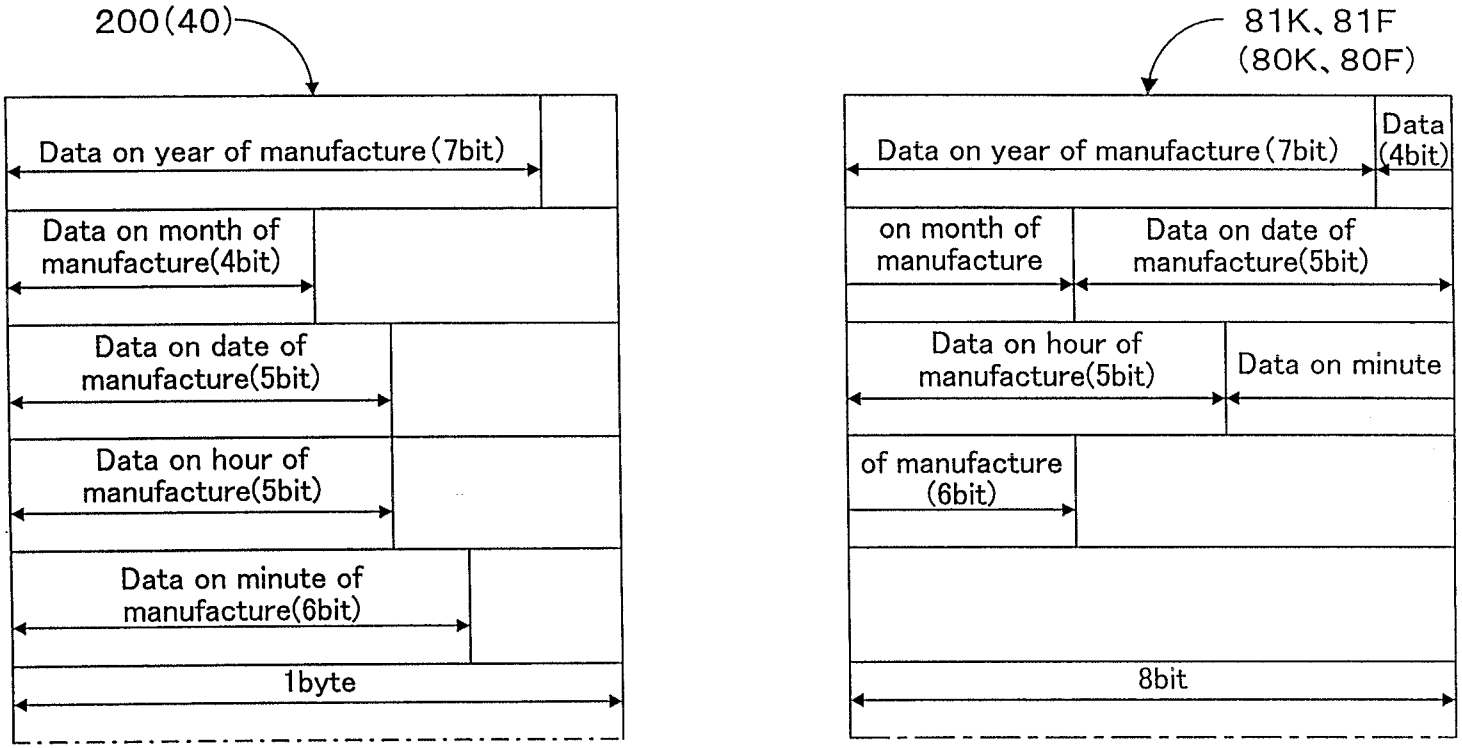

200(40)
Data on year of manufacture(7bit)
Data on month of manufacture(4bit)
Data on date of manufacture(5bit)
Data on hour of manufacture(5bit)
Data on minute of manufacture(6bit)
1byte
81K、81F
(80K、80F)
Data on year of manufacture(7bit)
Data (4bit)
on month of manufacture
Data on date of manufacture(5bit)
Data on hour of manufacture(5bit)
Data on minute
of manufacture (6bit)
8bit

Fig. 13

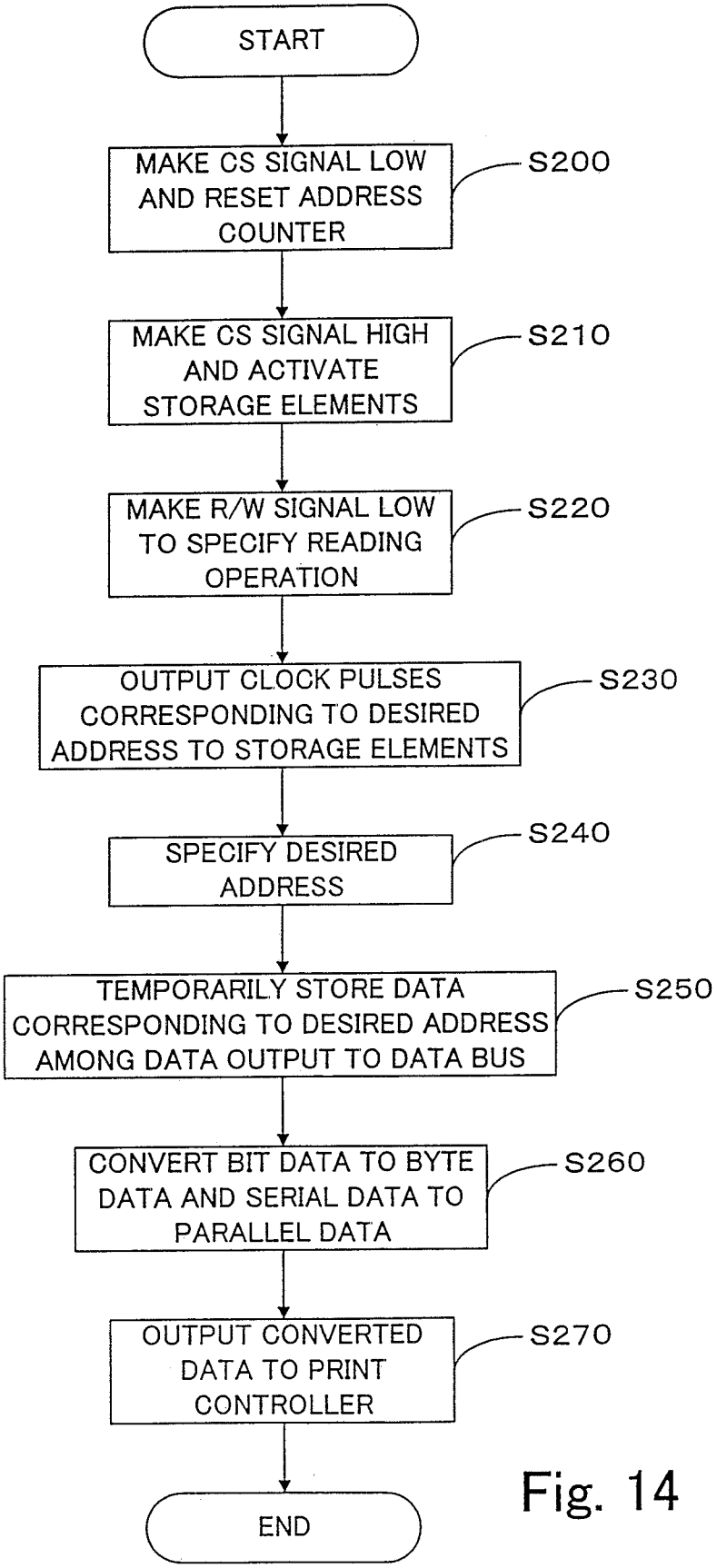

START
MAKE CS SIGNAL LOW AND RESET ADDRESS COUNTER
S200
MAKE CS SIGNAL HIGH AND ACTIVATE STORAGE ELEMENTS
S210
MAKE R/W SIGNAL LOW TO SPECIFY READING OPERATION
S220
OUTPUT CLOCK PULSES CORRESPONDING TO DESIRED ADDRESS TO STORAGE ELEMENTS
S230
SPECIFY DESIRED ADDRESS
S240
TEMPORARILY STORE DATA CORRESPONDING TO DESIRED ADDRESS AMONG DATA OUTPUT TO DATA BUS
S250
CONVERT BIT DATA TO BYTE DATA AND SERIAL DATA TO PARALLEL DATA
S260
OUTPUT CONVERTED DATA TO PRINT CONTROLLER
S270
END

Fig. 14

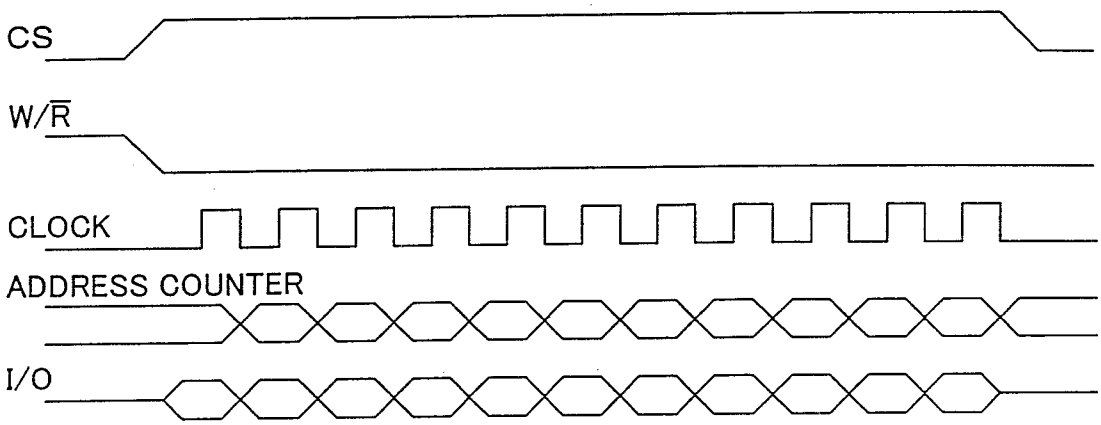


Fig. 15

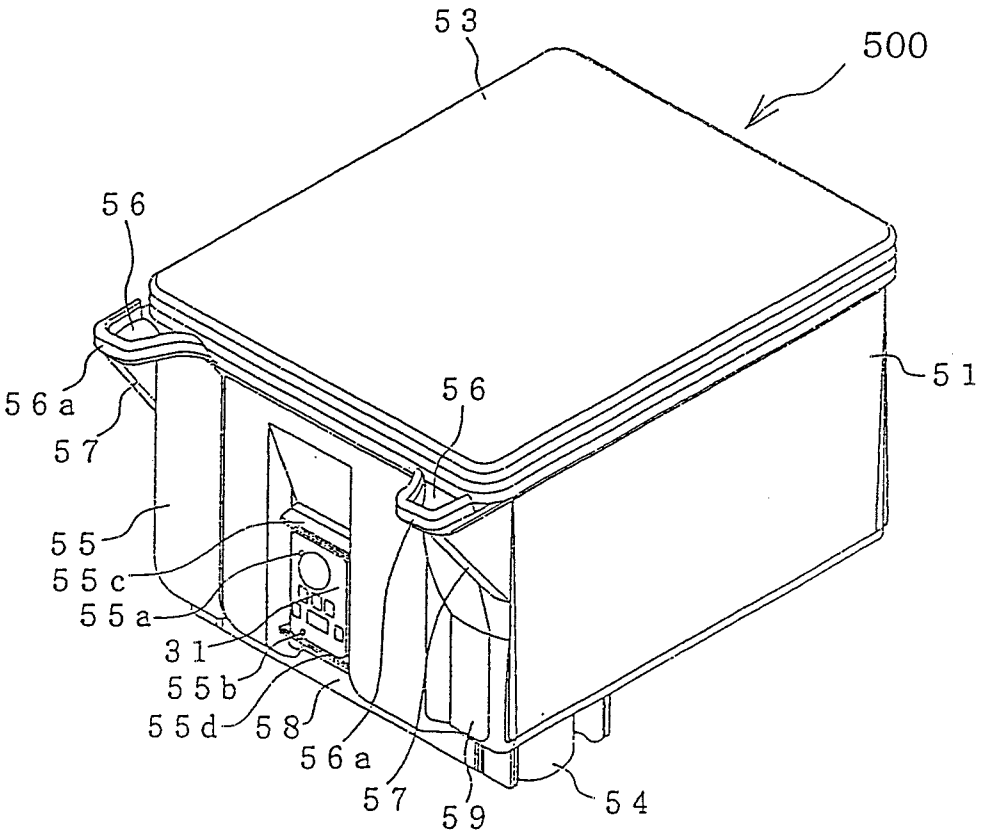



Fig.16