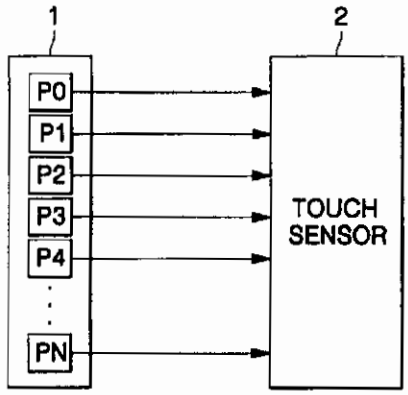
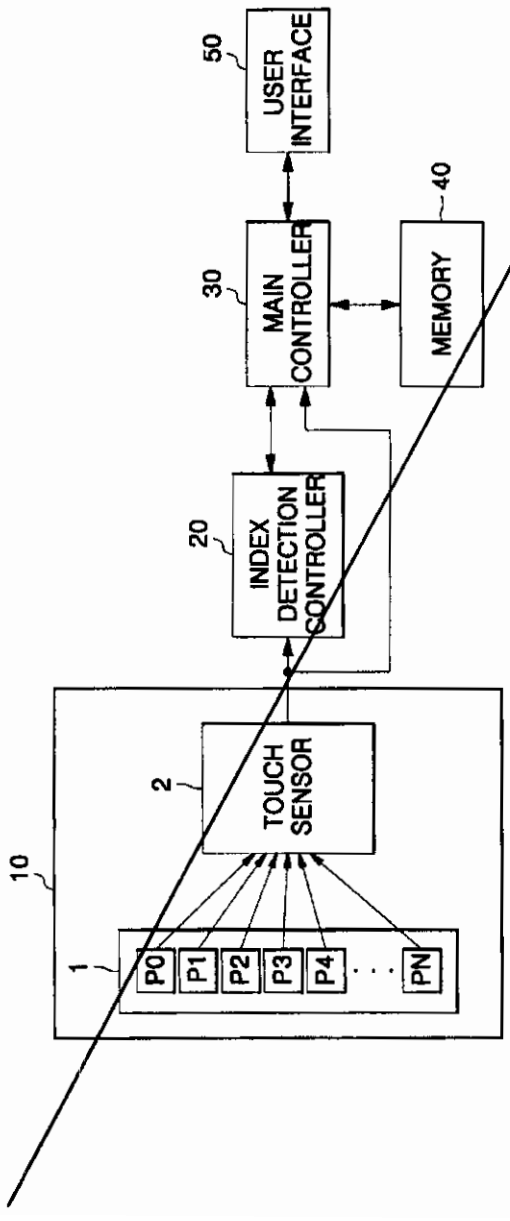
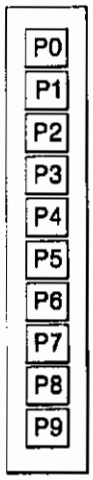
[Fig. 1]


1
2
P0
P1
P2
P3
P4
PN
TOUCH SENSOR

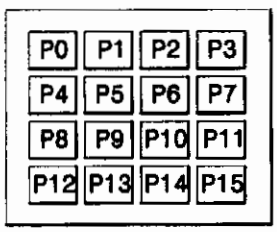
[Fig. 2]


50
USER INTERFACE
40
30
MAIN CONTROLLER
MEMORY
20
INDEX DETECTION CONTROLLER
10
2
TOUCH SENSOR
1
P0
P1
P2
P3
P4
PN

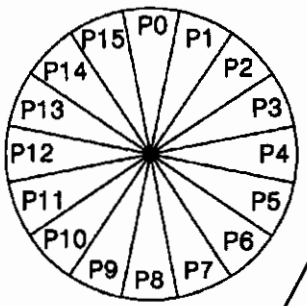
[Fig. 3]



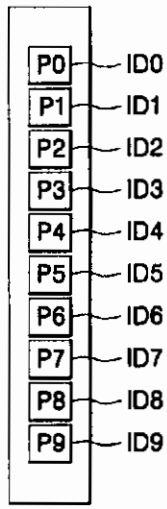
[Fig. 4]



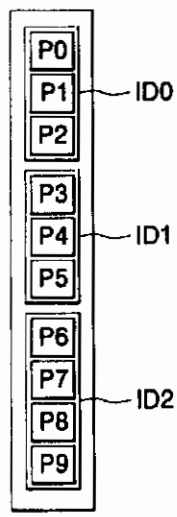
[Fig. 5]



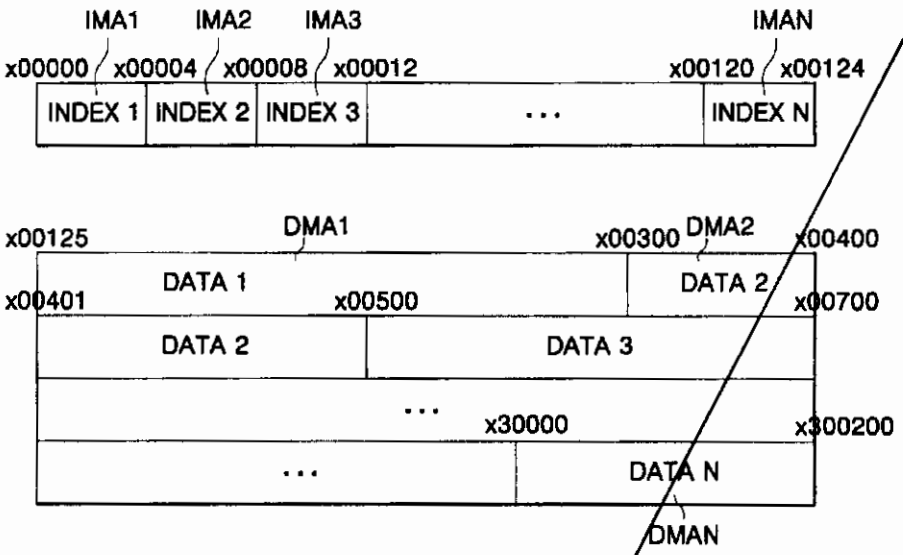
[Fig. 6]


P0
P1
P2
P3
P4
P5
P6
P7
P8
P9
ID0
ID1
ID2
ID3
ID4
ID5
ID6
ID7
ID8
ID9

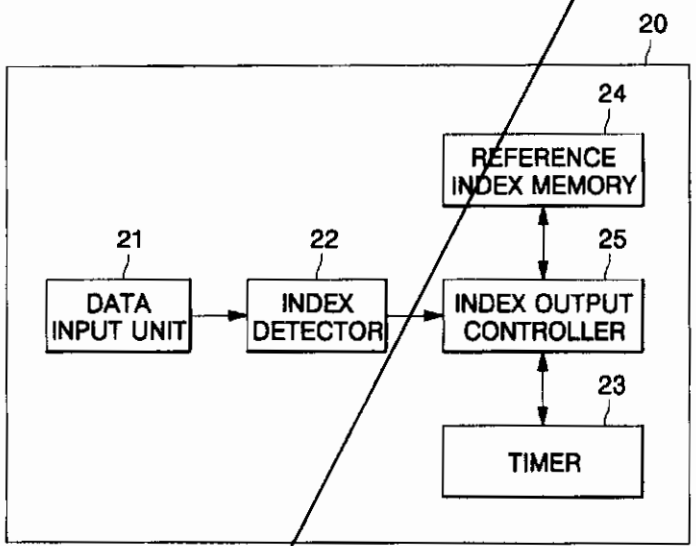
[Fig. 7]


P0
P1
P2
P3
P4
P5
P6
P7
P8
P9
ID0
ID1
ID2

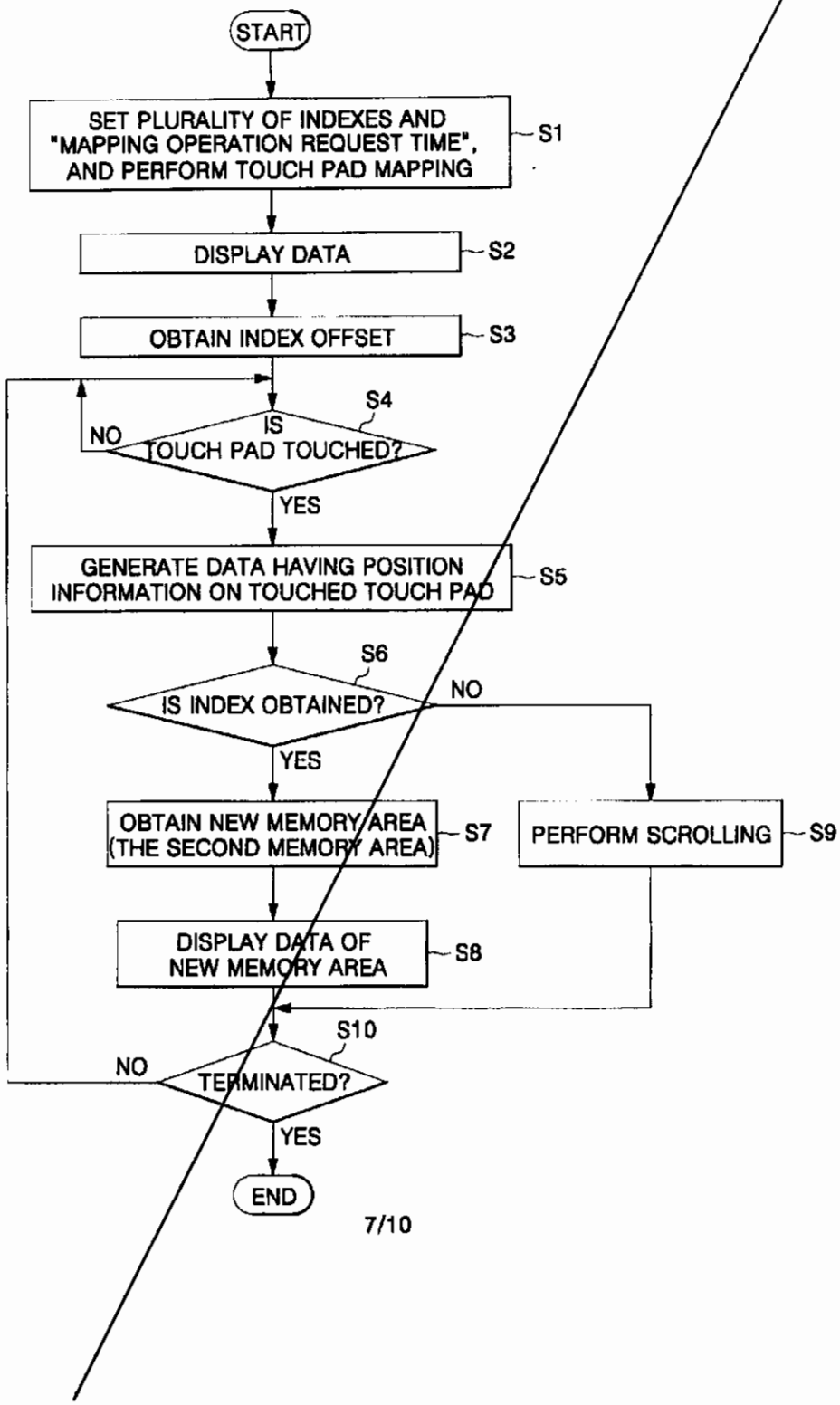
[Fig. 8]


IMA1
IMA2
IMA3
IMAN
x00000
x00004
x00008
x00012
x00120
x00124
INDEX 1
INDEX 2
INDEX 3
...
INDEX N
x00125
DMA1
x00300
DMA2
x00400
DATA 1
x00401
x00500
DATA 2
x00700
DATA 2
DATA 3
...
x30000
x300200
...
DATA N
DMAN

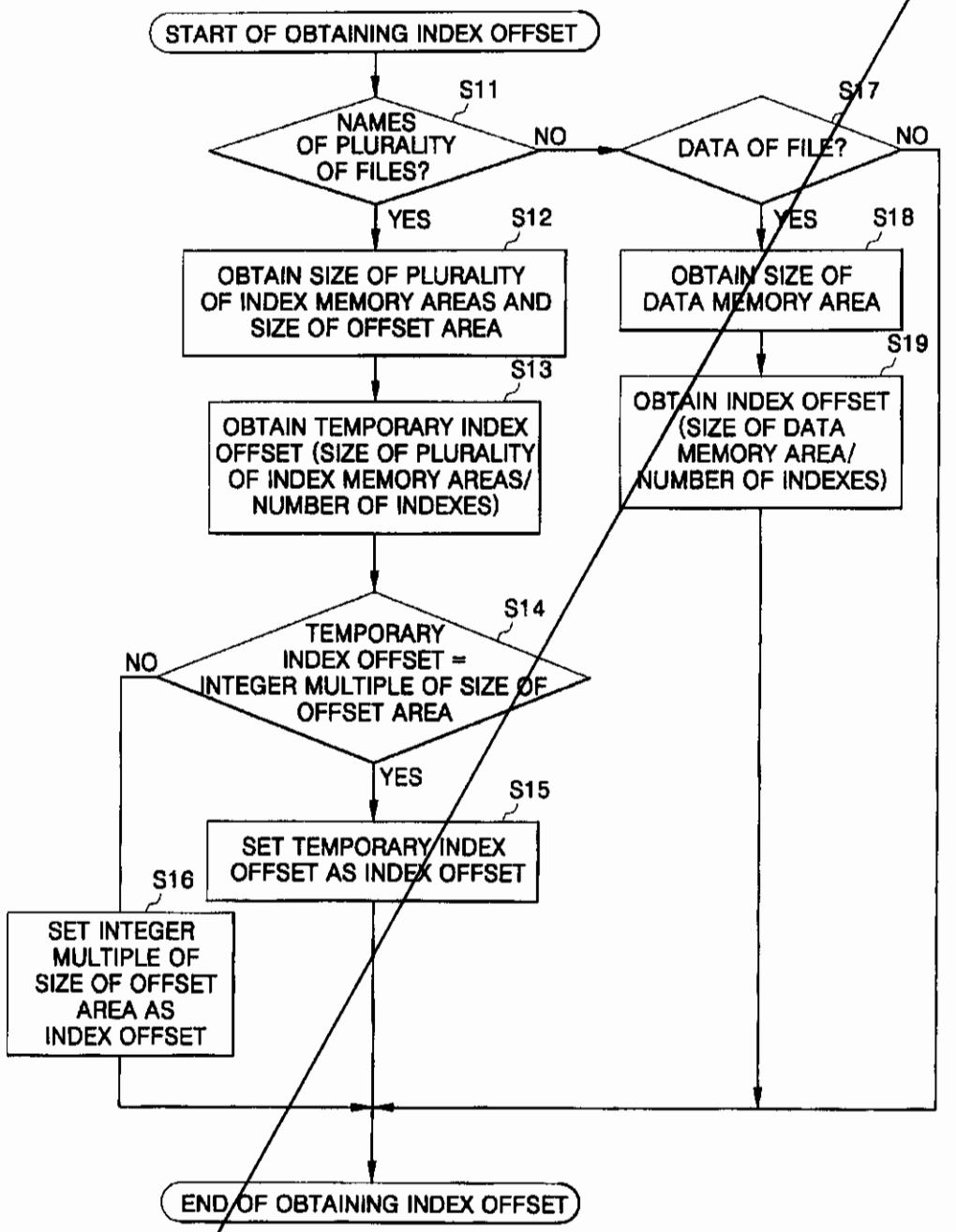
[Fig. 9]


20
24
REFERENCE INDEX MEMORY
21
22
25
DATA INPUT UNIT
INDEX DETECTOR
INDEX OUTPUT CONTROLLER
23
TIMER

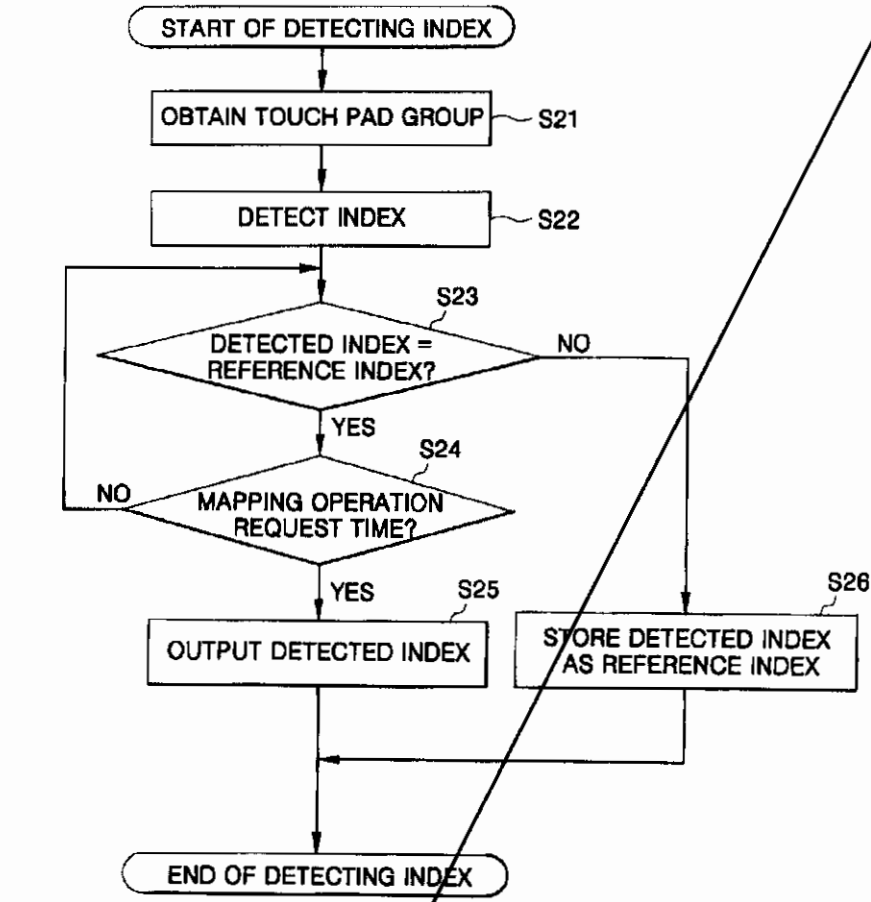
[Fig. 10]


START
SET PLURALITY OF INDEXES AND "MAPPING OPERATION REQUEST TIME", AND PERFORM TOUCH PAD MAPPING
S1
DISPLAY DATA
S2
OBTAIN INDEX OFFSET
S3
S4
IS TOUCH PAD TOUCHED?
NO
YES
GENERATE DATA HAVING POSITION INFORMATION ON TOUCHED TOUCH PAD
S5
S6
IS INDEX OBTAINED?
NO
YES
OBTAIN NEW MEMORY AREA (THE SECOND MEMORY AREA)
S7
PERFORM SCROLLING
S9
DISPLAY DATA OF NEW MEMORY AREA
S8
S10
TERMINATED?
NO
YES
END

[Fig. 11]


START OF OBTAINING INDEX OFFSET
S11
NAMES OF PLURALITY OF FILES?
NO
YES
S12
OBTAIN SIZE OF PLURALITY OF INDEX MEMORY AREAS AND SIZE OF OFFSET AREA
S13
OBTAIN TEMPORARY INDEX OFFSET (SIZE OF PLURALITY OF INDEX MEMORY AREAS/ NUMBER OF INDEXES)
S14
TEMPORARY INDEX OFFSET = INTEGER MULTIPLE OF SIZE OF OFFSET AREA
NO
YES
S15
SET TEMPORARY INDEX OFFSET AS INDEX OFFSET
S16
SET INTEGER MULTIPLE OF SIZE OF OFFSET AREA AS INDEX OFFSET
S17
DATA OF FILE?
NO
YES
S18
OBTAIN SIZE OF DATA MEMORY AREA
S19
OBTAIN INDEX OFFSET (SIZE OF DATA MEMORY AREA/ NUMBER OF INDEXES)
END OF OBTAINING INDEX OFFSET

[Fig. 12]


START OF DETECTING INDEX
OBTAIN TOUCH PAD GROUP
S21
DETECT INDEX
S22
S23
DETECTED INDEX = REFERENCE INDEX?
NO
YES
S24
NO
MAPPING OPERATION REQUEST TIME?
YES
S25
S26
OUTPUT DETECTED INDEX
STORE DETECTED INDEX AS REFERENCE INDEX
END OF DETECTING INDEX

[Fig. 13]

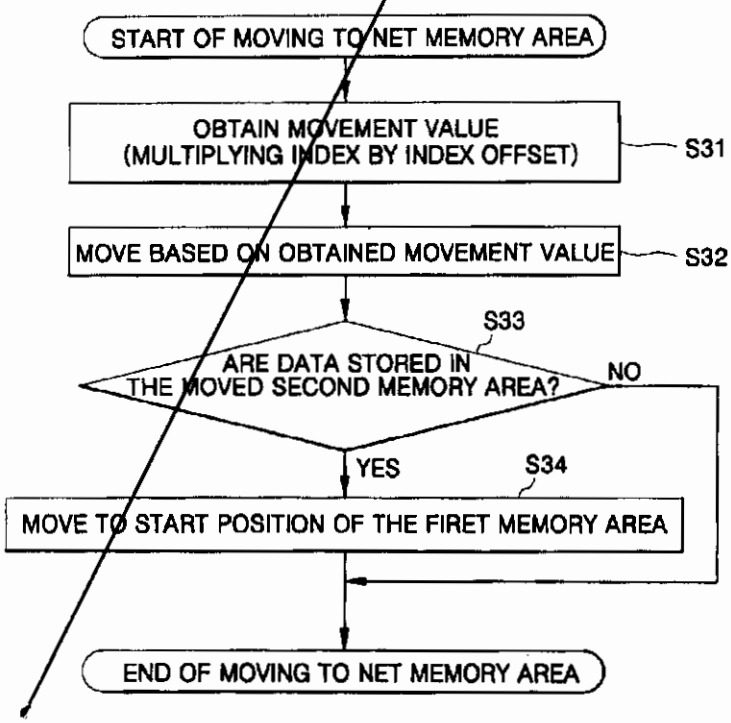

START OF MOVING TO NET MEMORY AREA
OBTAIN MOVEMENT VALUE (MULTIPLYING INDEX BY INDEX OFFSET)
S31
MOVE BASED ON OBTAINED MOVEMENT VALUE
S32
S33
ARE DATA STORED IN THE MOVED SECOND MEMORY AREA?
NO
YES
S34
MOVE TO START POSITION OF THE FIRET MEMORY AREA
END OF MOVING TO NET MEMORY AREA

FIG. 1

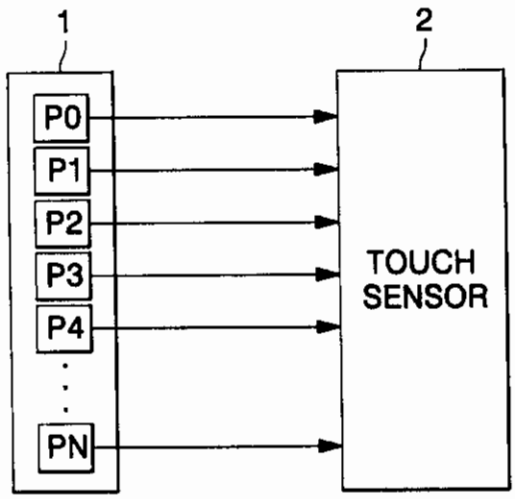


FIG. 2

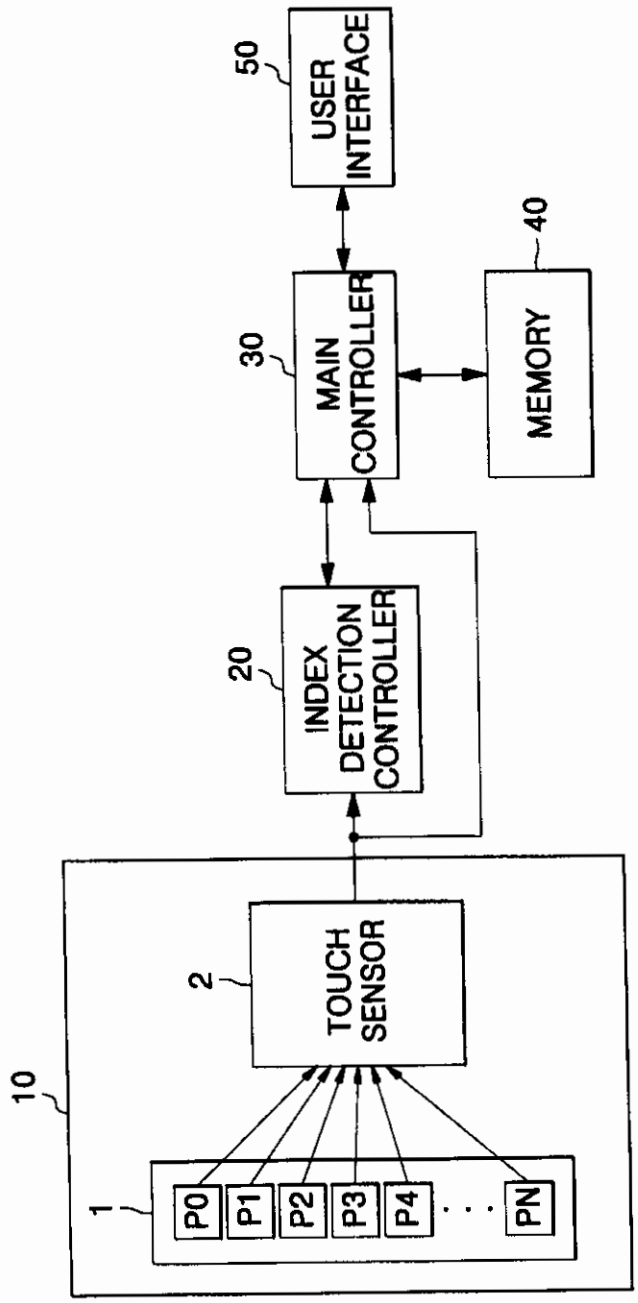

10
1
P0
P1
P2
P3
P4
PN
2
TOUCH SENSOR
20
INDEX DETECTION CONTROLLER
30
MAIN CONTROLLER
40
MEMORY
50
USER INTERFACE

FIG. 3A

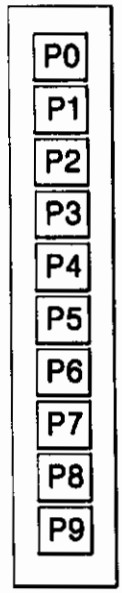

P0
P1
P2
P3
P4
P5
P6
P7
P8
P9

FIG. 3B

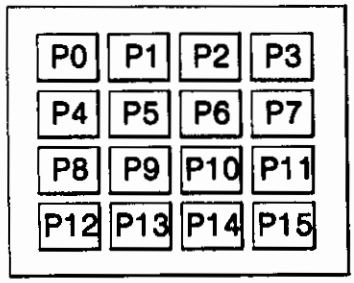

P0
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15

FIG. 3C

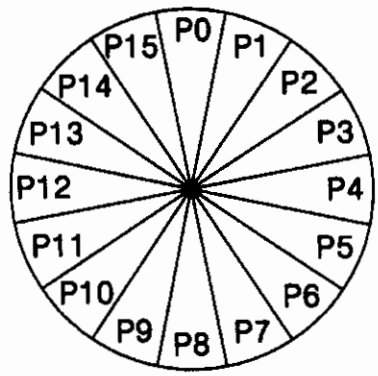


FIG. 3D

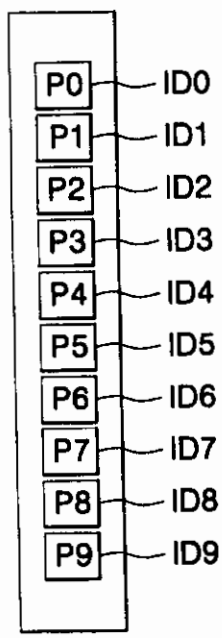


FIG. 3E

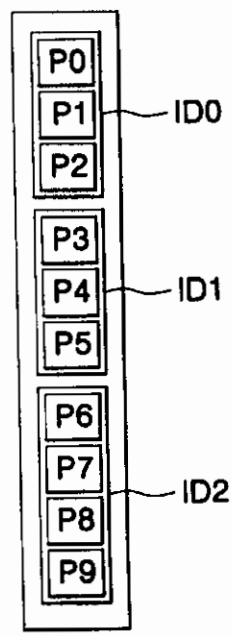


FIG. 4

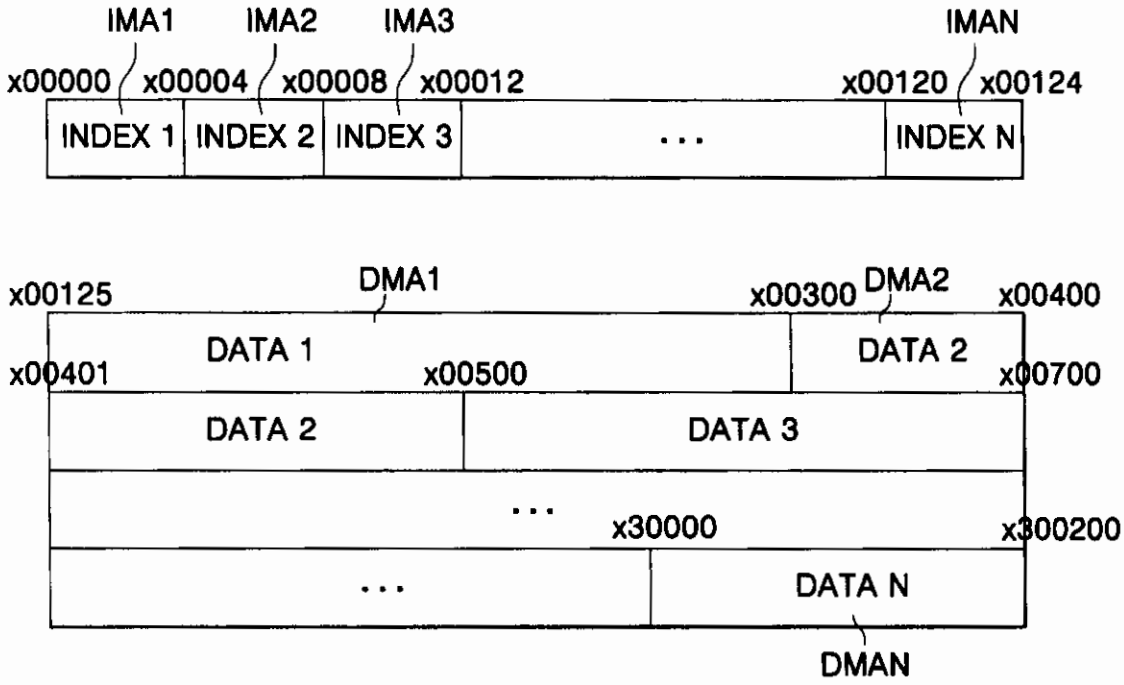

IMA1
IMA2
IMA3
IMAN
x00000
x00004
x00008
x00012
x00120
x00124
INDEX 1
INDEX 2
INDEX 3
...
INDEX N
x00125
DMA1
x00300
DMA2
x00400
DATA 1
x00401
x00500
DATA 2
x00700
DATA 2
DATA 3
...
x30000
x300200
...
DATA N
DMAN

FIG. 5

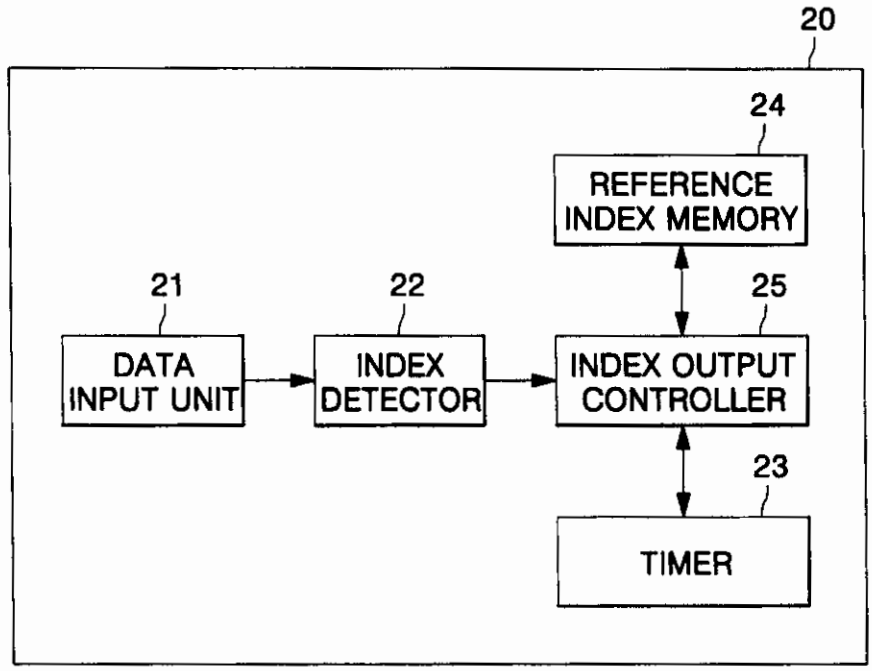

20
24
REFERENCE INDEX MEMORY
21
22
25
DATA INPUT UNIT
INDEX DETECTOR
INDEX OUTPUT CONTROLLER
23
TIMER

FIG. 6

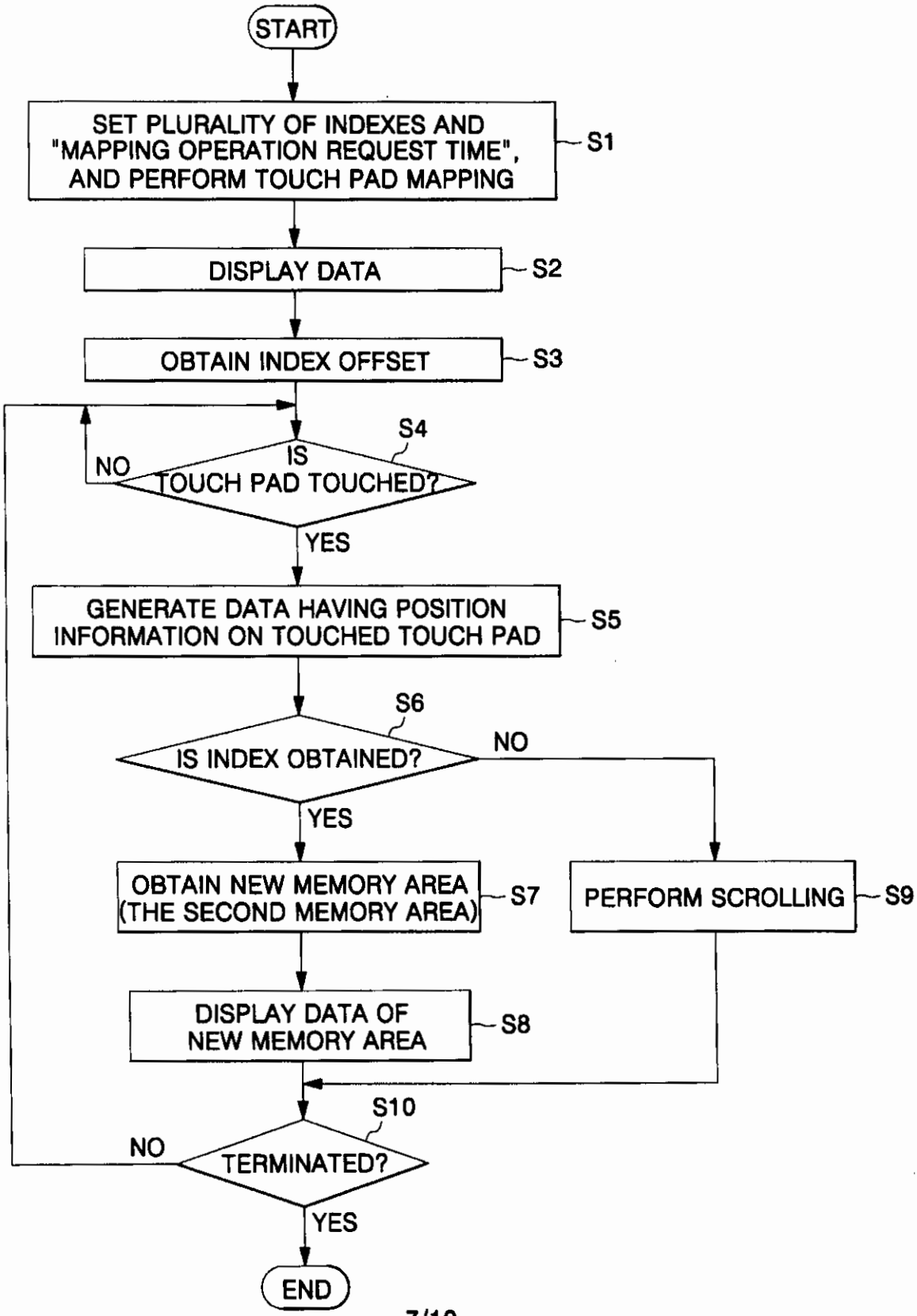

START
SET PLURALITY OF INDEXES AND "MAPPING OPERATION REQUEST TIME", AND PERFORM TOUCH PAD MAPPING
S1
DISPLAY DATA
S2
OBTAIN INDEX OFFSET
S3
S4
IS TOUCH PAD TOUCHED?
NO
YES
GENERATE DATA HAVING POSITION INFORMATION ON TOUCHED TOUCH PAD
S5
S6
IS INDEX OBTAINED?
NO
YES
OBTAIN NEW MEMORY AREA (THE SECOND MEMORY AREA)
S7
PERFORM SCROLLING
S9
DISPLAY DATA OF NEW MEMORY AREA
S8
S10
TERMINATED?
NO
YES
END

FIG. 7

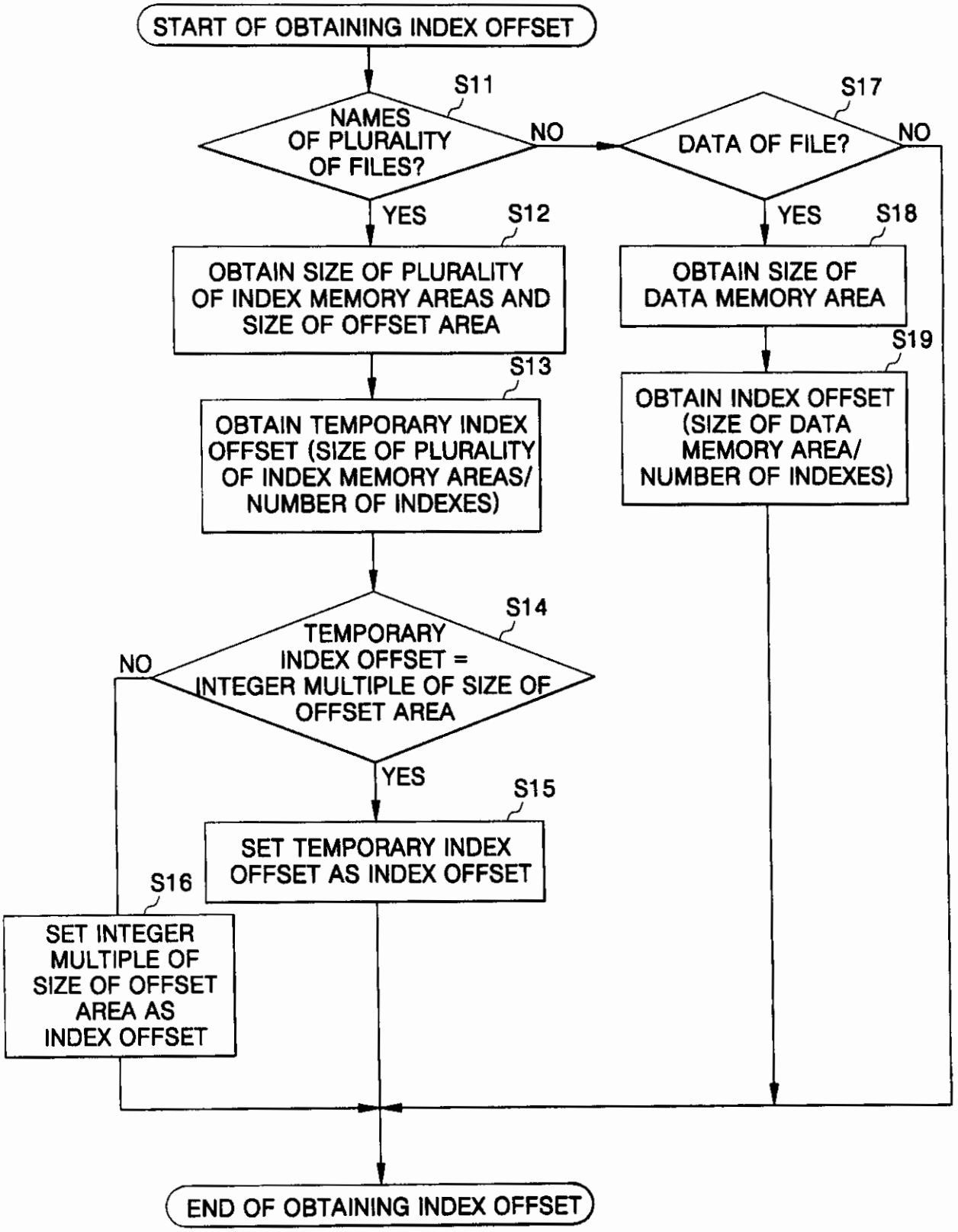

START OF OBTAINING INDEX OFFSET
S11
NAMES OF PLURALITY OF FILES?
NO
YES
S12
OBTAIN SIZE OF PLURALITY OF INDEX MEMORY AREAS AND SIZE OF OFFSET AREA
S13
OBTAIN TEMPORARY INDEX OFFSET (SIZE OF PLURALITY OF INDEX MEMORY AREAS/ NUMBER OF INDEXES)
S14
TEMPORARY INDEX OFFSET = INTEGER MULTIPLE OF SIZE OF OFFSET AREA
NO
YES
S15
SET TEMPORARY INDEX OFFSET AS INDEX OFFSET
S16
SET INTEGER MULTIPLE OF SIZE OF OFFSET AREA AS INDEX OFFSET
S17
DATA OF FILE?
NO
YES
S18
OBTAIN SIZE OF DATA MEMORY AREA
S19
OBTAIN INDEX OFFSET (SIZE OF DATA MEMORY AREA/ NUMBER OF INDEXES)
END OF OBTAINING INDEX OFFSET

FIG. 8

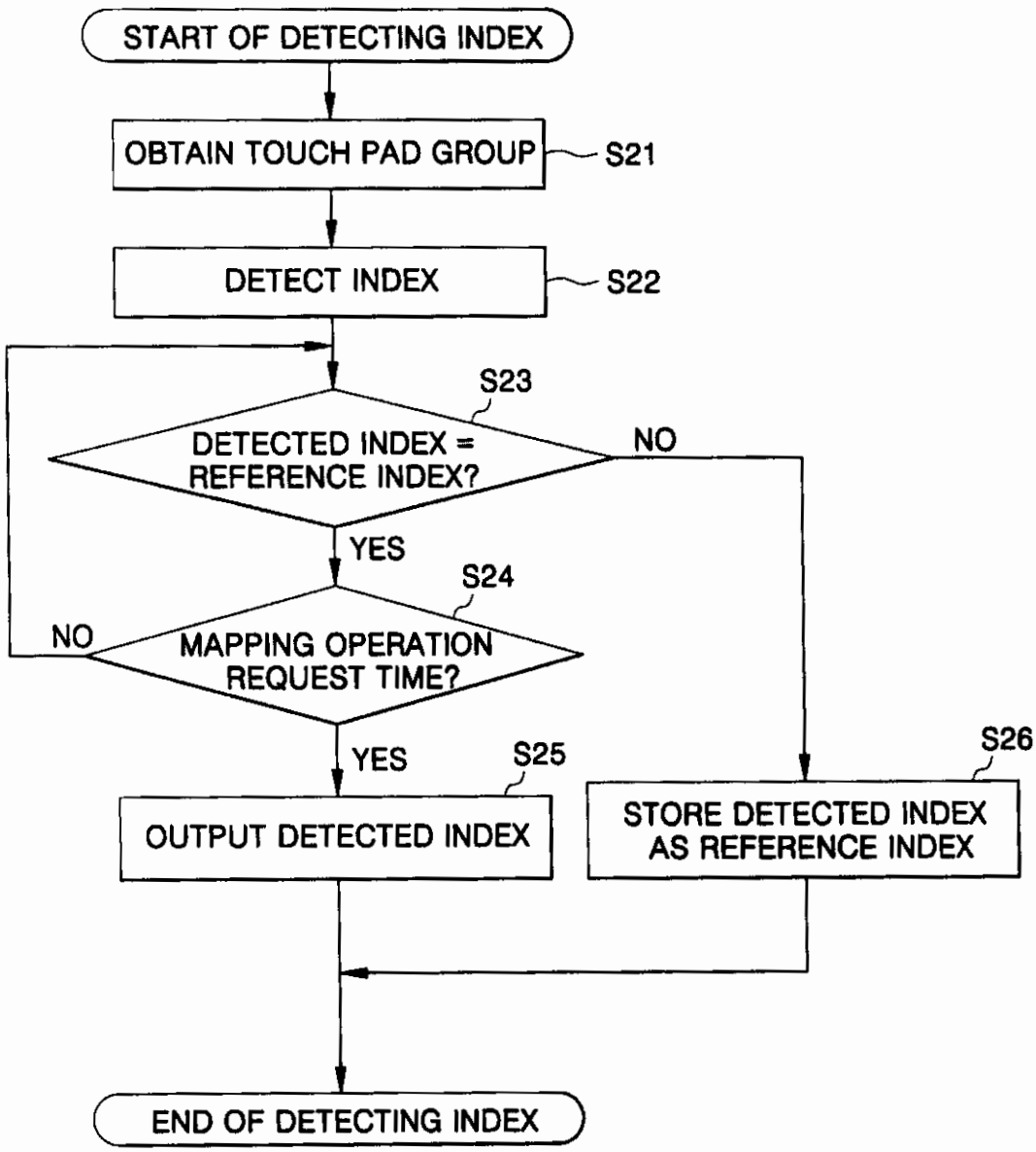
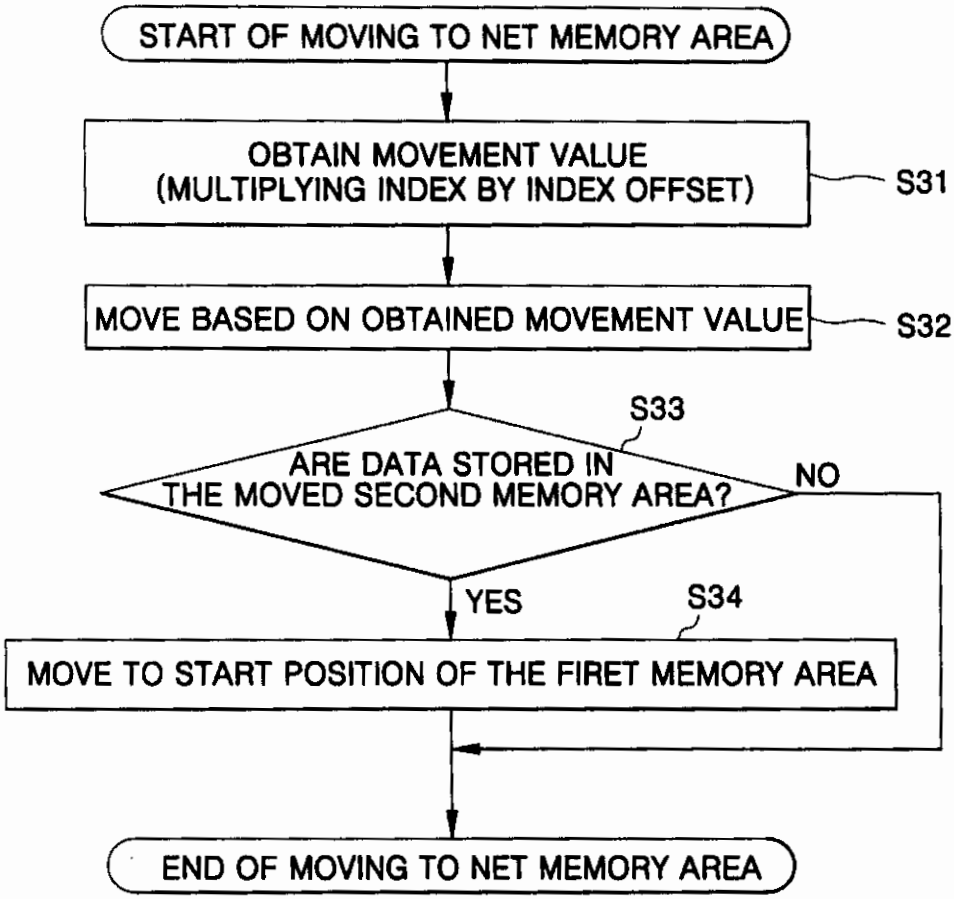

START OF DETECTING INDEX
OBTAIN TOUCH PAD GROUP
S21
DETECT INDEX
S22
S23
DETECTED INDEX = REFERENCE INDEX?
NO
YES
S24
NO
MAPPING OPERATION REQUEST TIME?
YES
S25
OUTPUT DETECTED INDEX
S26
STORE DETECTED INDEX AS REFERENCE INDEX
END OF DETECTING INDEX

FIG. 9


START OF MOVING TO NET MEMORY AREA
OBTAIN MOVEMENT VALUE (MULTIPLYING INDEX BY INDEX OFFSET)
S31
MOVE BASED ON OBTAINED MOVEMENT VALUE
S32
S33
ARE DATA STORED IN THE MOVED SECOND MEMORY AREA?
NO
YES
S34
MOVE TO START POSITION OF THE FIRET MEMORY AREA
END OF MOVING TO NET MEMORY AREA