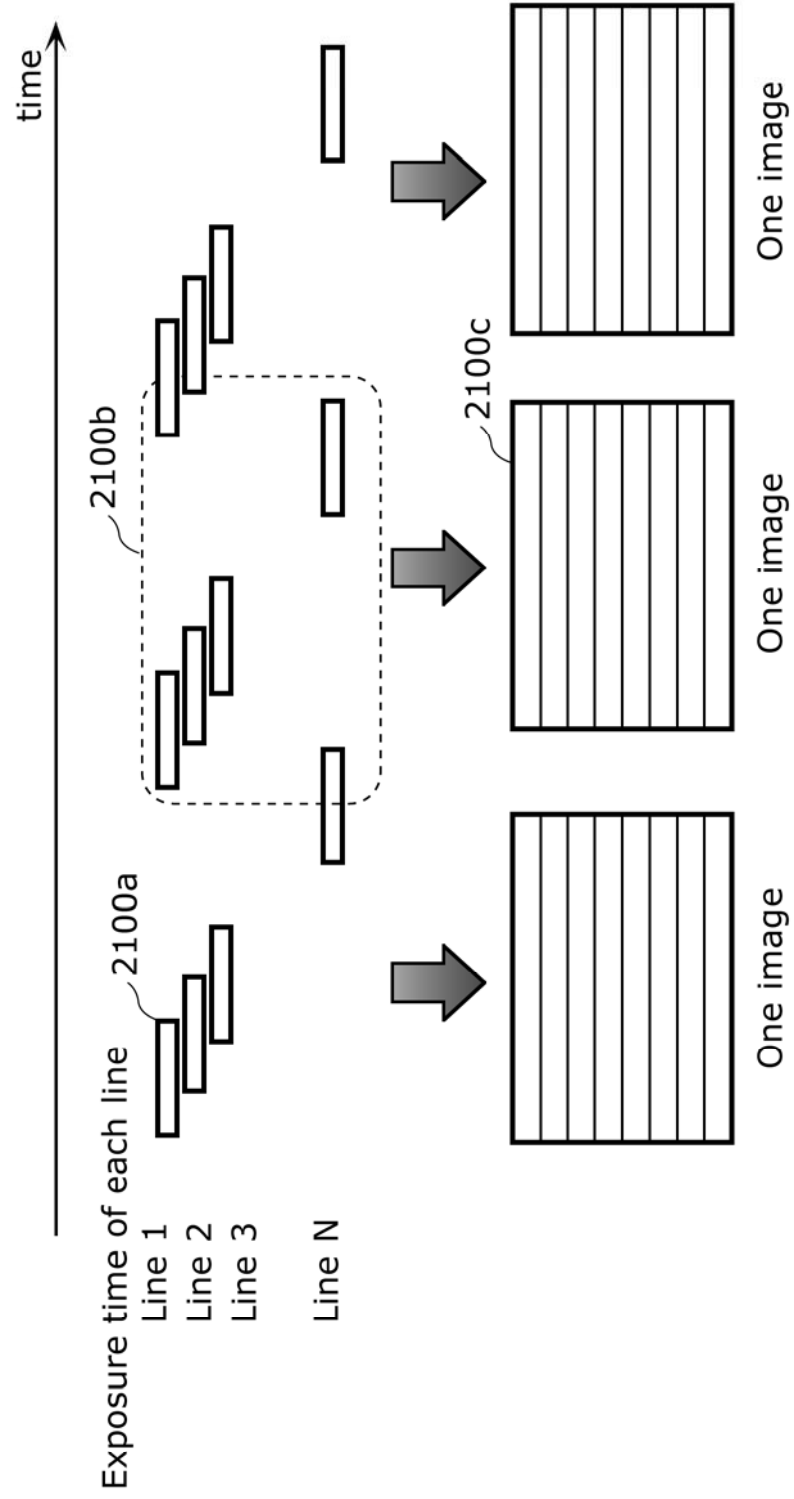


FIG. 1



**FIG. 2**

Light emission time of transmitter

time

2101a 2101b 2101c

2101d 2101e

Exposure time of each line

Line 1  
Line 2  
Line 3  
Line 4  
Line 5  
Line 6  
Line 7  
Line 8

2101f

Captured image

The diagram illustrates the light emission time of a transmitter and the resulting captured image. At the top, a horizontal axis labeled 'time' shows three light emission events: 2101a, 2101b, and 2101c, each represented by a sun-like symbol with a horizontal arrow. Below this, a sequence of squares represents the exposure time for each line (Line 1 to Line 8). The squares are arranged in two rows: the first row contains squares for Line 1, Line 2, Line 3, Line 4, Line 5, Line 6, Line 7, and Line 8; the second row contains squares for Line 1, Line 2, Line 3, Line 4, Line 5, Line 6, Line 7, and Line 8. The squares are labeled 2101d and 2101e. The squares for Line 3, Line 4, Line 5, Line 6, Line 7, and Line 8 in the second row are shaded with diagonal lines. Two large arrows point from the exposure time sequence to the captured image. The captured image (2101f) is a vertical strip showing the resulting line exposure patterns. It consists of eight horizontal lines. The first four lines (Line 1 to Line 4) are white, and the last four lines (Line 5 to Line 8) are shaded with diagonal lines.

FIG. 3

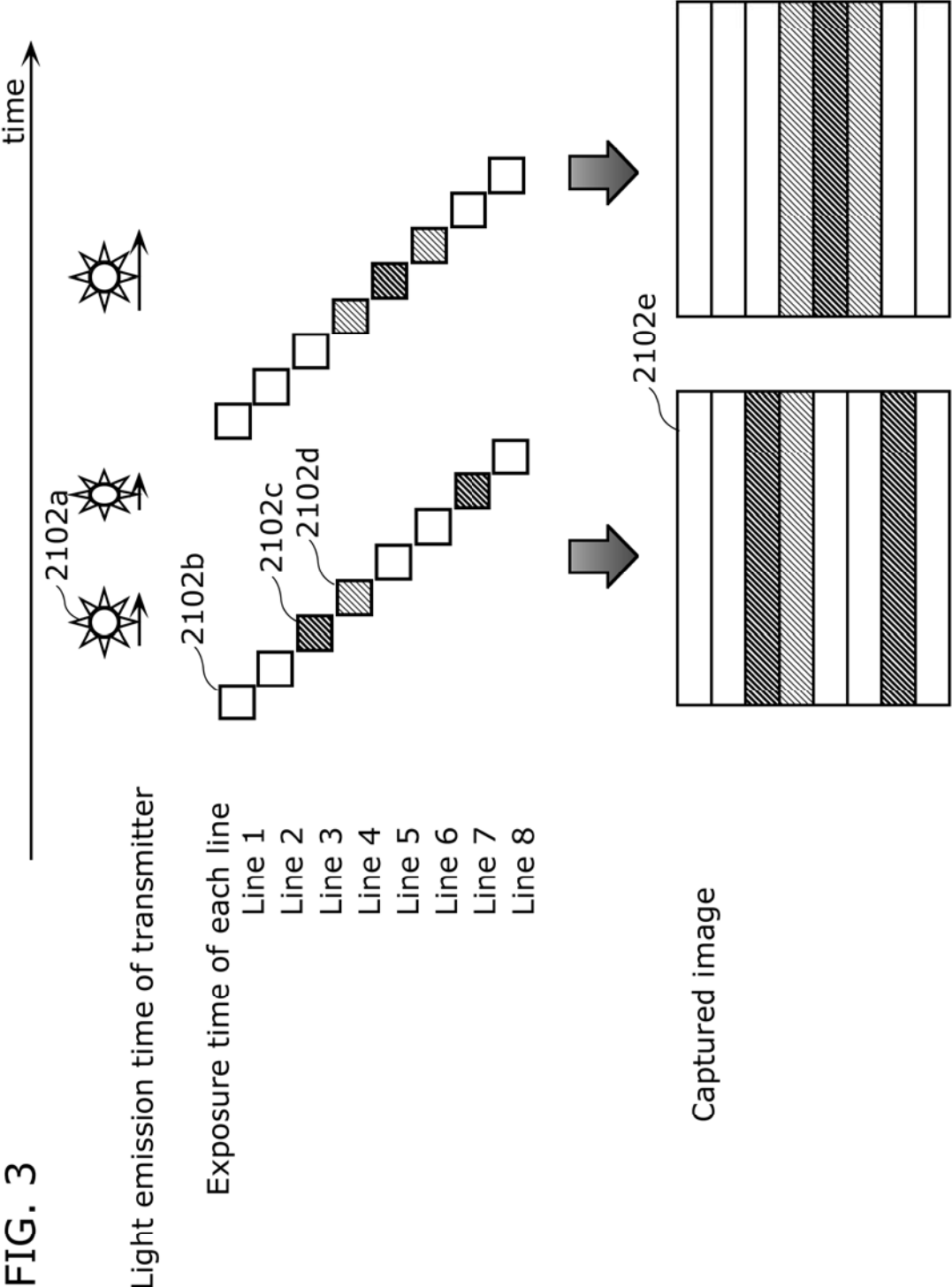


FIG. 4A

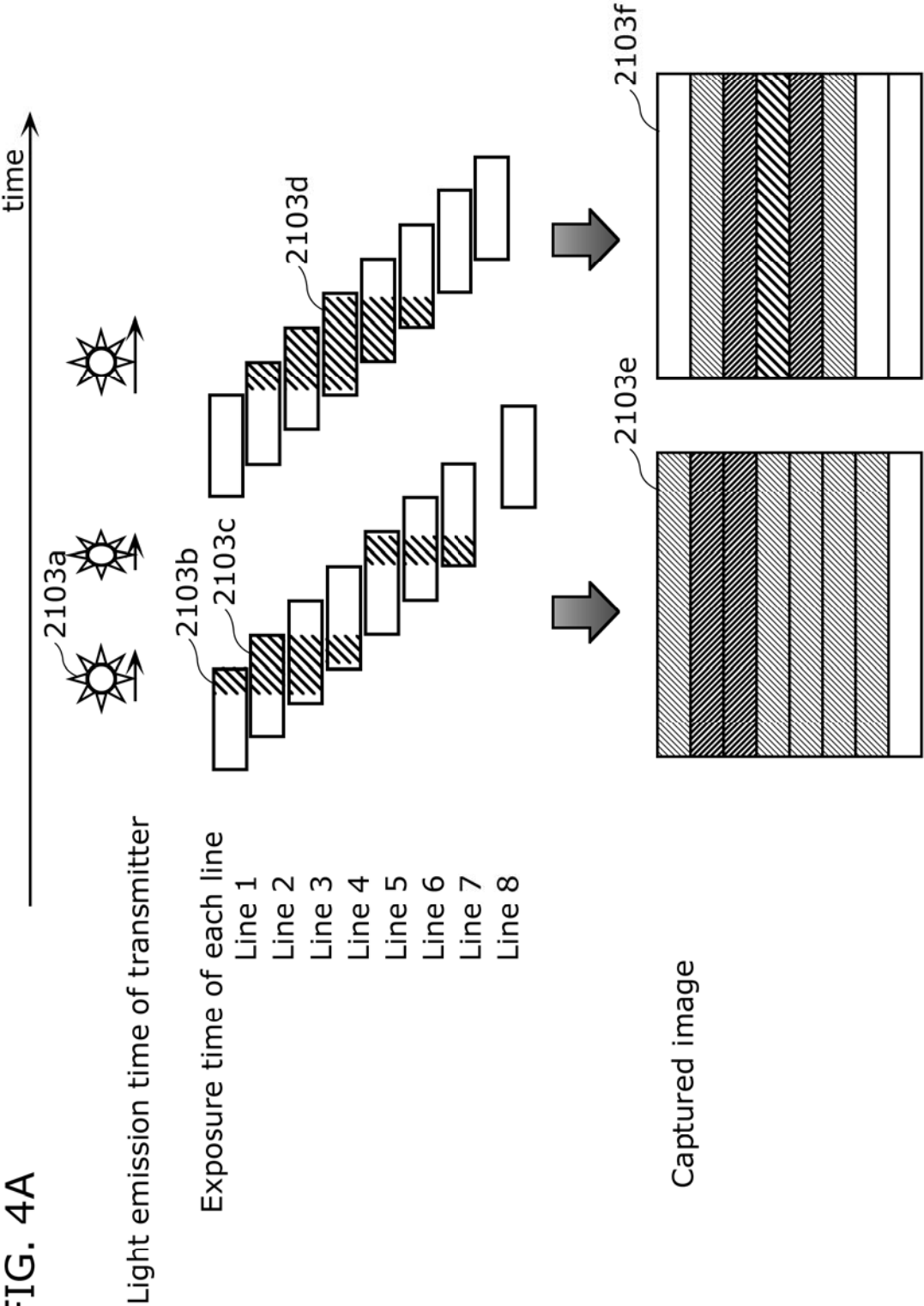




FIG. 4B

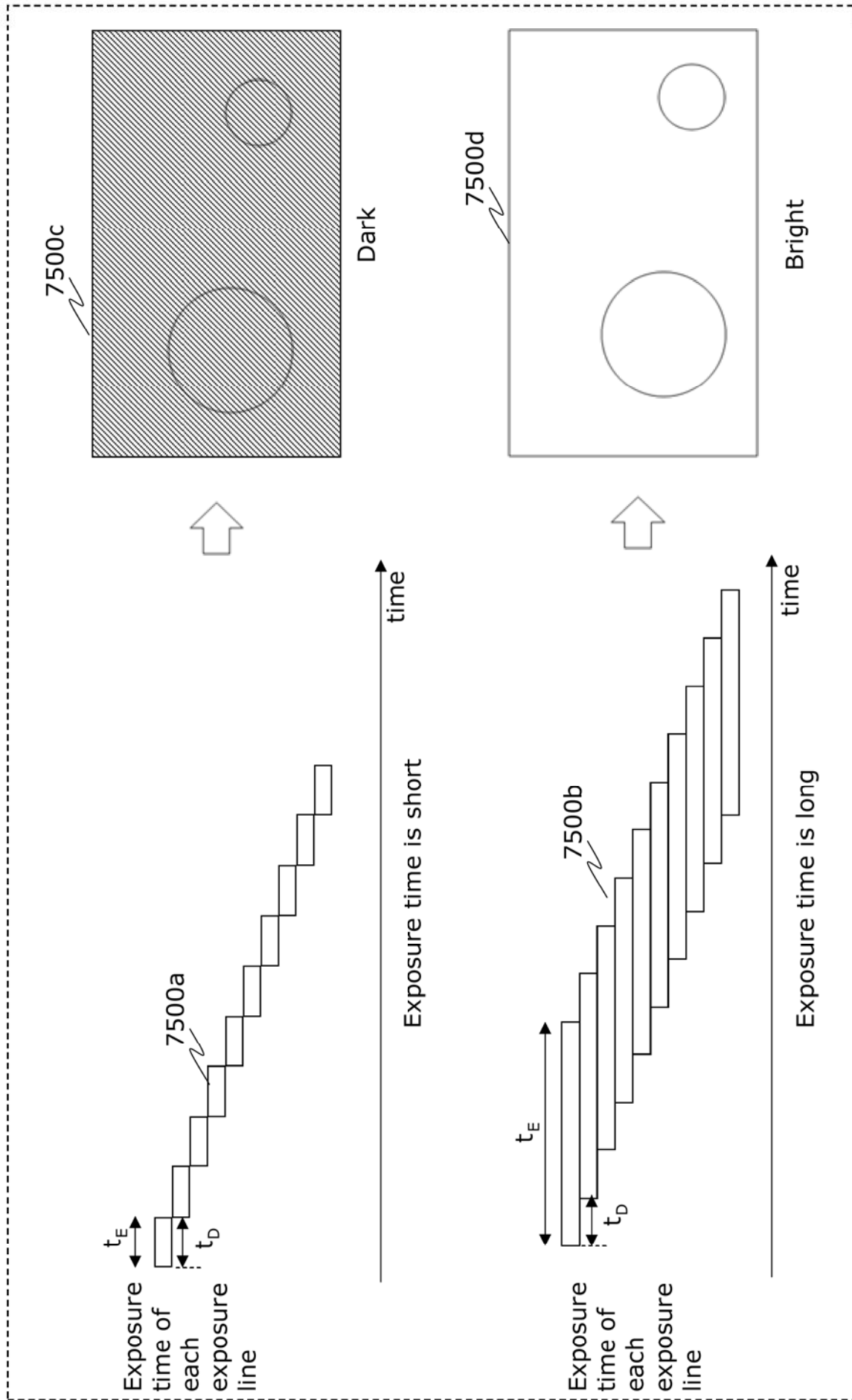


FIG. 4C

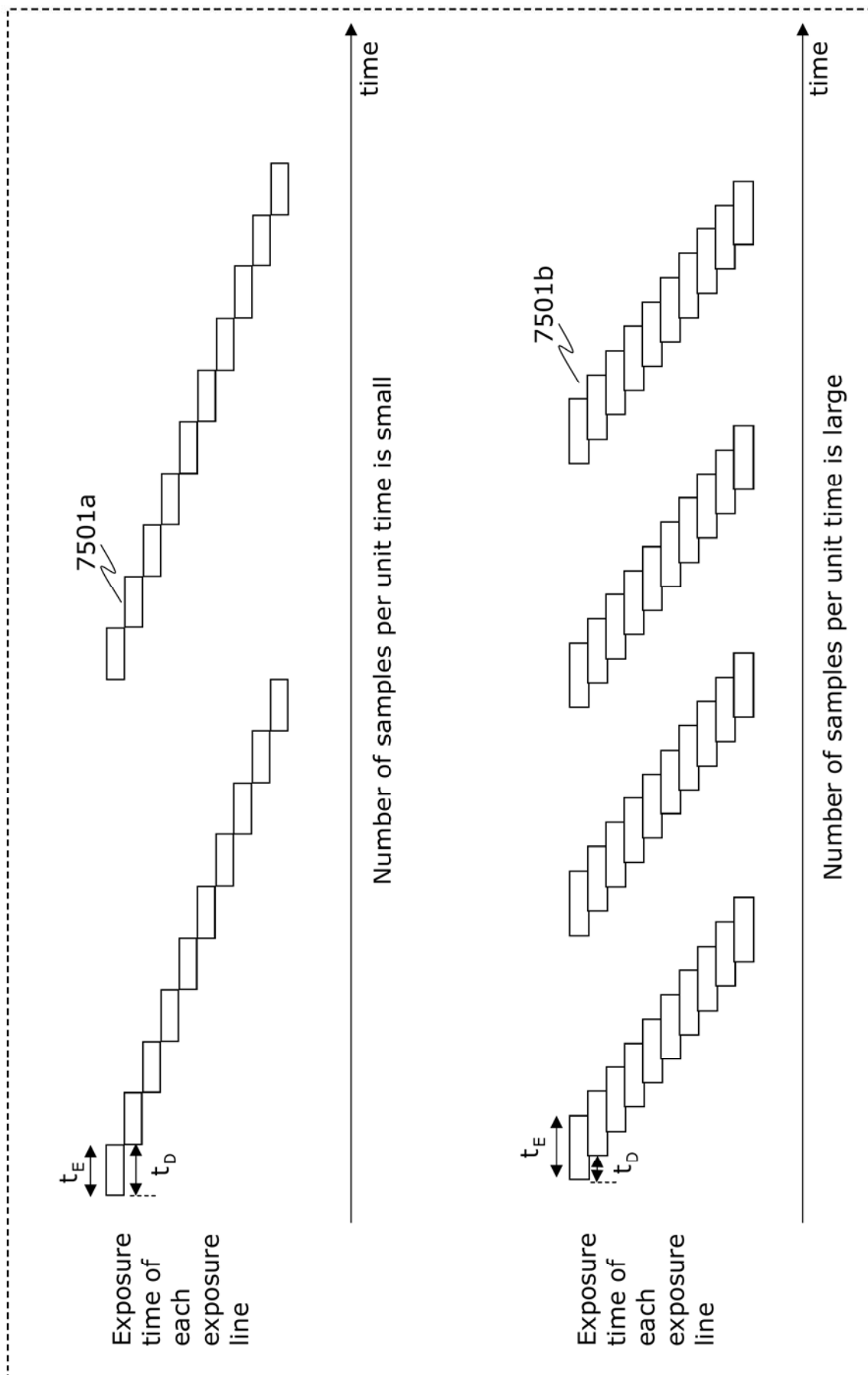


FIG. 4D

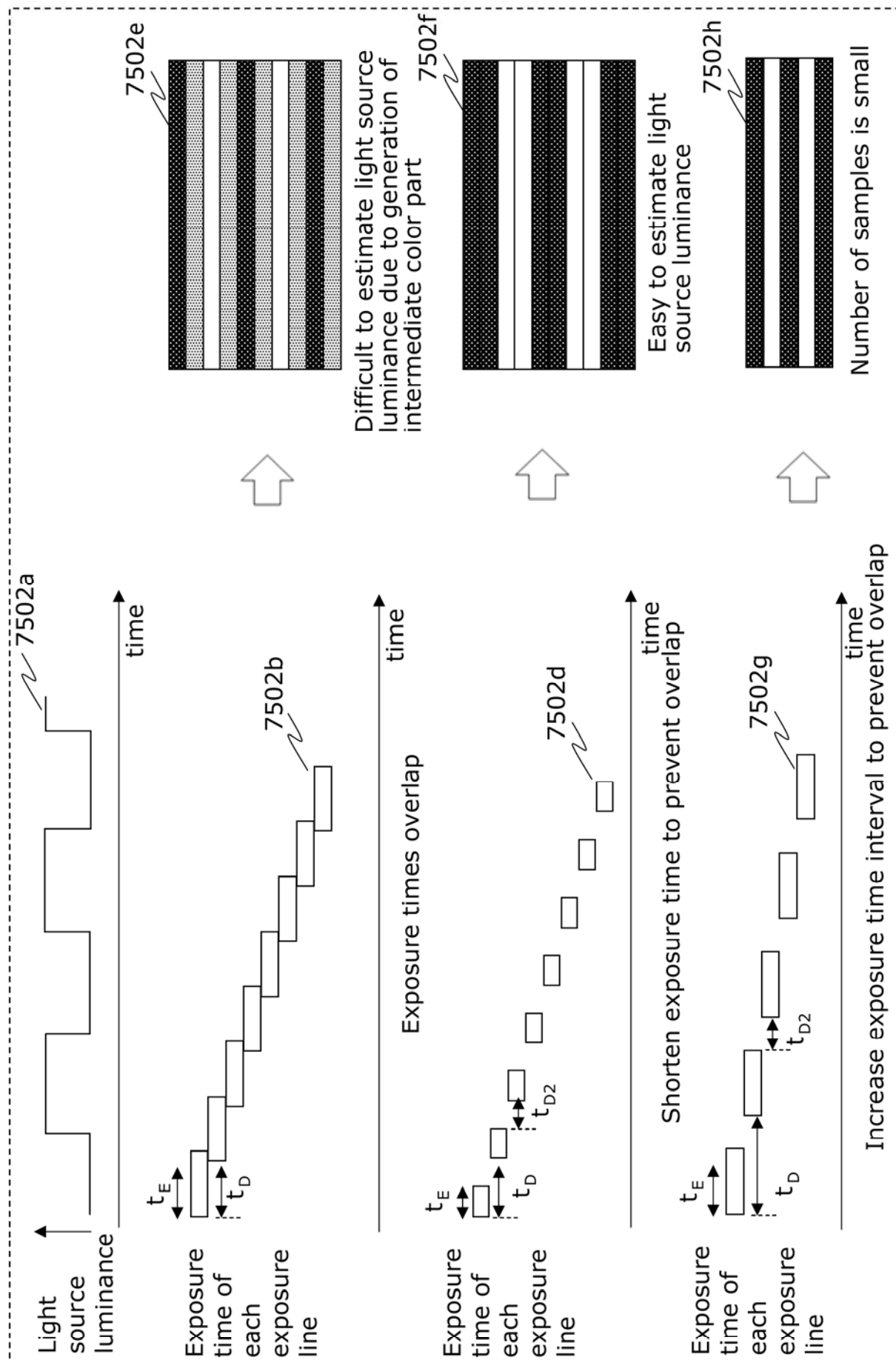


FIG. 4E

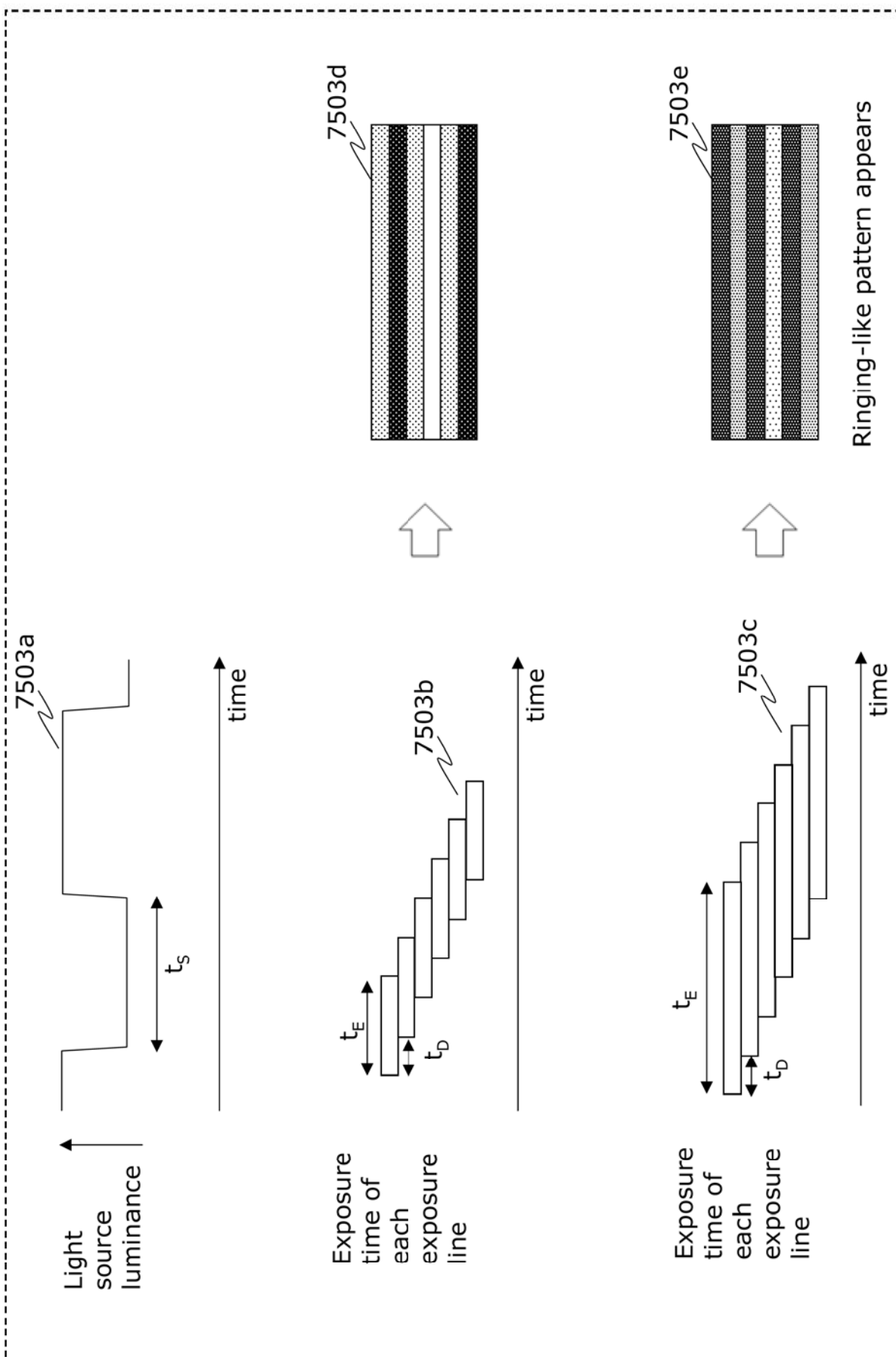


FIG. 4F

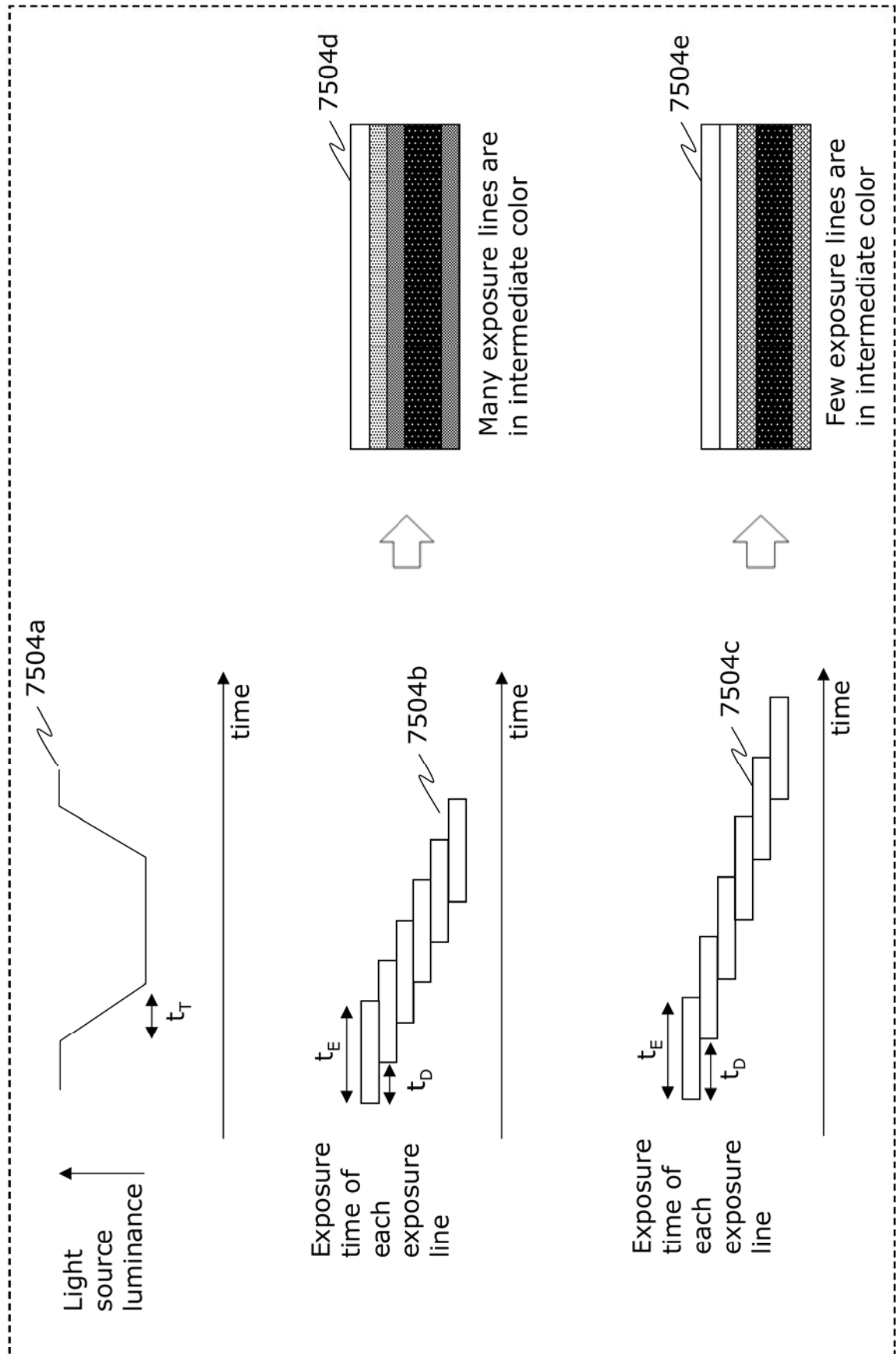


FIG. 4G

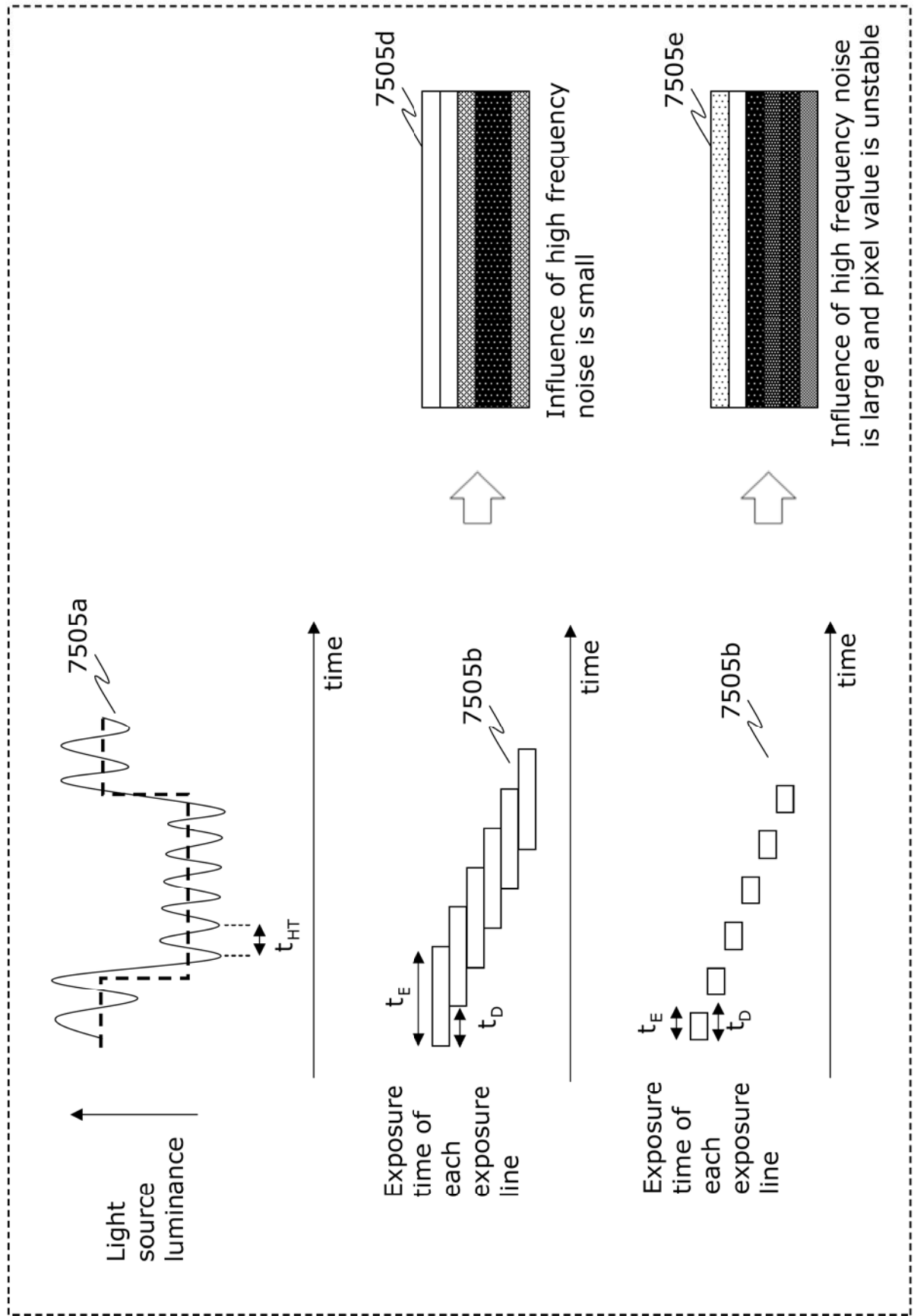


FIG. 4H

When  $t_{HT} = 20$  microseconds

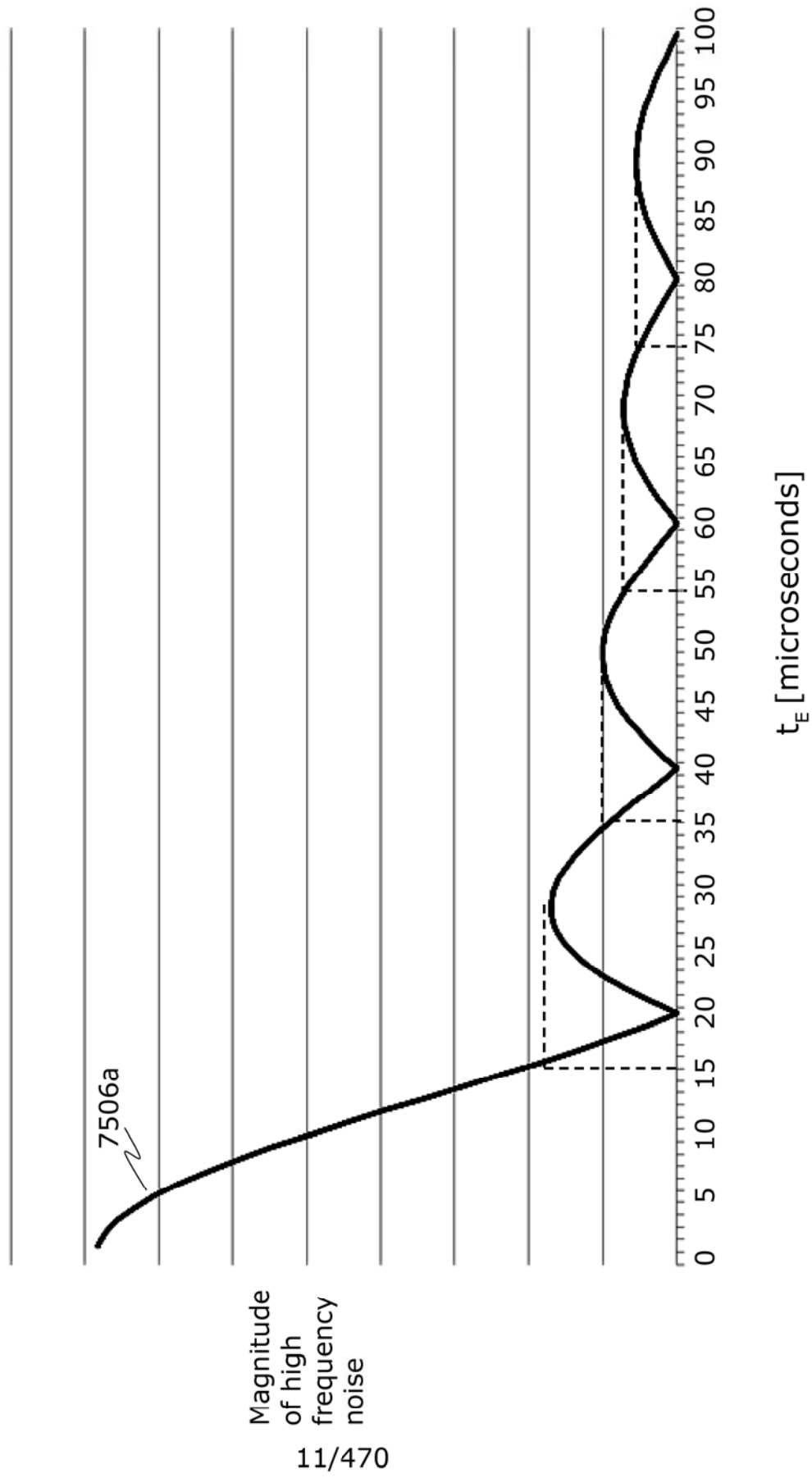


FIG. 4I

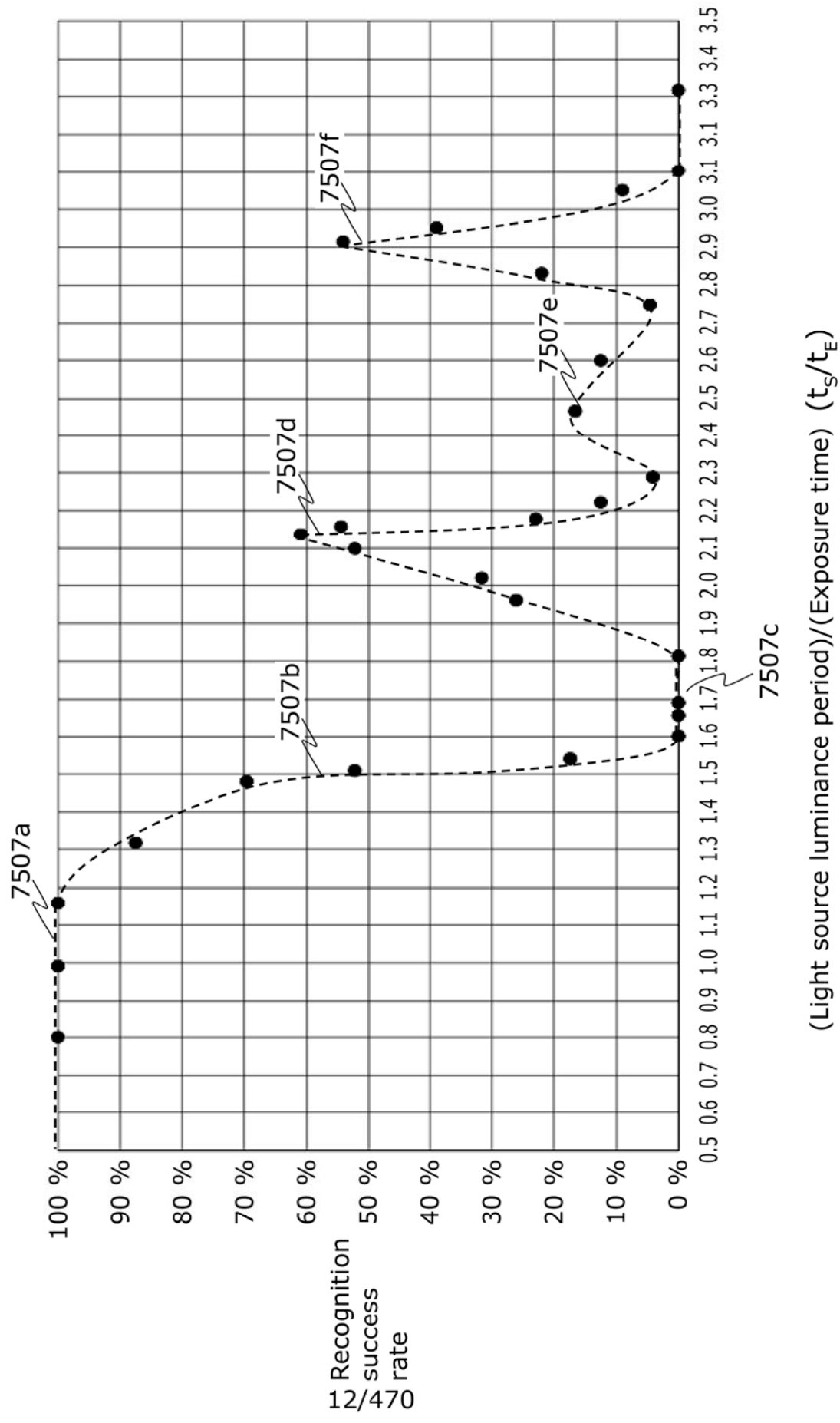




FIG. 5

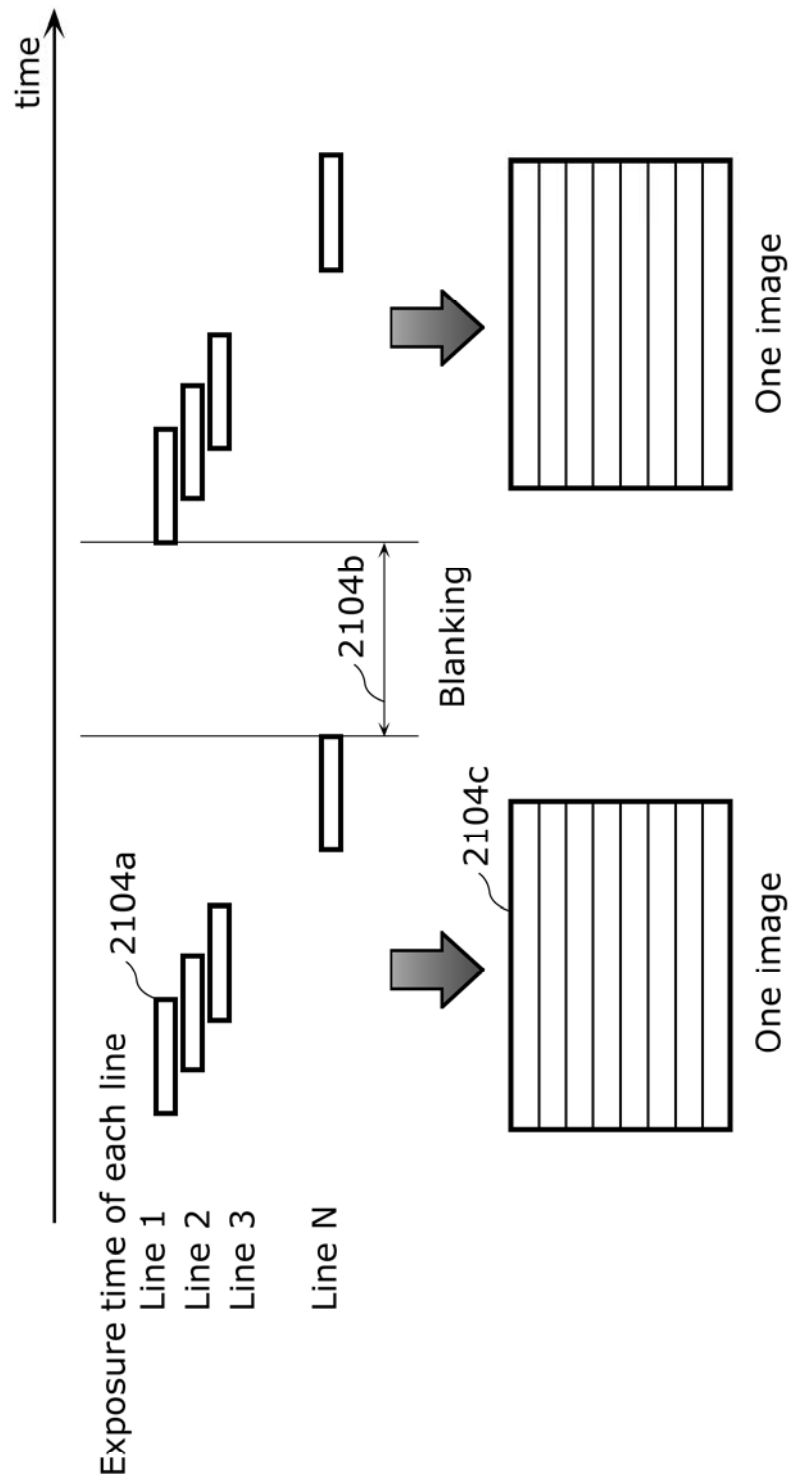


FIG. 6

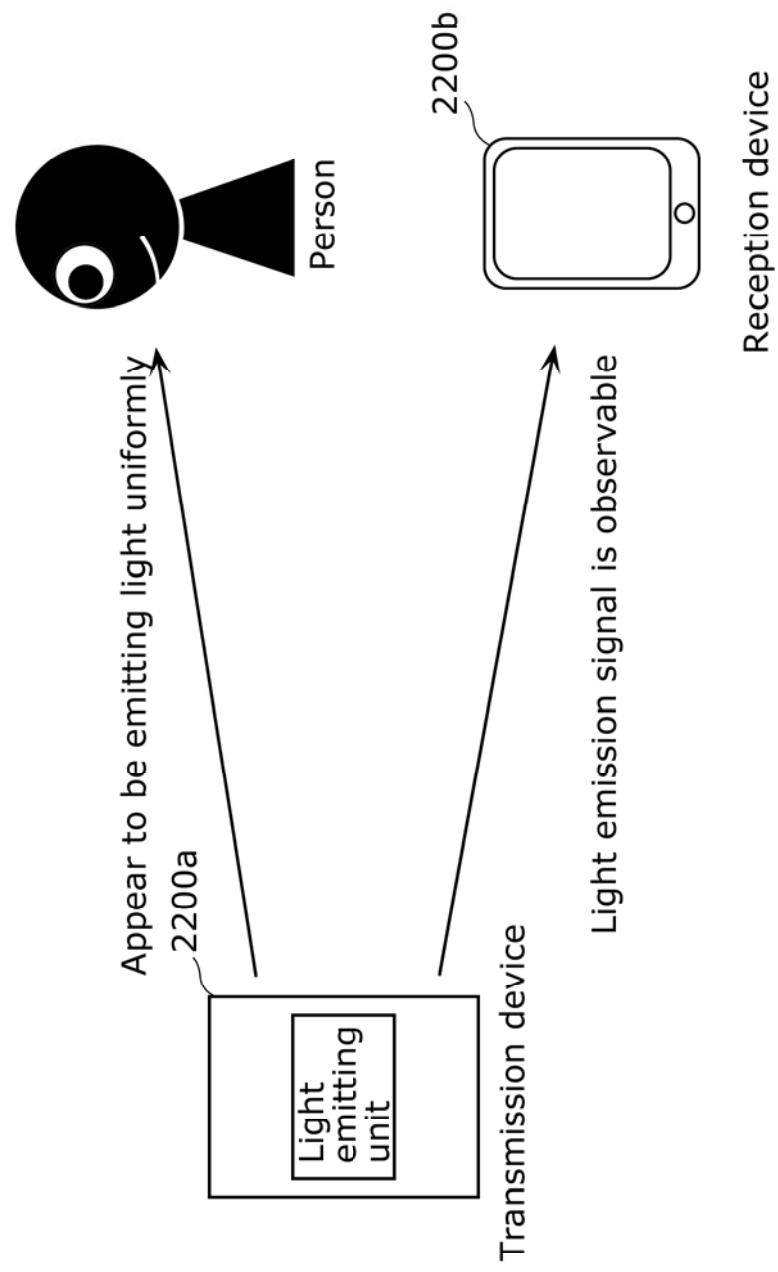


FIG. 7

2200.1a

| Transmission signal | Modulated signal |
|---------------------|------------------|
| 0                   | 01               |
| 1                   | 10               |

FIG. 8

2200.2a

| Transmission signal | Modulated signal |
|---------------------|------------------|
| 00 (0)              | 0111             |
| 01 (1)              | 1011             |
| 10 (2)              | 1101             |
| 11 (3)              | 1110             |

FIG. 9

2200.3a

| Transmission signal | Modulated signal |
|---------------------|------------------|
| 000 (0)             | 01111111         |
| 001 (1)             | 10111111         |
| 010 (2)             | 11011111         |
| 011 (3)             | 11101111         |
| 100 (4)             | 11110111         |
| 101 (5)             | 11111011         |
| 110 (6)             | 11111101         |
| 111 (7)             | 11111110         |

FIG. 10

2200.4a

| Transmission signal | Modulated signal |
|---------------------|------------------|
| 00 (0)              | 1000             |
| 01 (1)              | 0100             |
| 10 (2)              | 0010             |
| 11 (3)              | 0001             |

FIG. 11

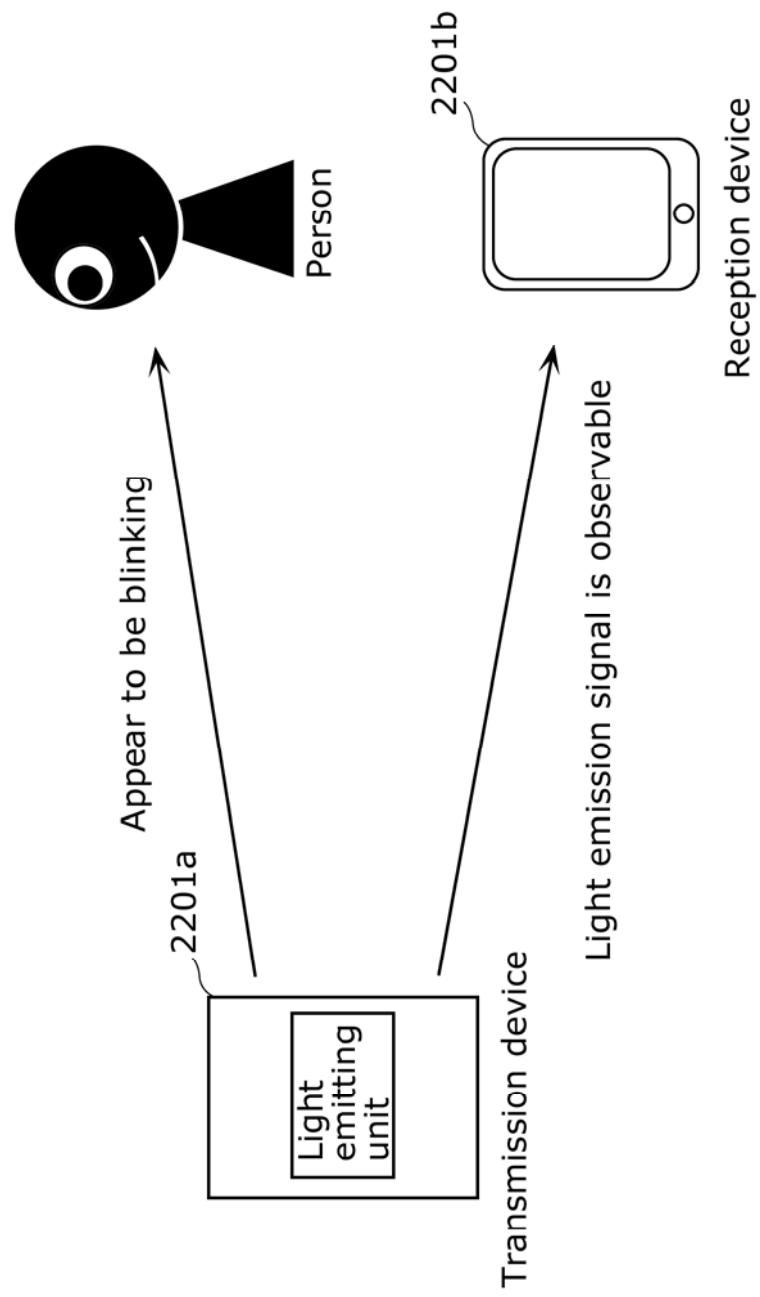


FIG. 12

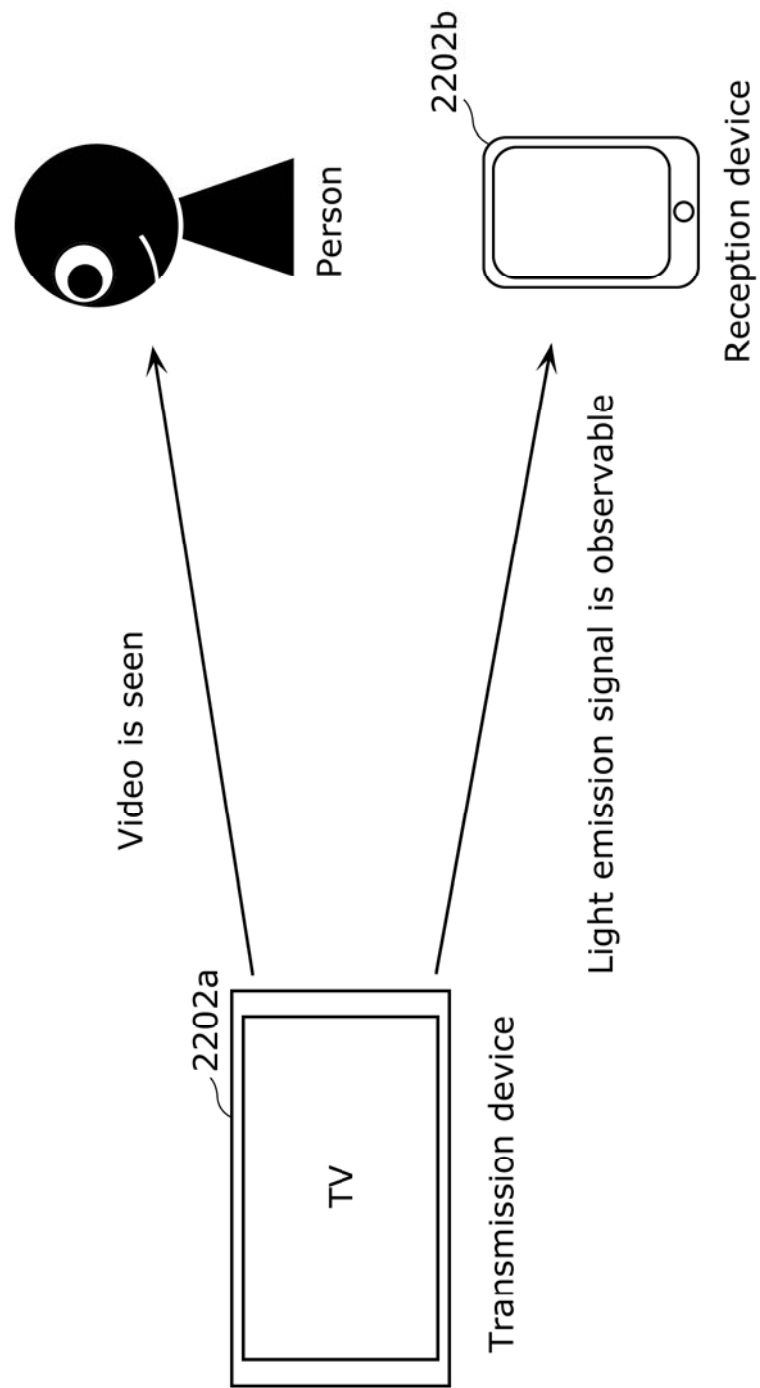




FIG. 13

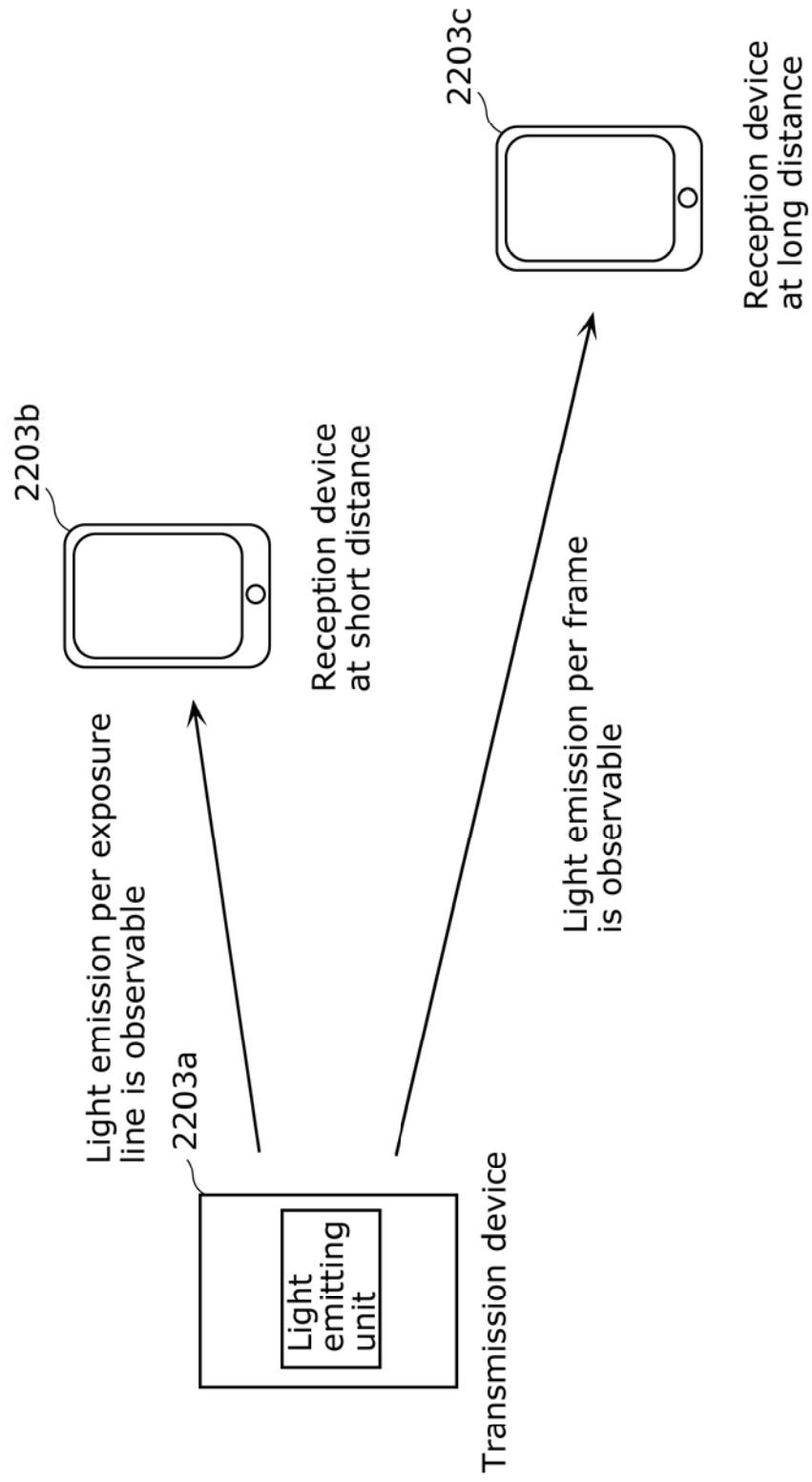


FIG. 14

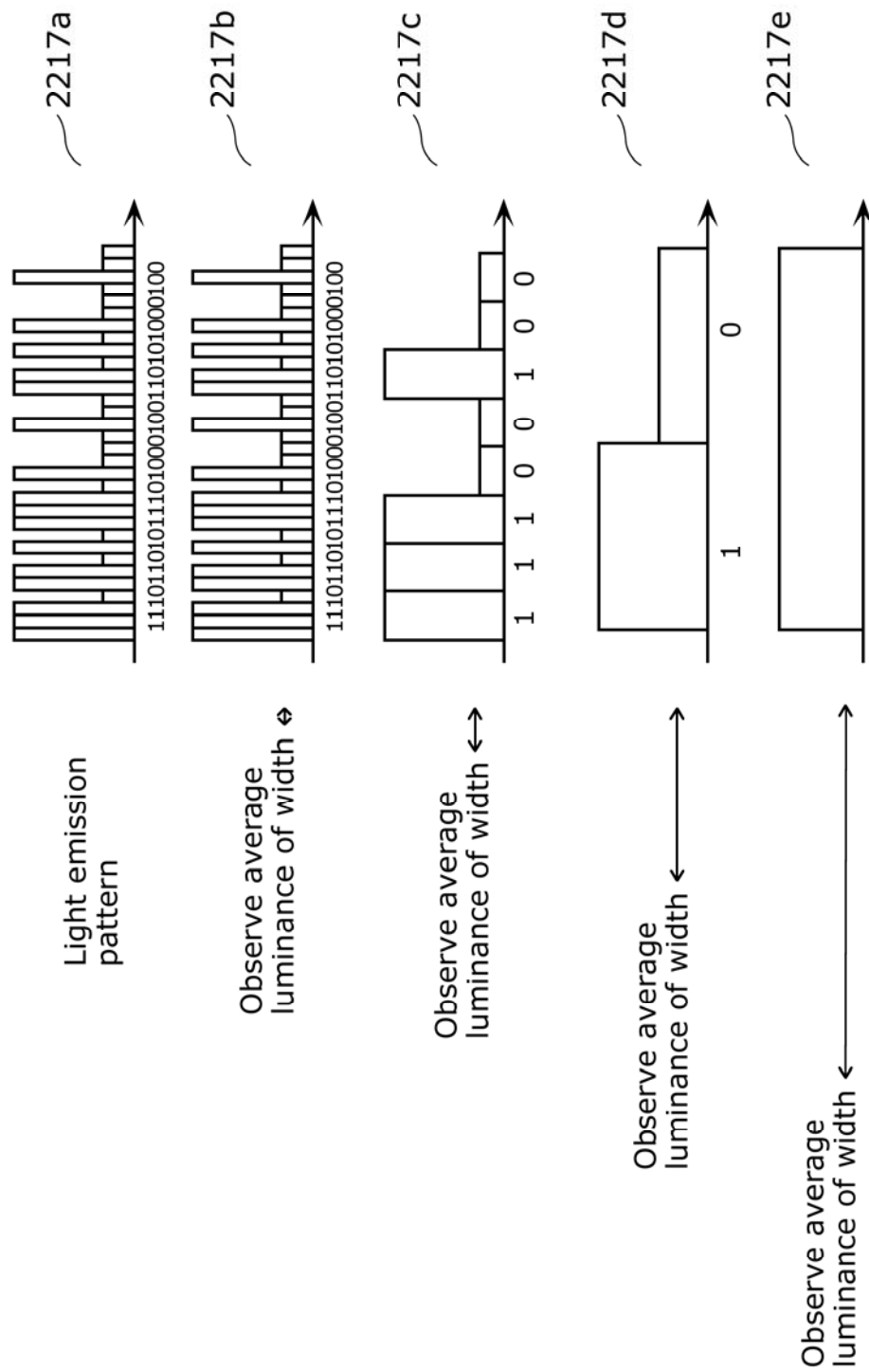


FIG. 15

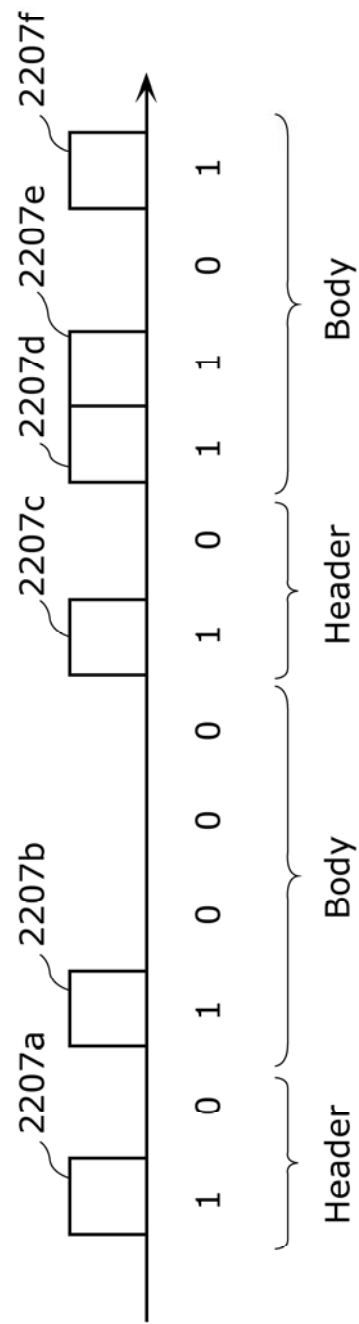


FIG. 16

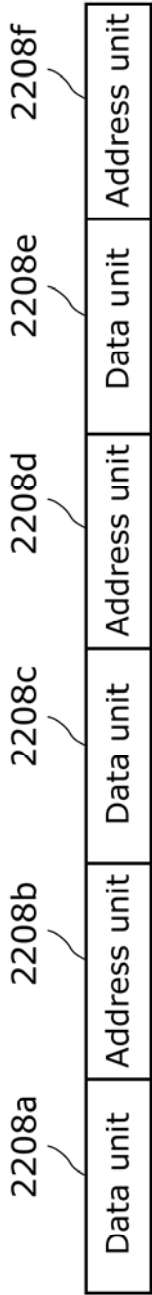


FIG. 17

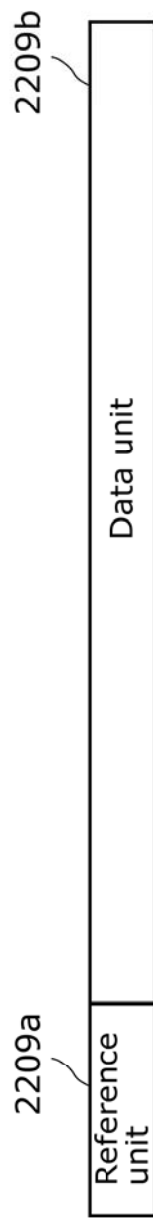


FIG. 18

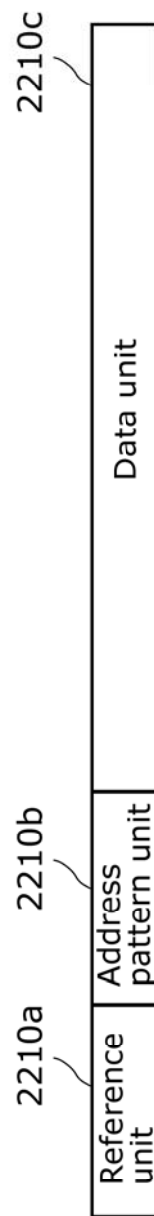


FIG. 19

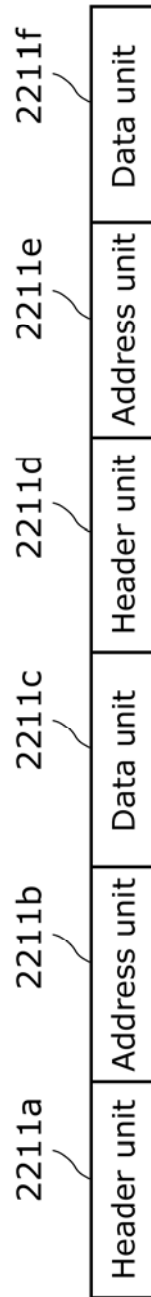


FIG. 20

| Transmission information | Priority   |
|--------------------------|------------|
| Information 1            | 3 (High)   |
| Information 2            | 2 (Normal) |
| Information 3            | 1 (Low)    |

Transmission order 1

|               |               |               |               |               |               |               |               |               |               |               |               |               |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Information 1 | Information 1 | Information 1 | Information 1 | Information 1 | Information 1 | Information 2 | Information 2 | Information 2 | Information 2 | Information 3 | Information 3 | Information 3 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|

Transmission order 2

|               |               |               |               |               |               |               |               |               |               |               |               |               |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Information 2 | Information 1 | Information 3 | Information 1 | Information 2 | Information 1 | Information 2 | Information 1 | Information 3 | Information 1 | Information 2 | Information 1 | Information 2 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|

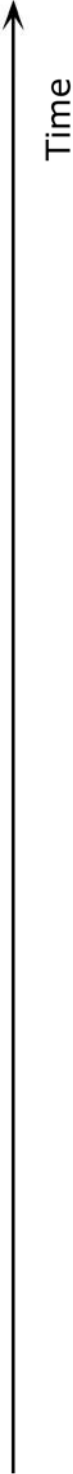




FIG. 21

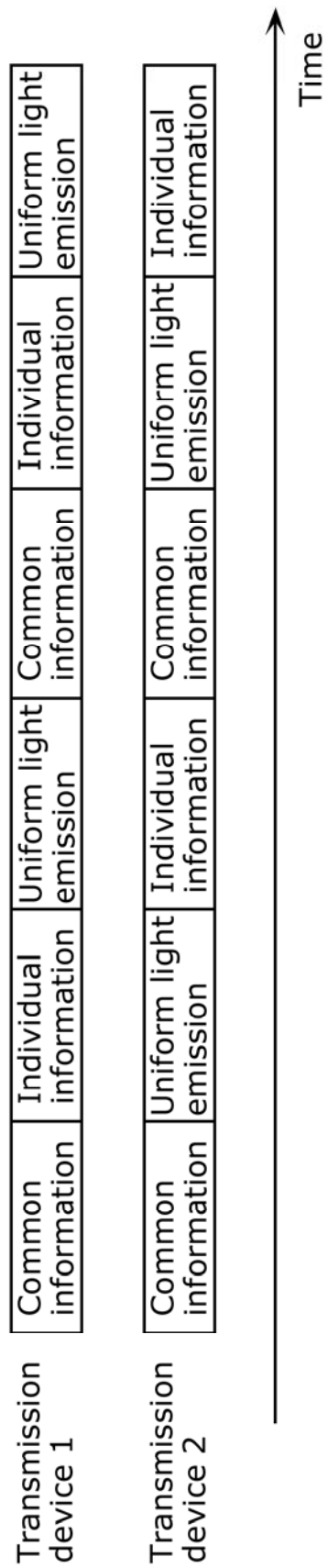


FIG. 22

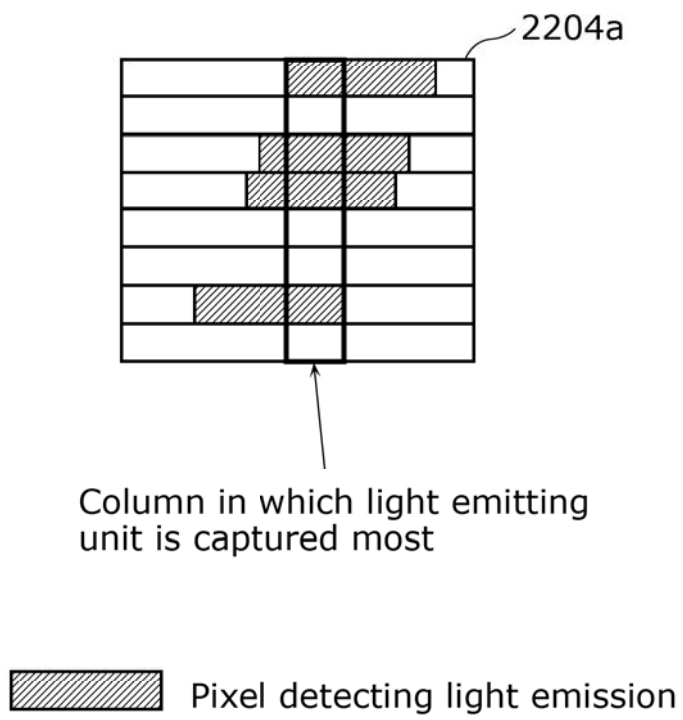
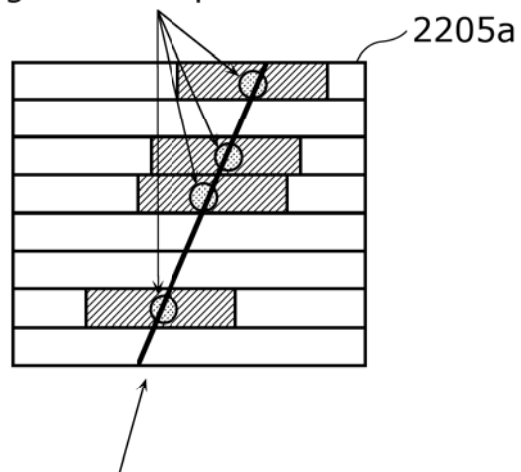


FIG. 23

Midpoint of captured part of light  
emitting unit in exposure line



Line approximating midpoints

 Pixel detecting light emission

FIG. 24

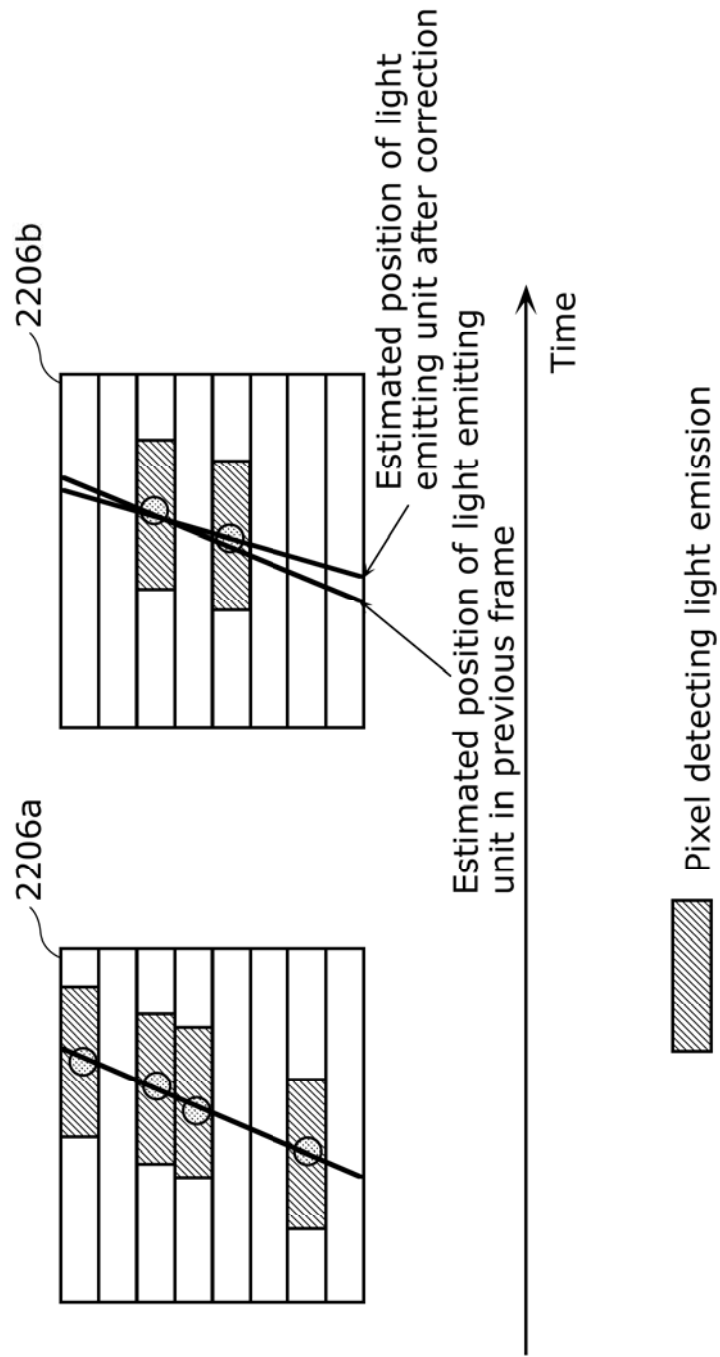


FIG. 25

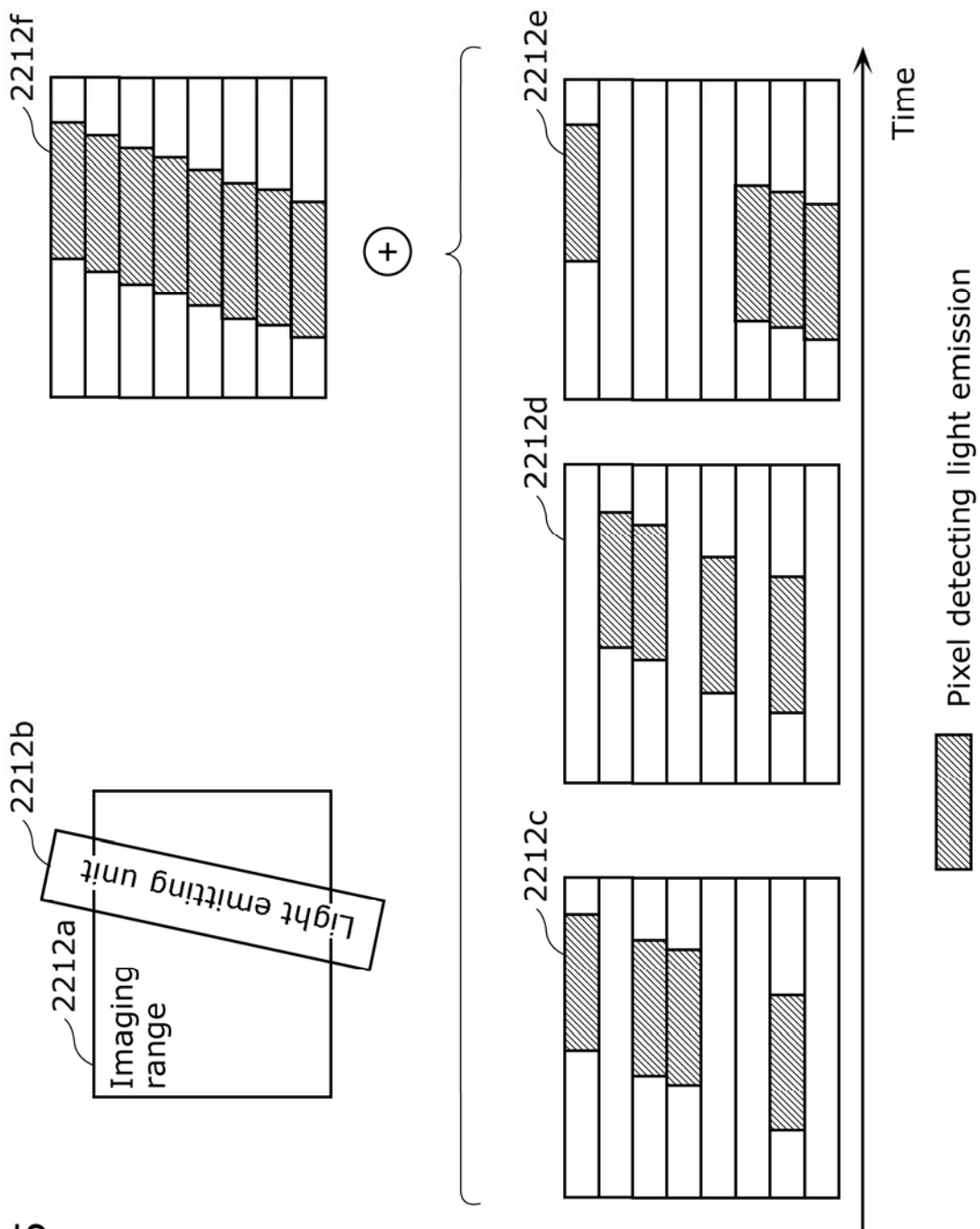


FIG. 26

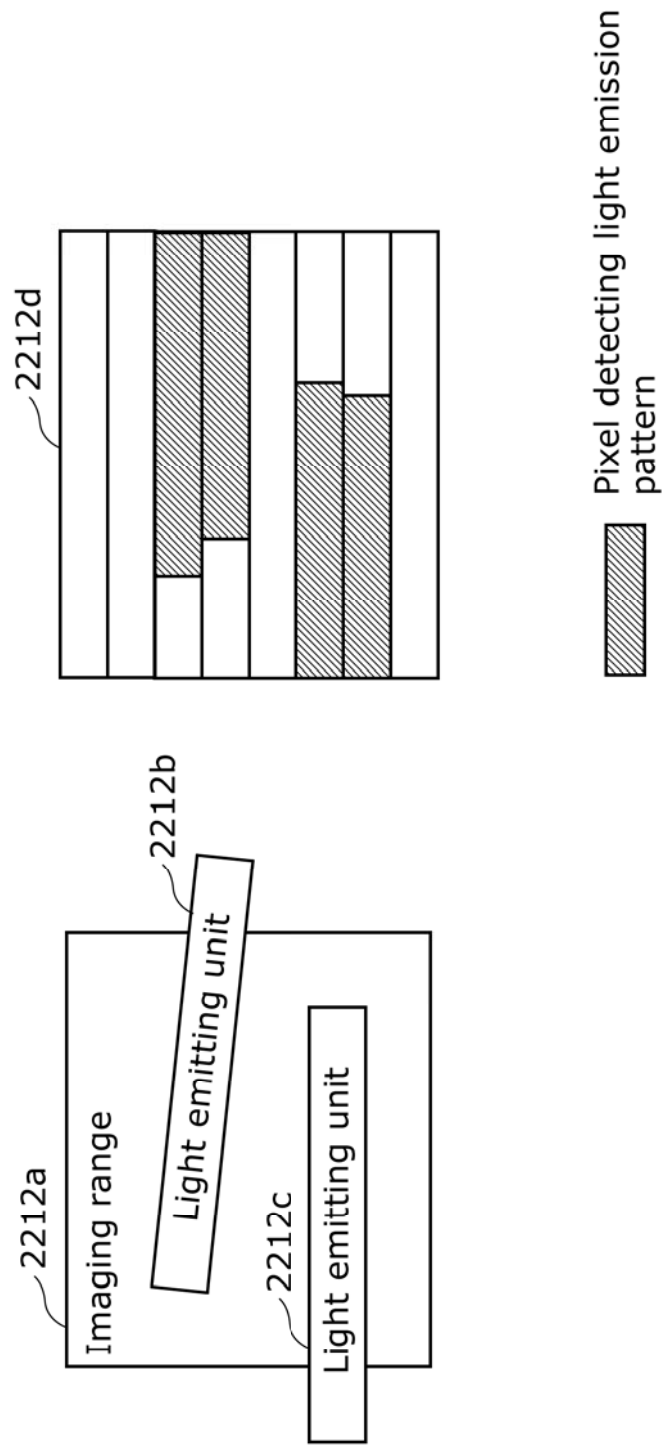


FIG. 27

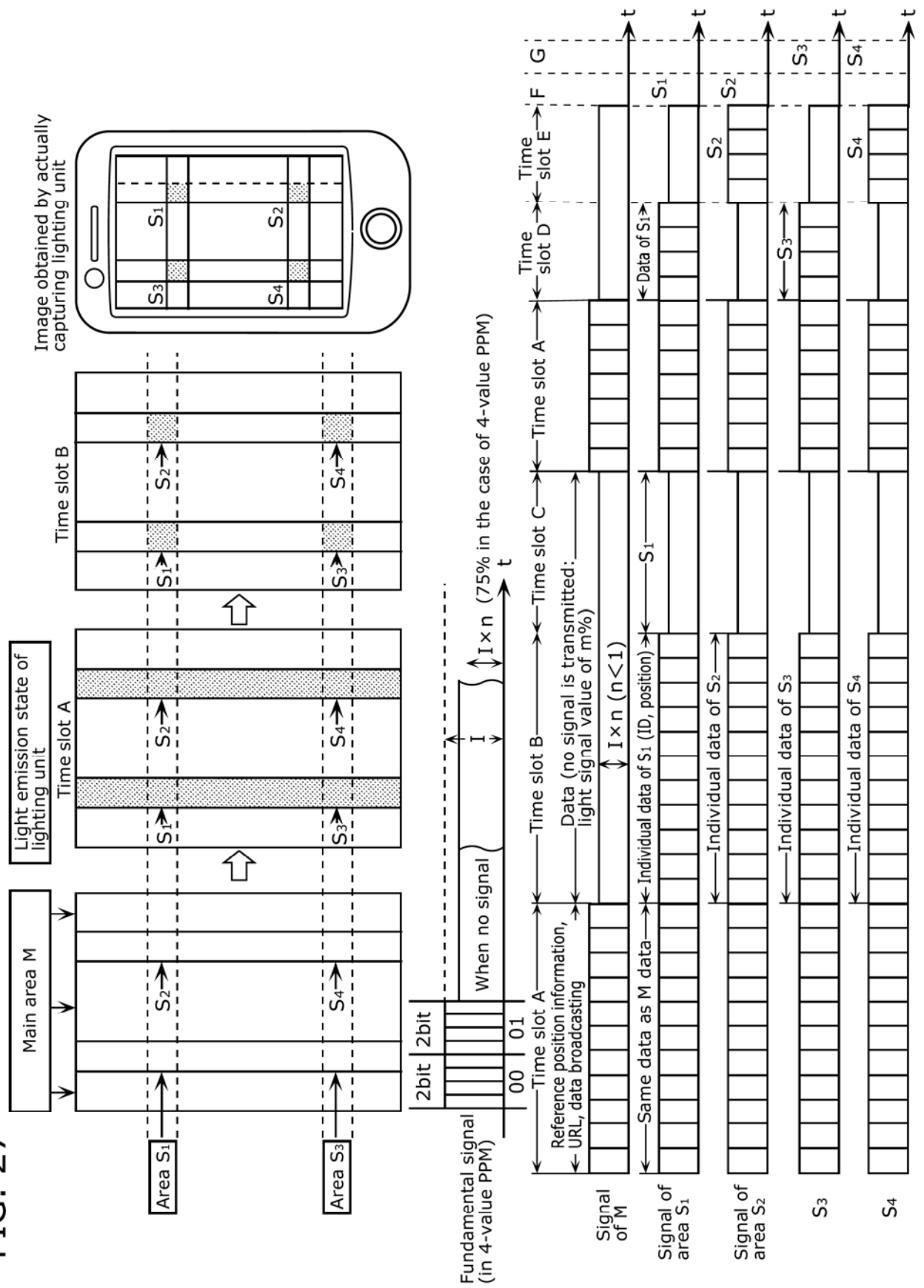


FIG. 28

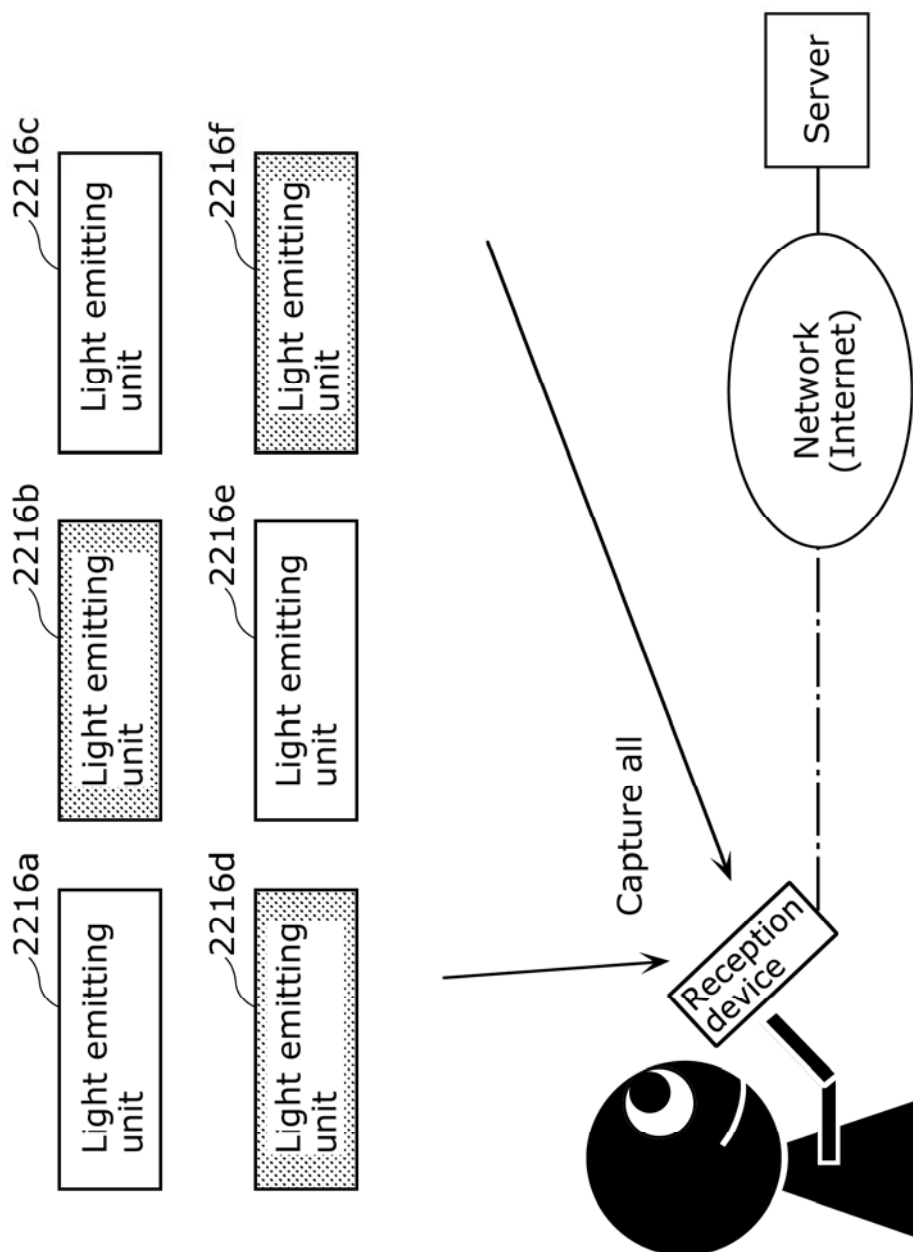
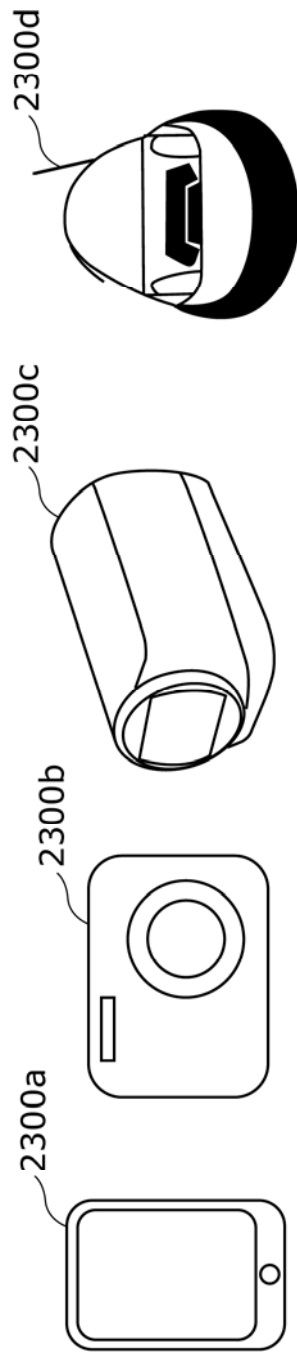
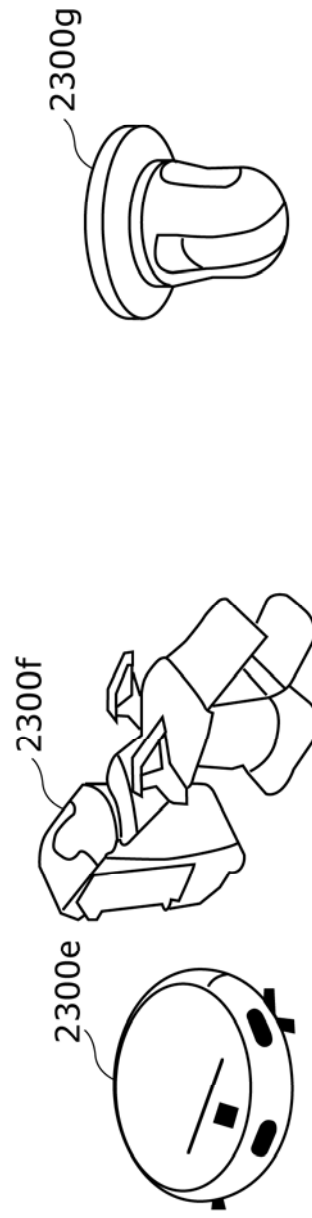




FIG. 29



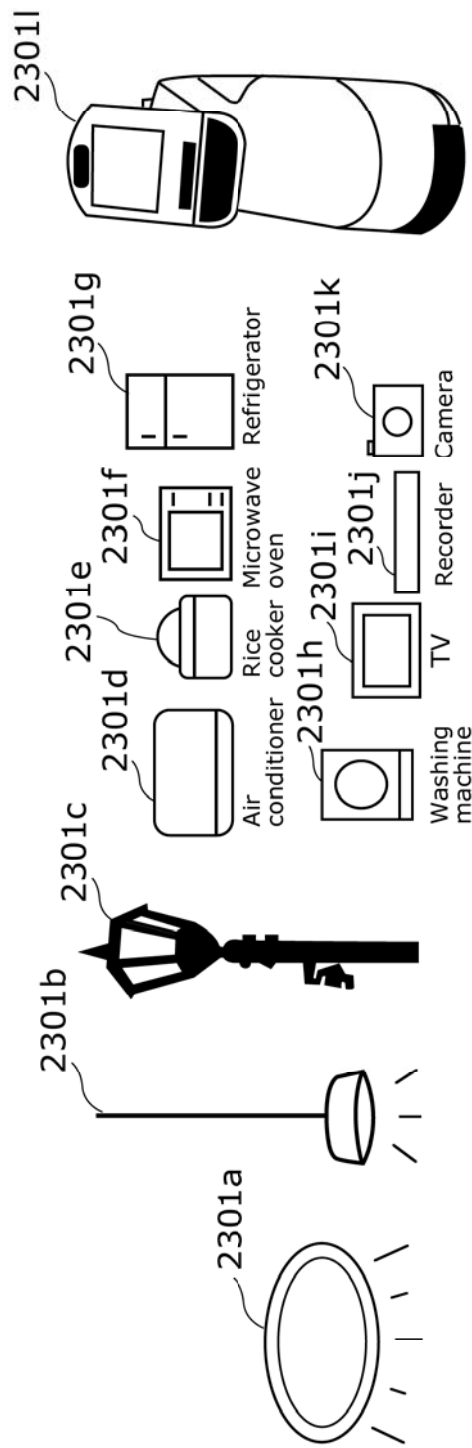
Mobile phone    Digital still camera    Digital video camera    Head-mounted display



Robot (cleaning, nursing care, industrial, etc.)    Surveillance camera    Surveillance camera

Example of reception device

FIG. 30



Example of transmission device

FIG. 31

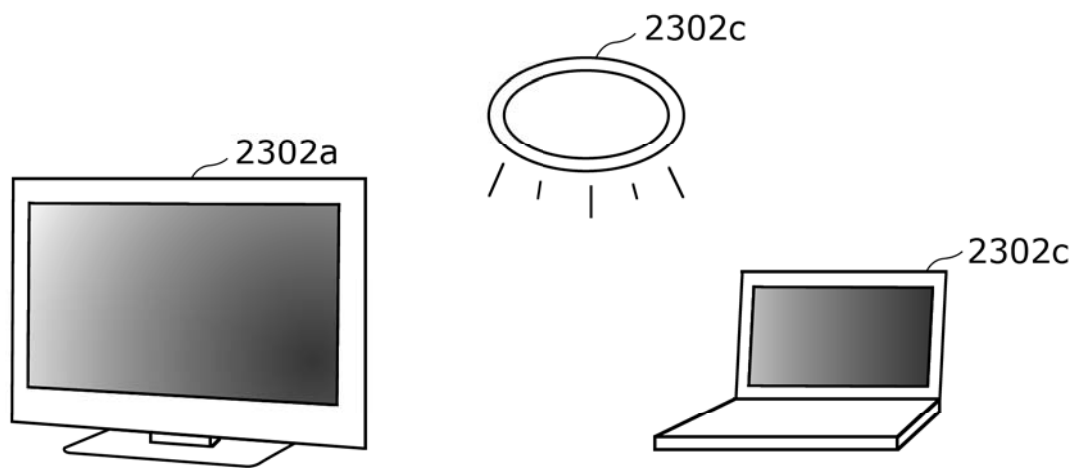


FIG. 32

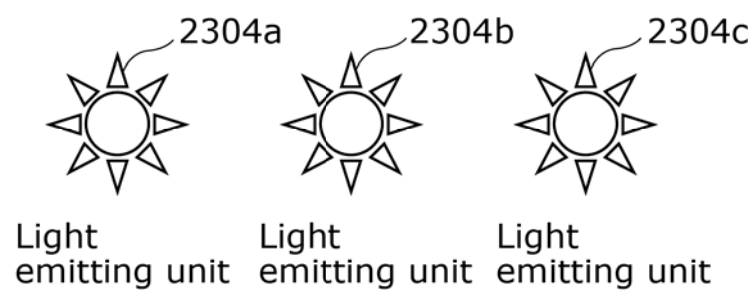


FIG. 33

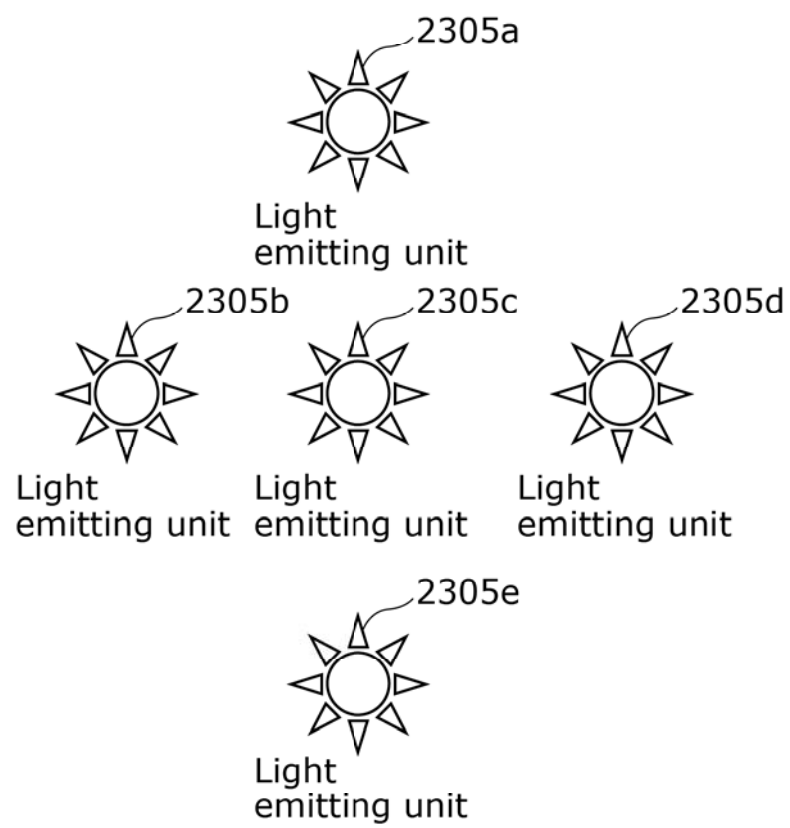


FIG. 34

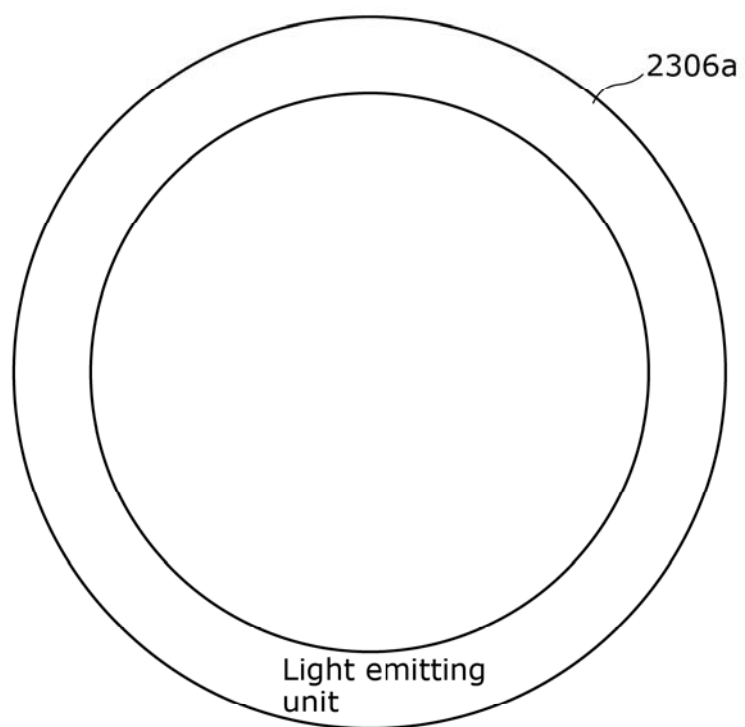


FIG. 35

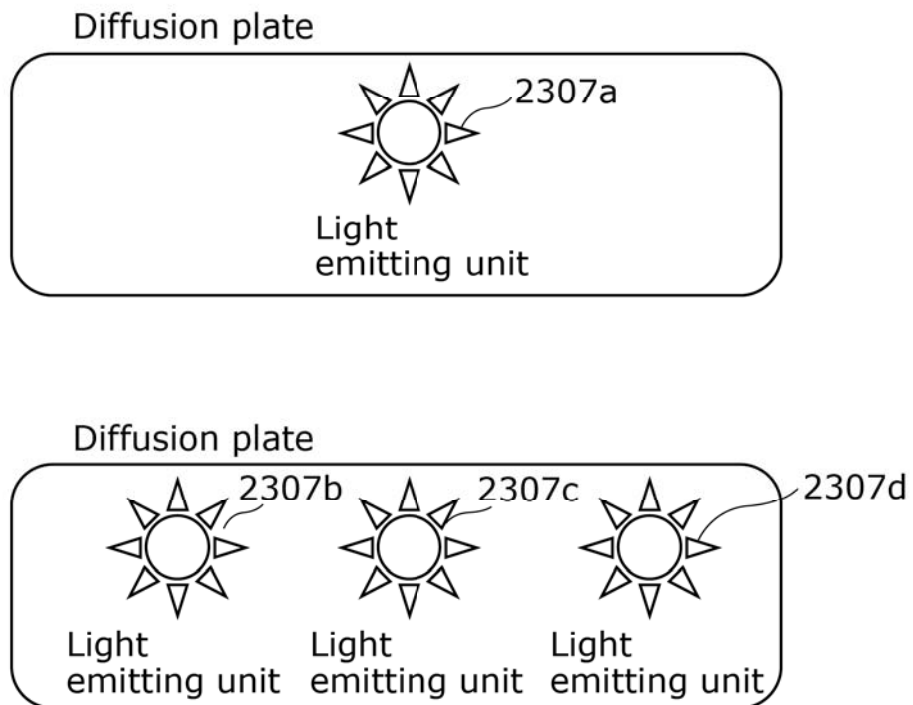




FIG. 36



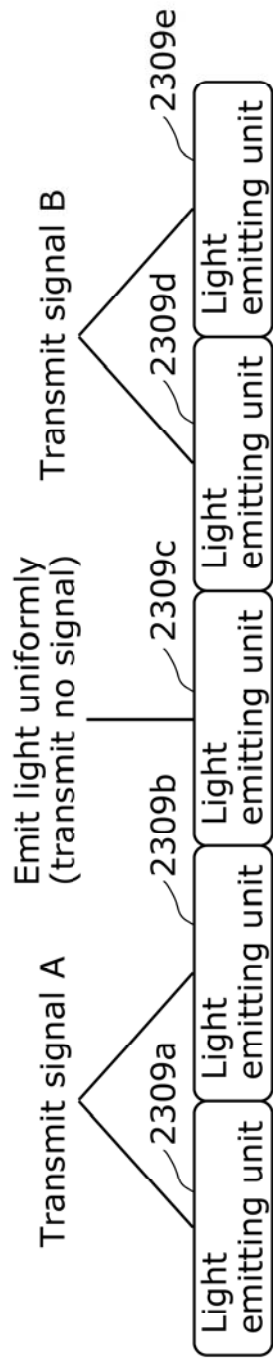


FIG. 37

FIG. 38

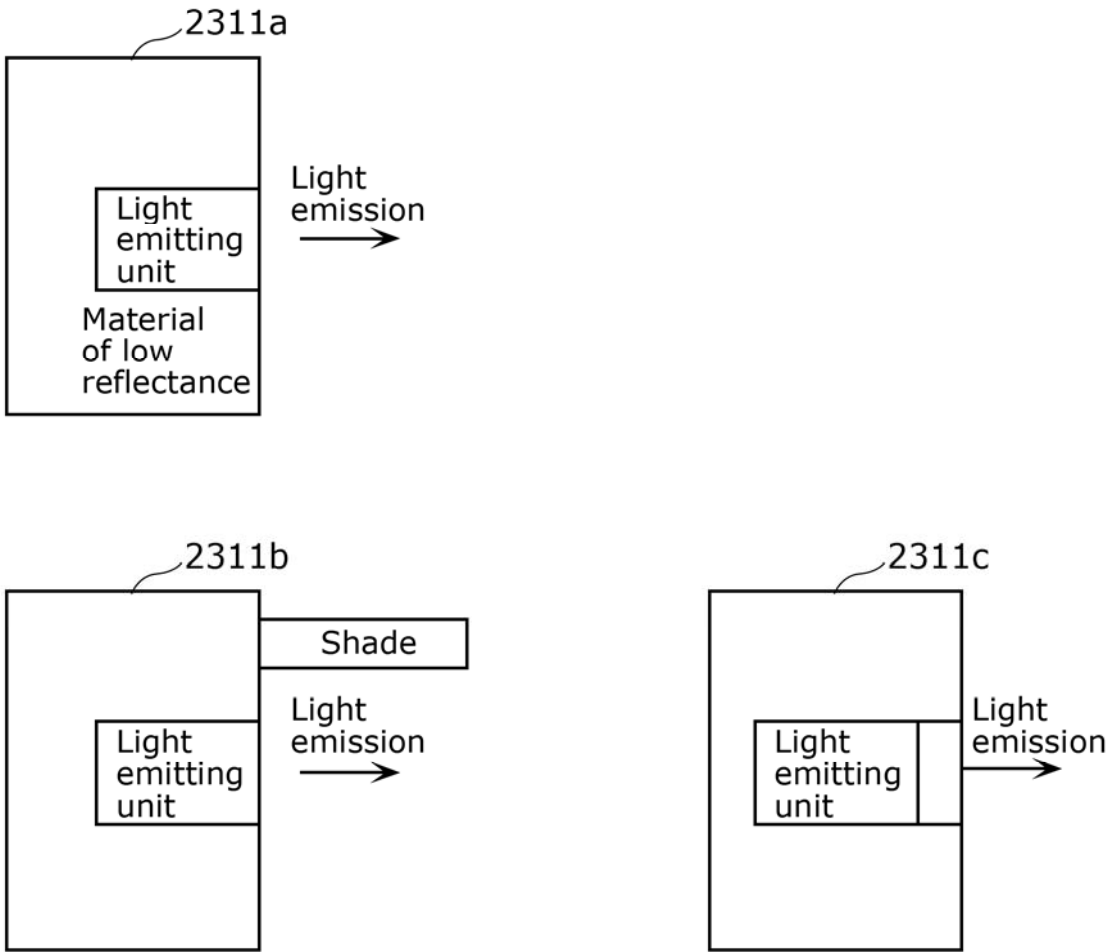


FIG. 39

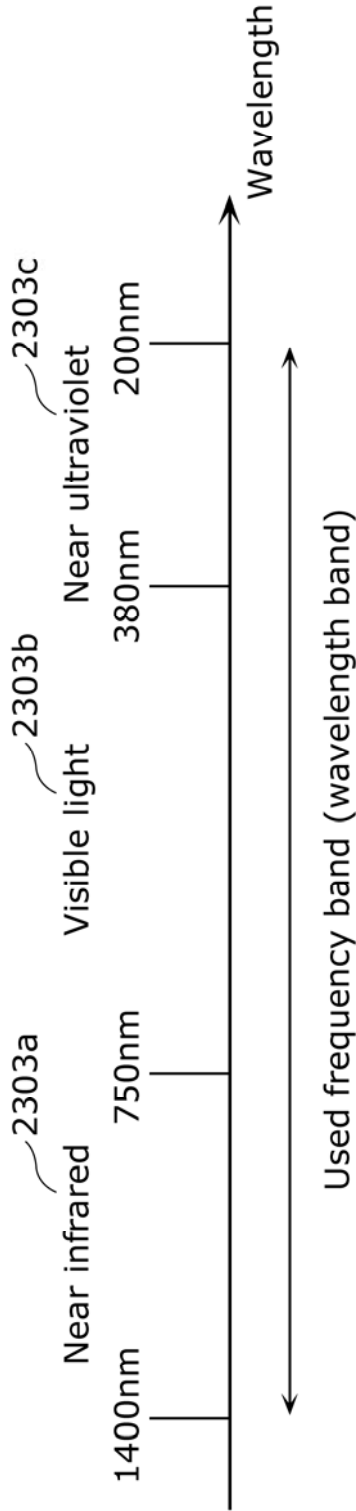


FIG. 40

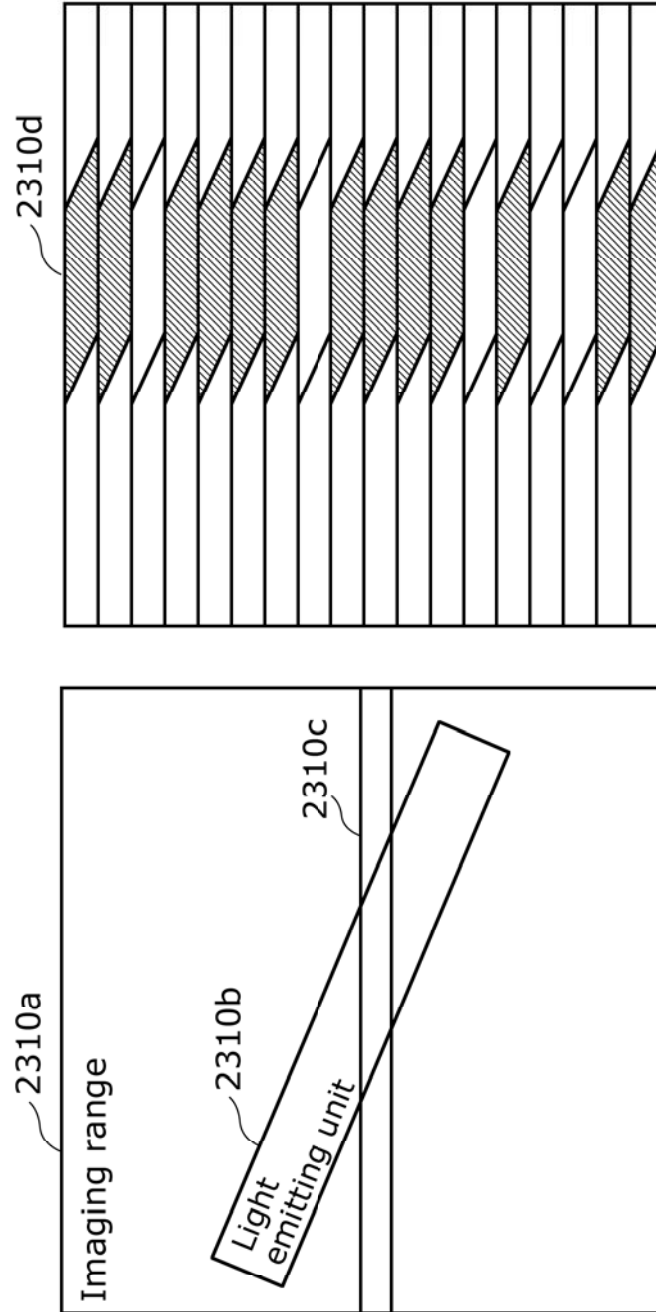


FIG. 41

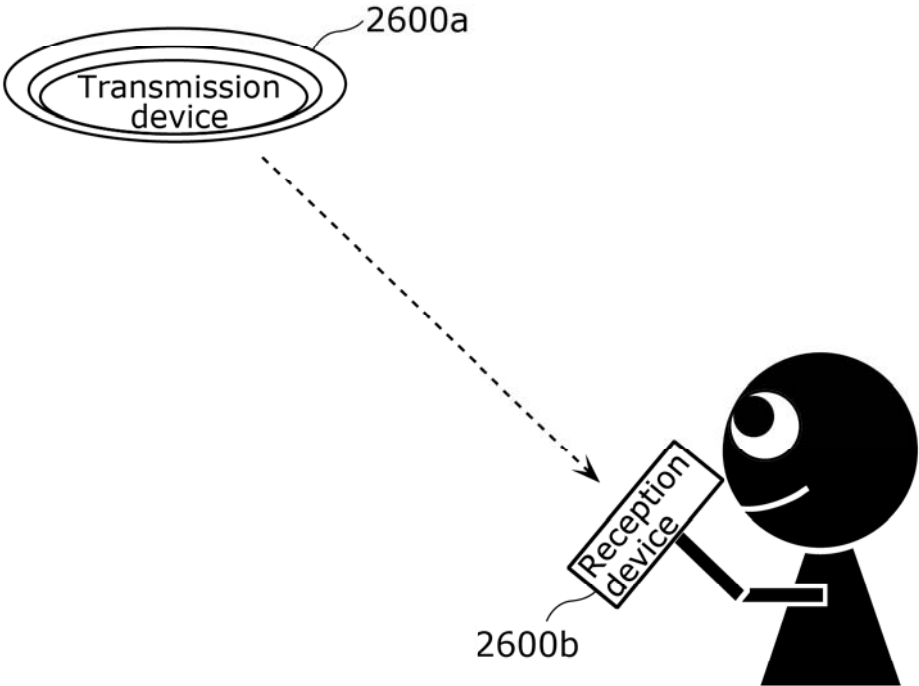


FIG. 42

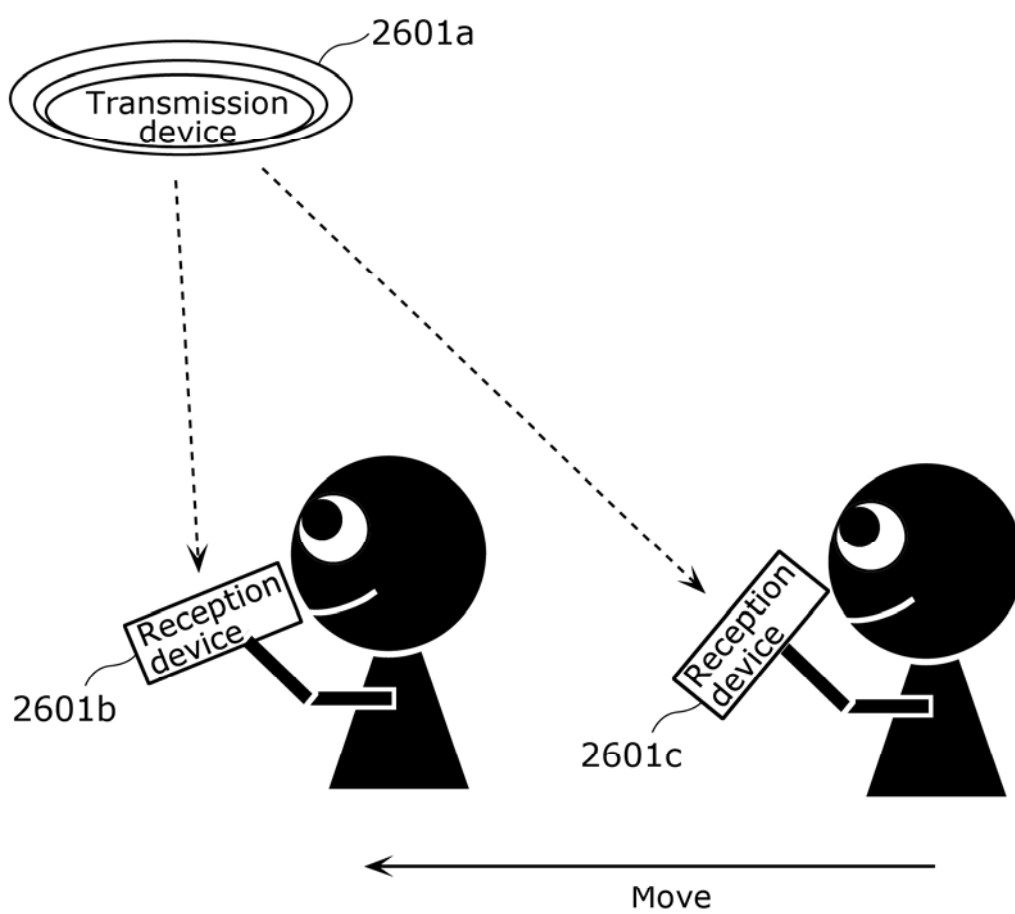


FIG. 43

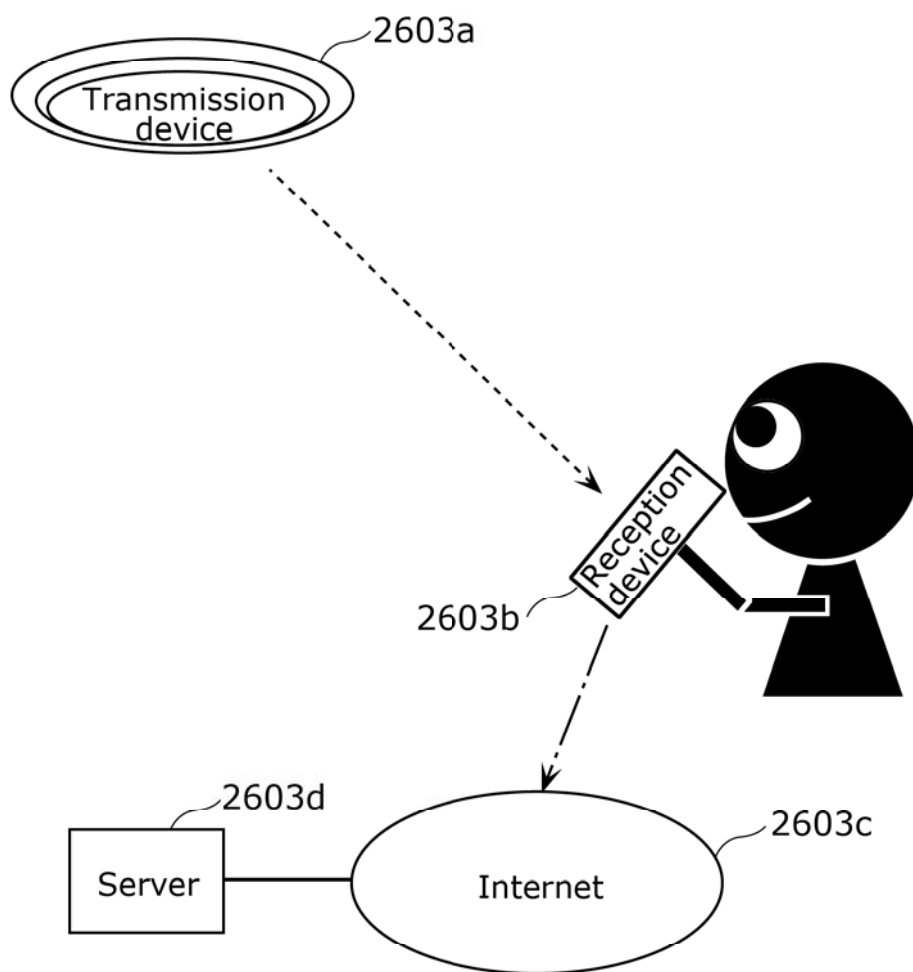


FIG. 44

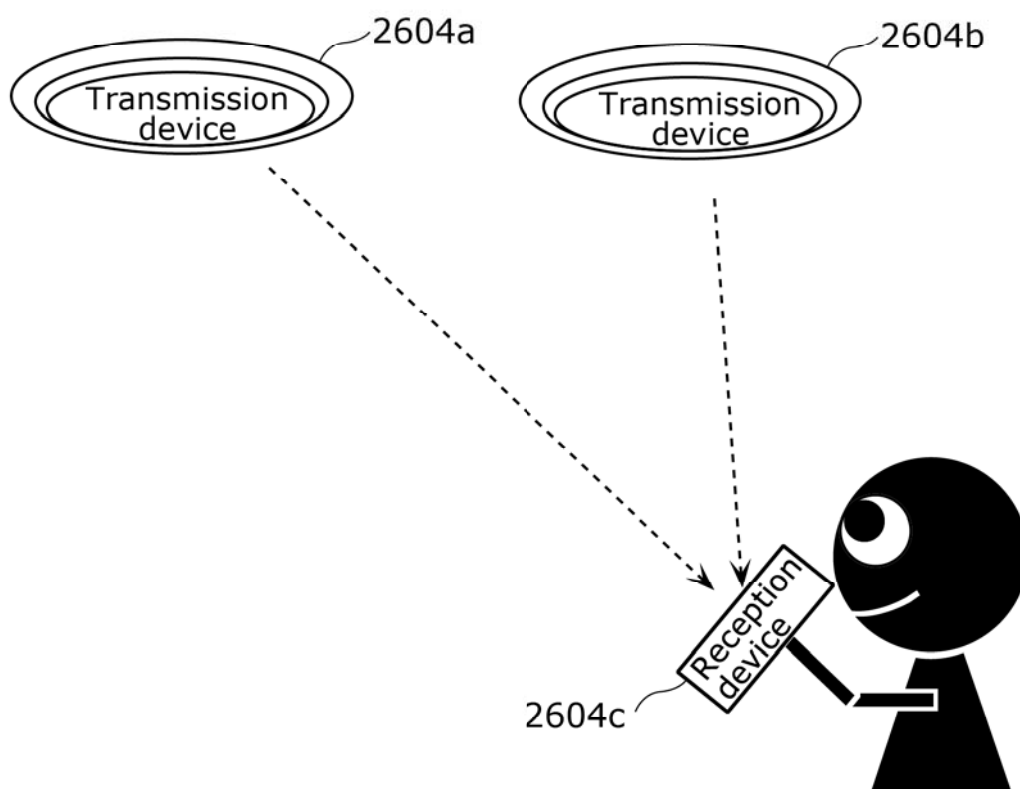




FIG. 45

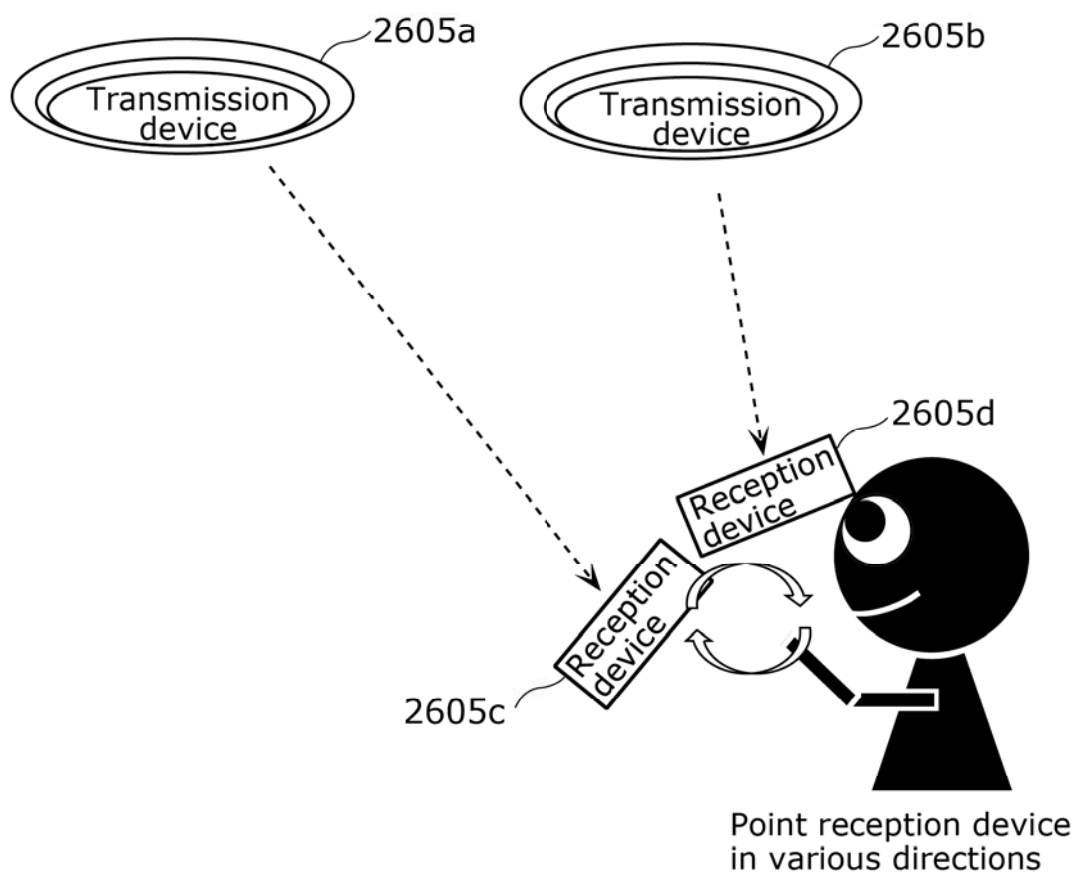


FIG. 46

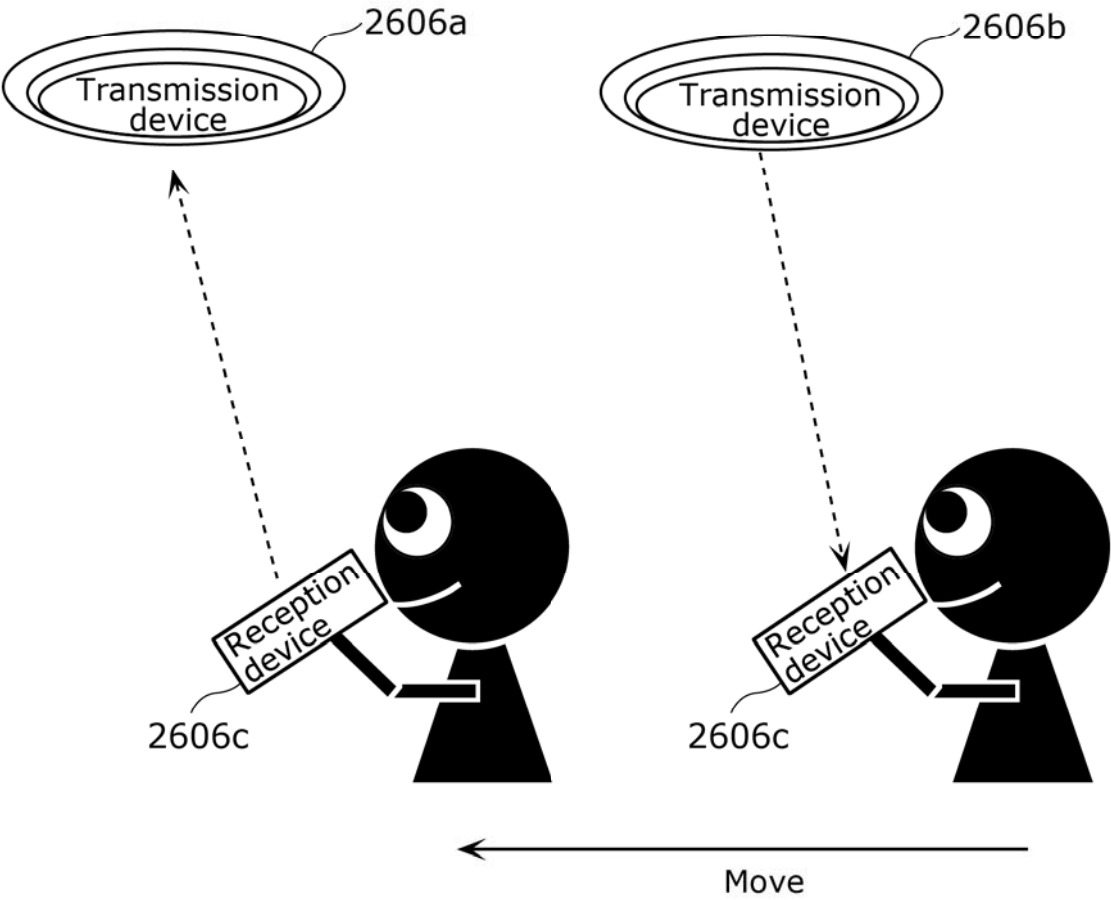


FIG. 47

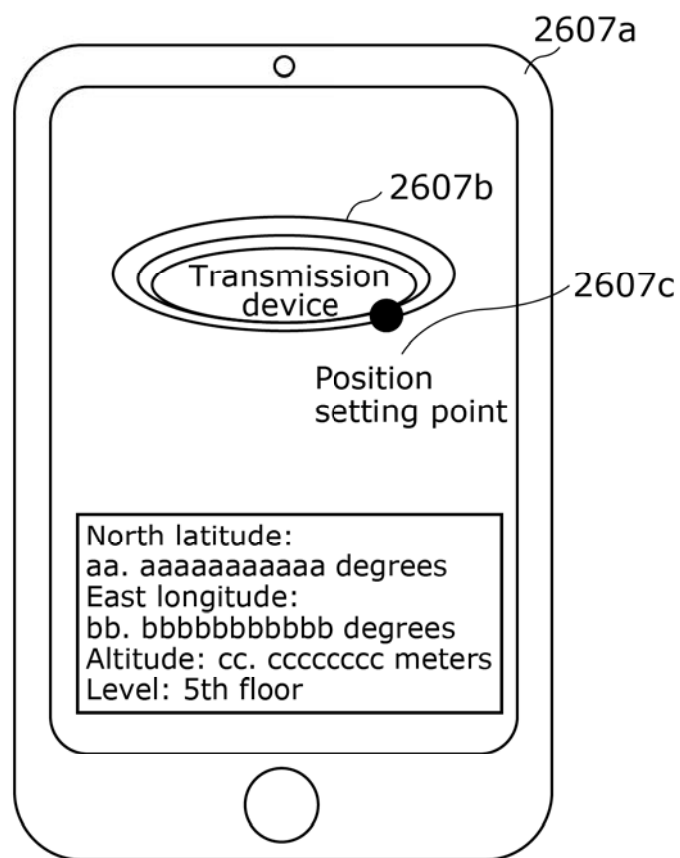


FIG. 48

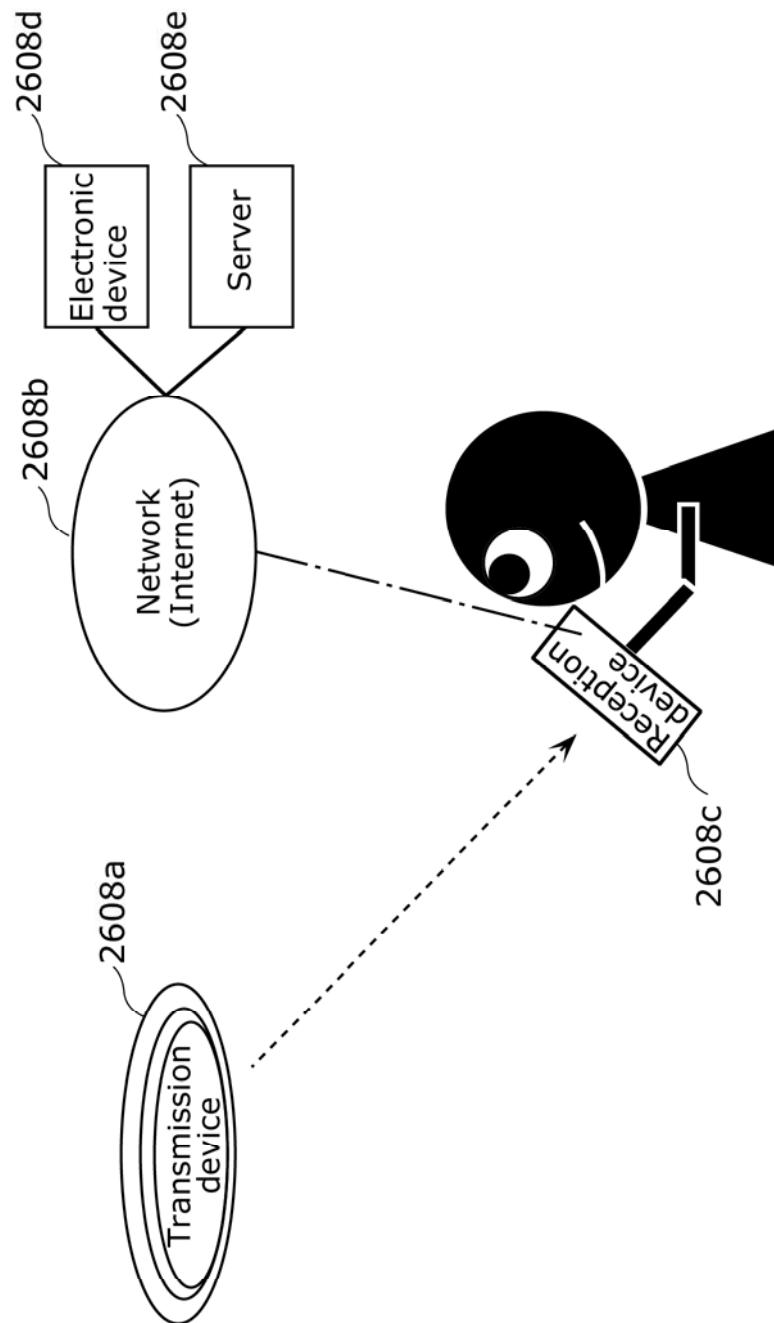


FIG. 49

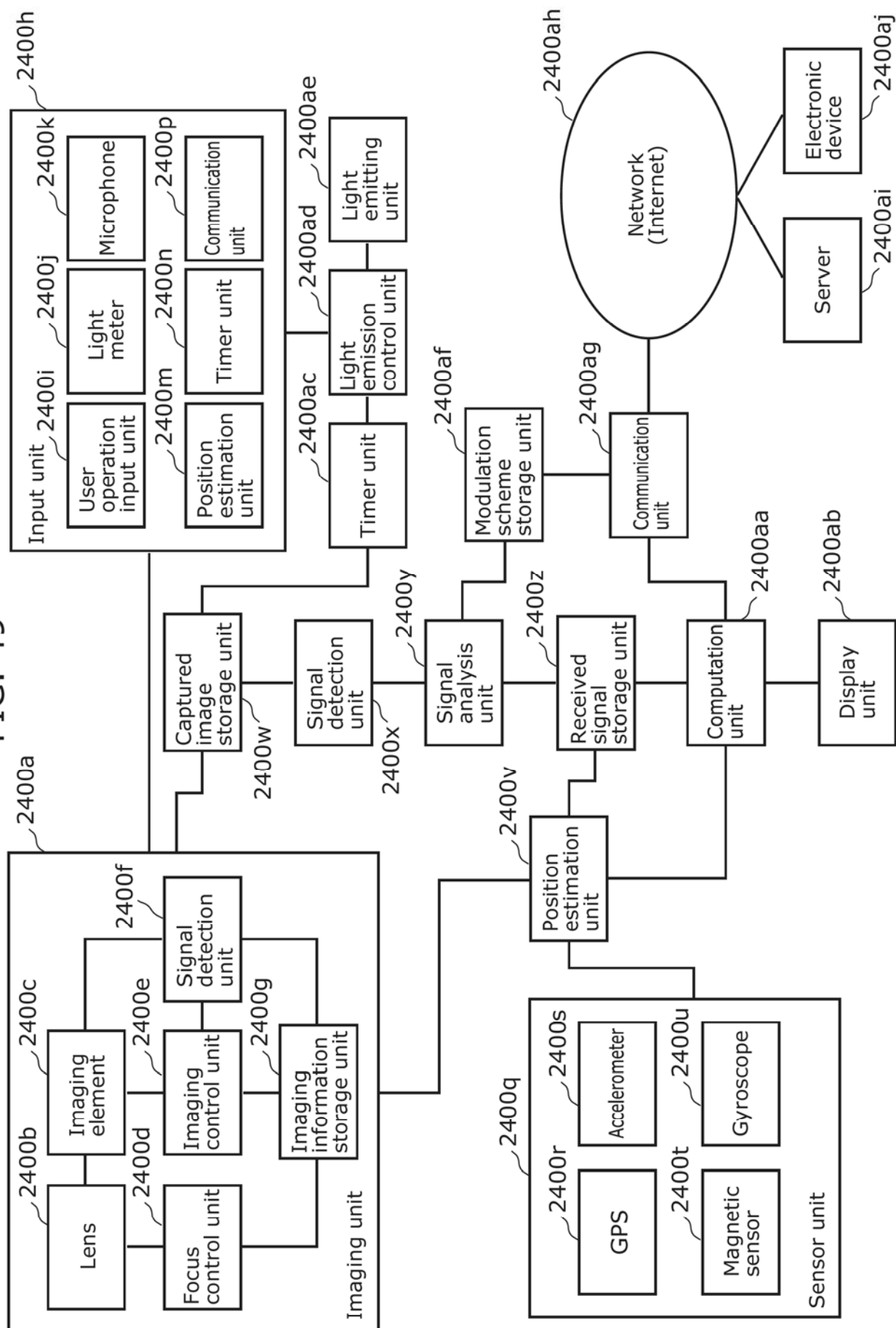


FIG. 50

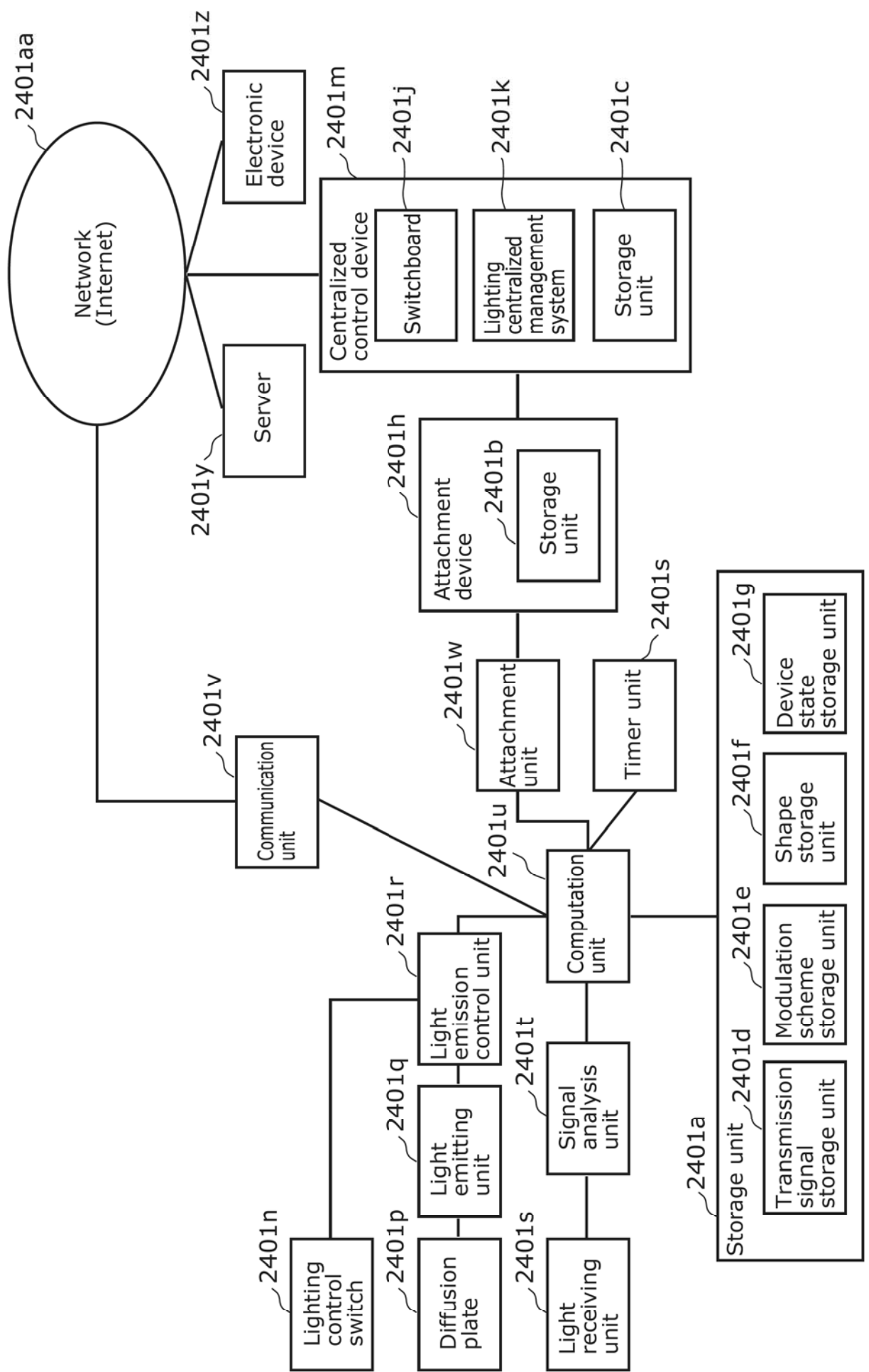


FIG. 51

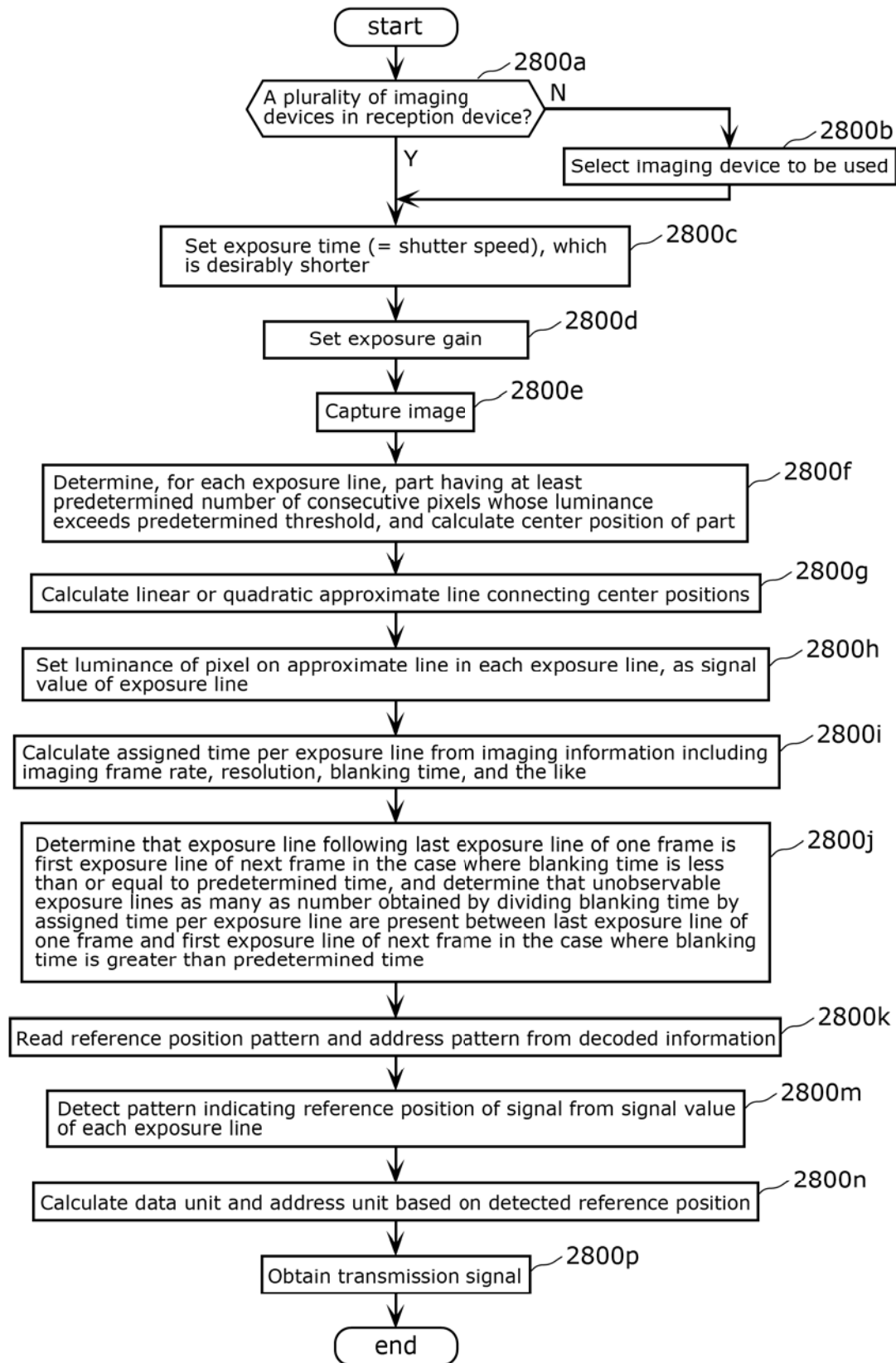


FIG. 52

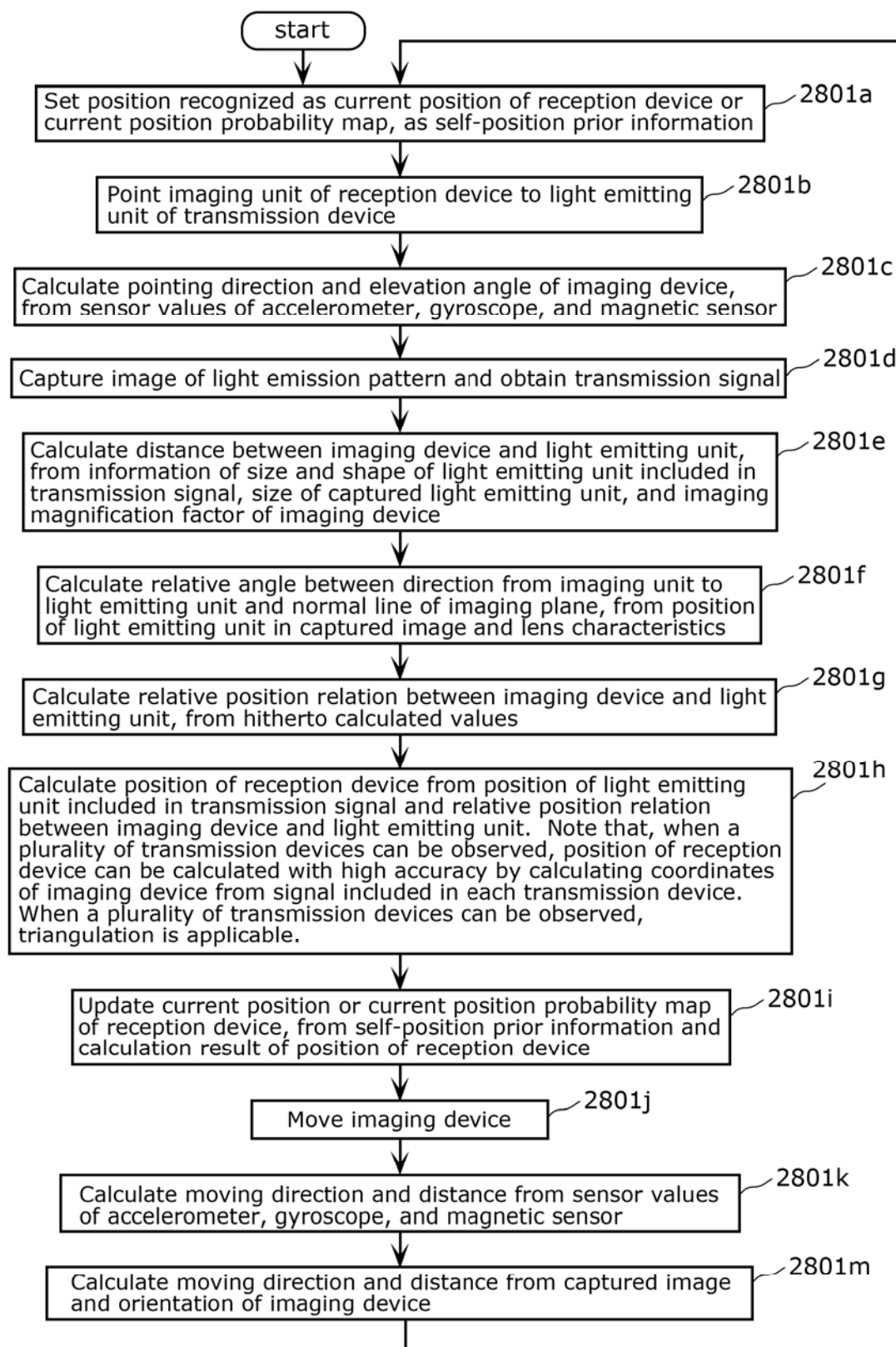




FIG. 53

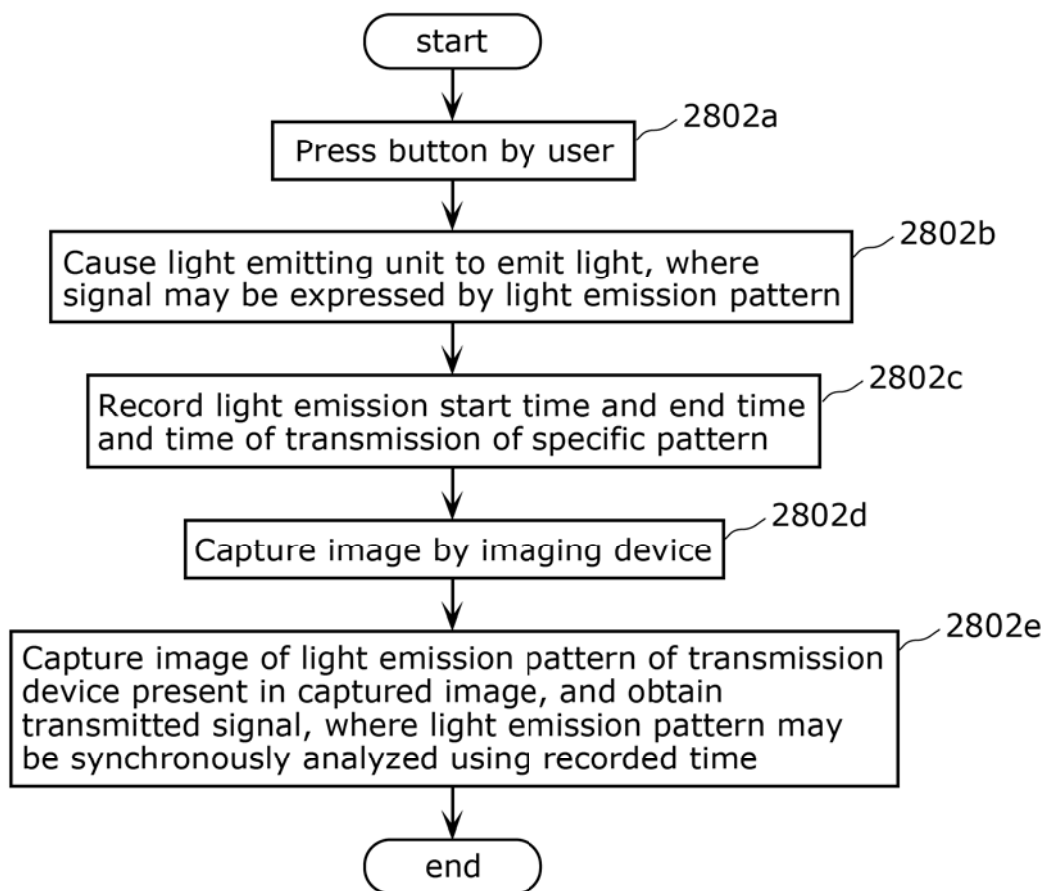


FIG. 54

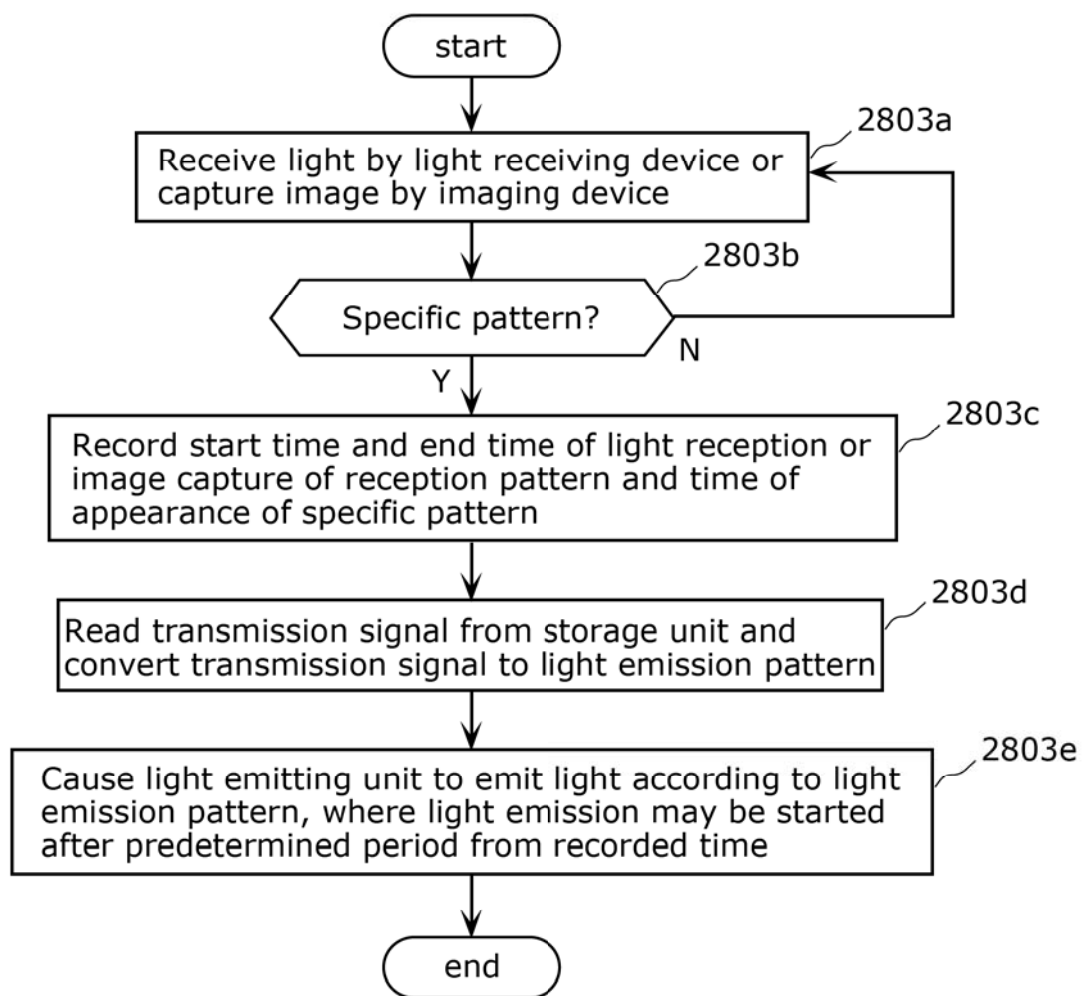


FIG. 55

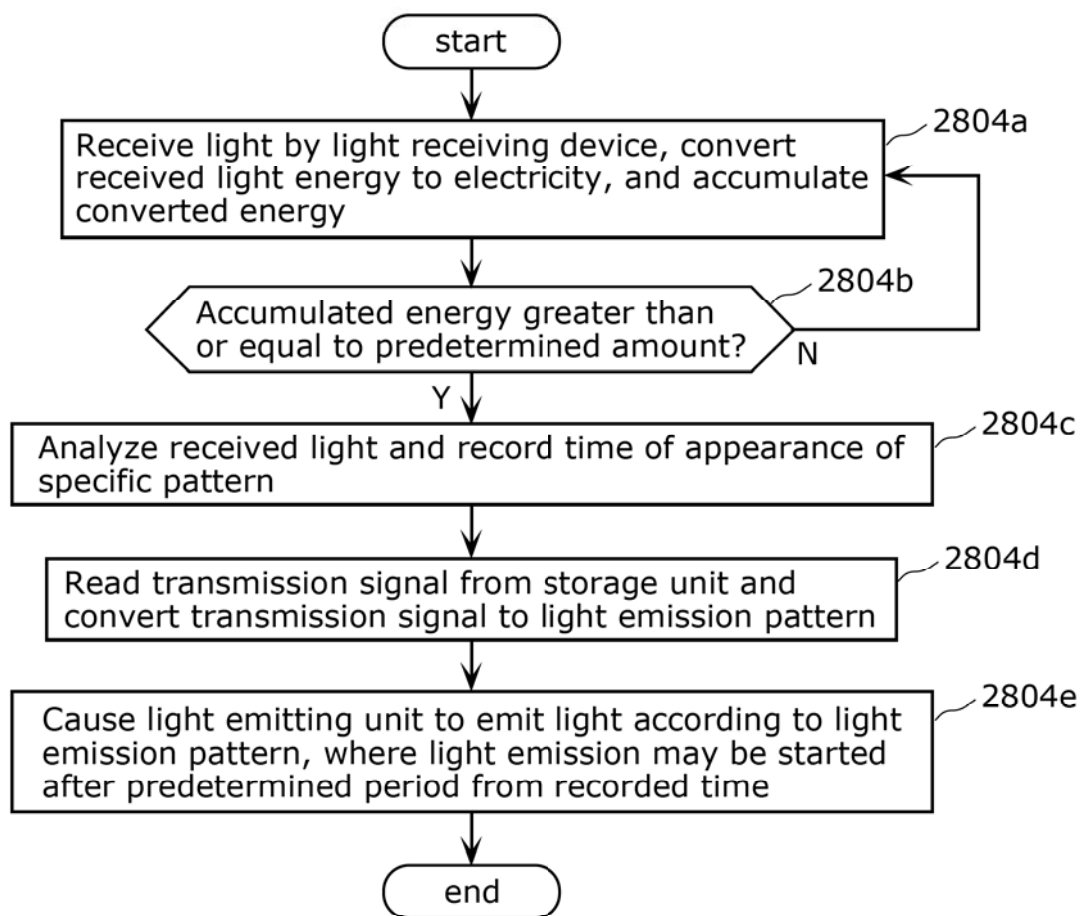
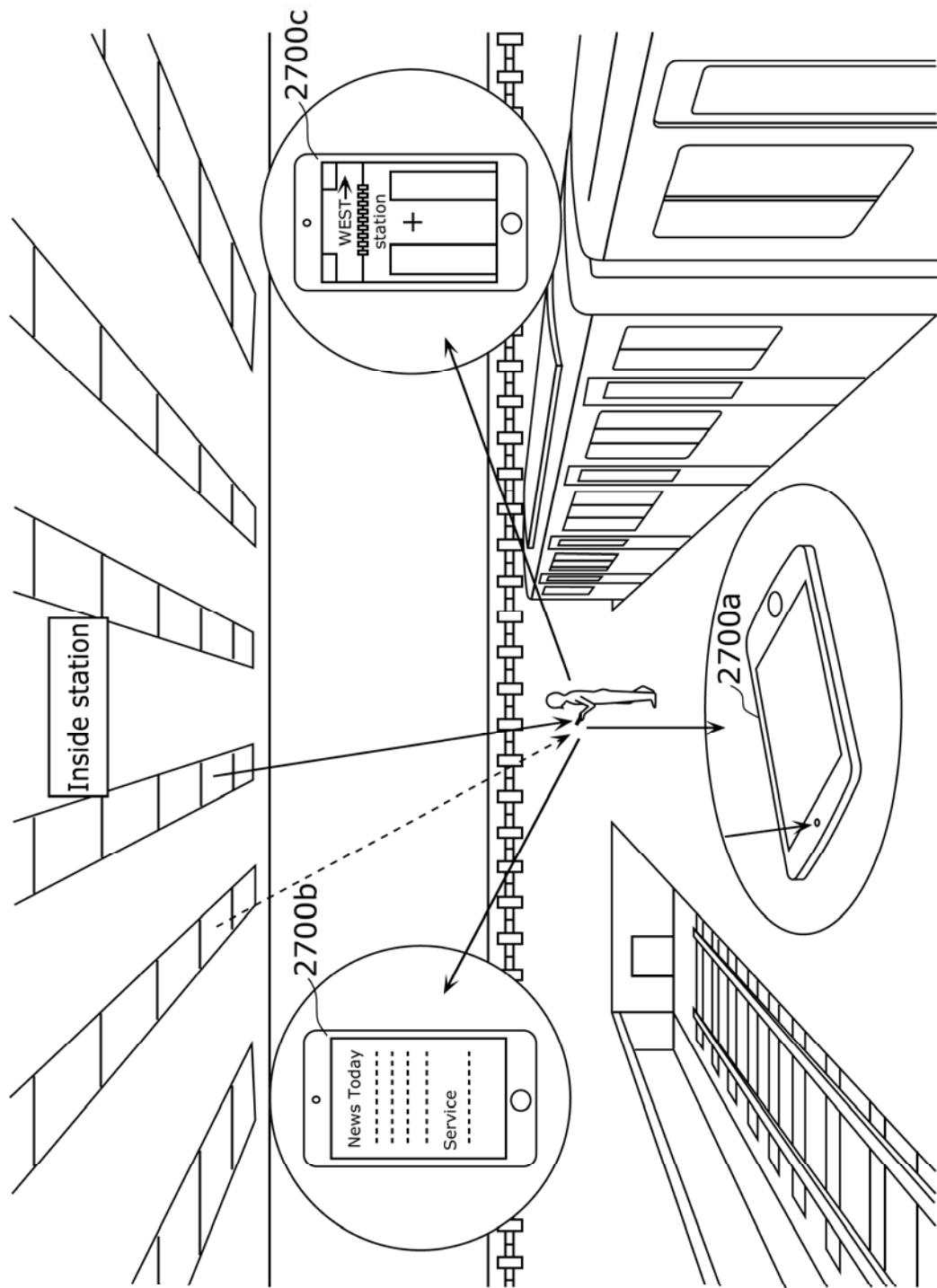


FIG. 56



**FIG. 57**

FIG. 58

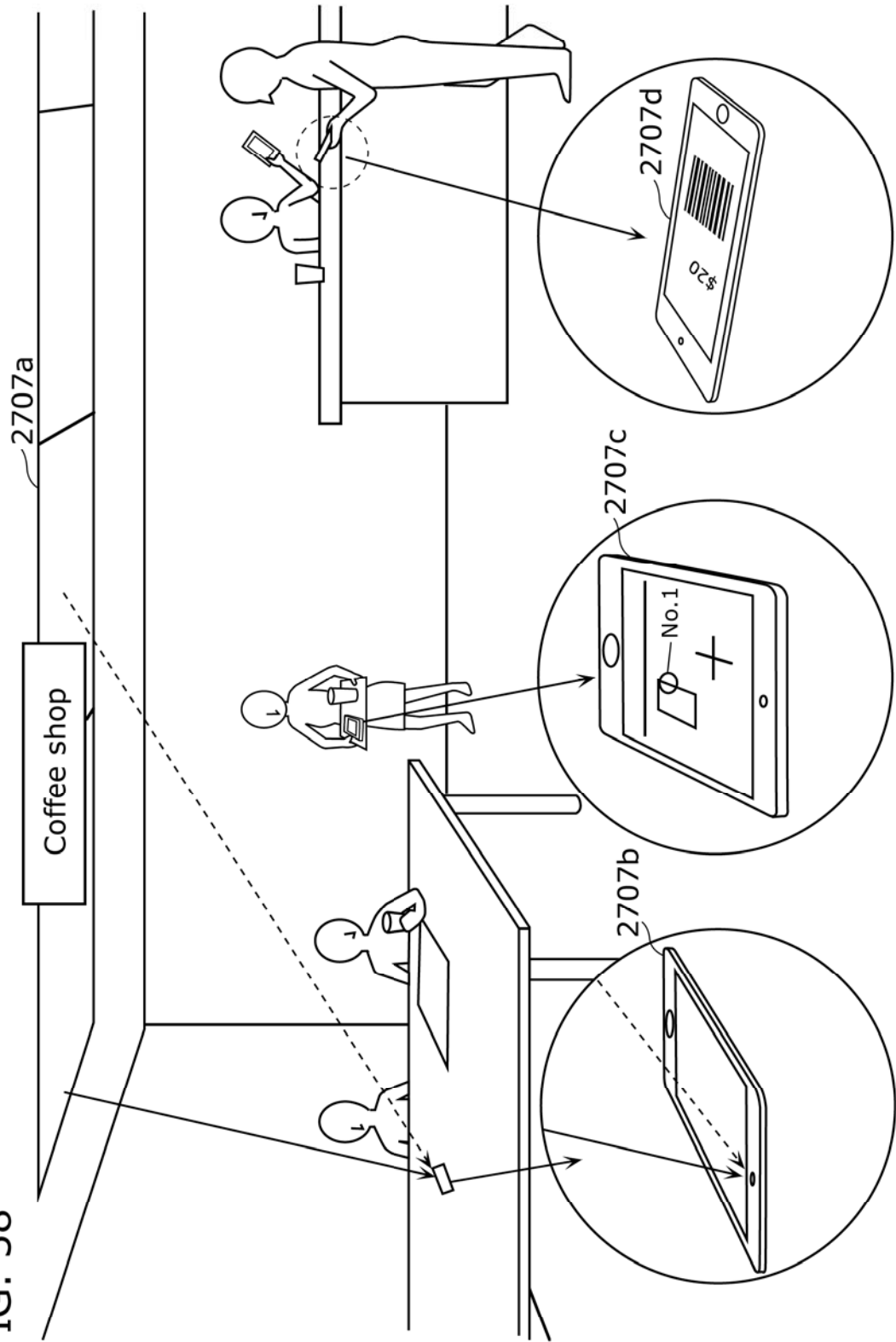


FIG. 59

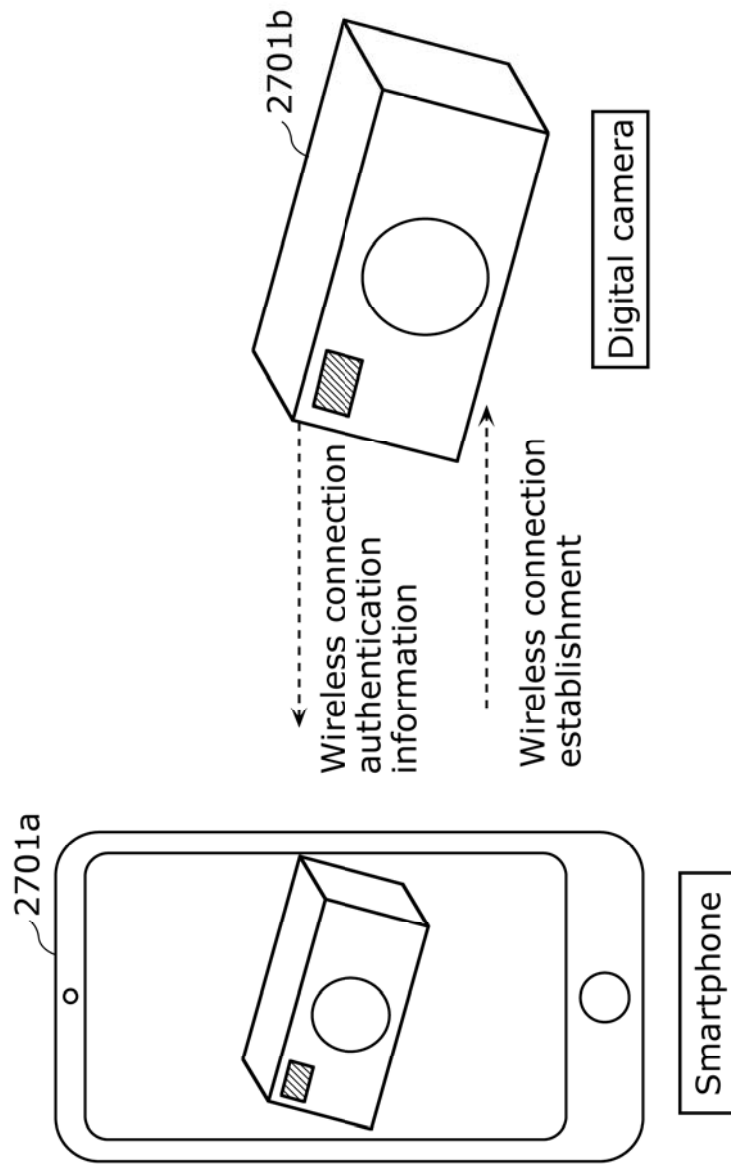


FIG. 60

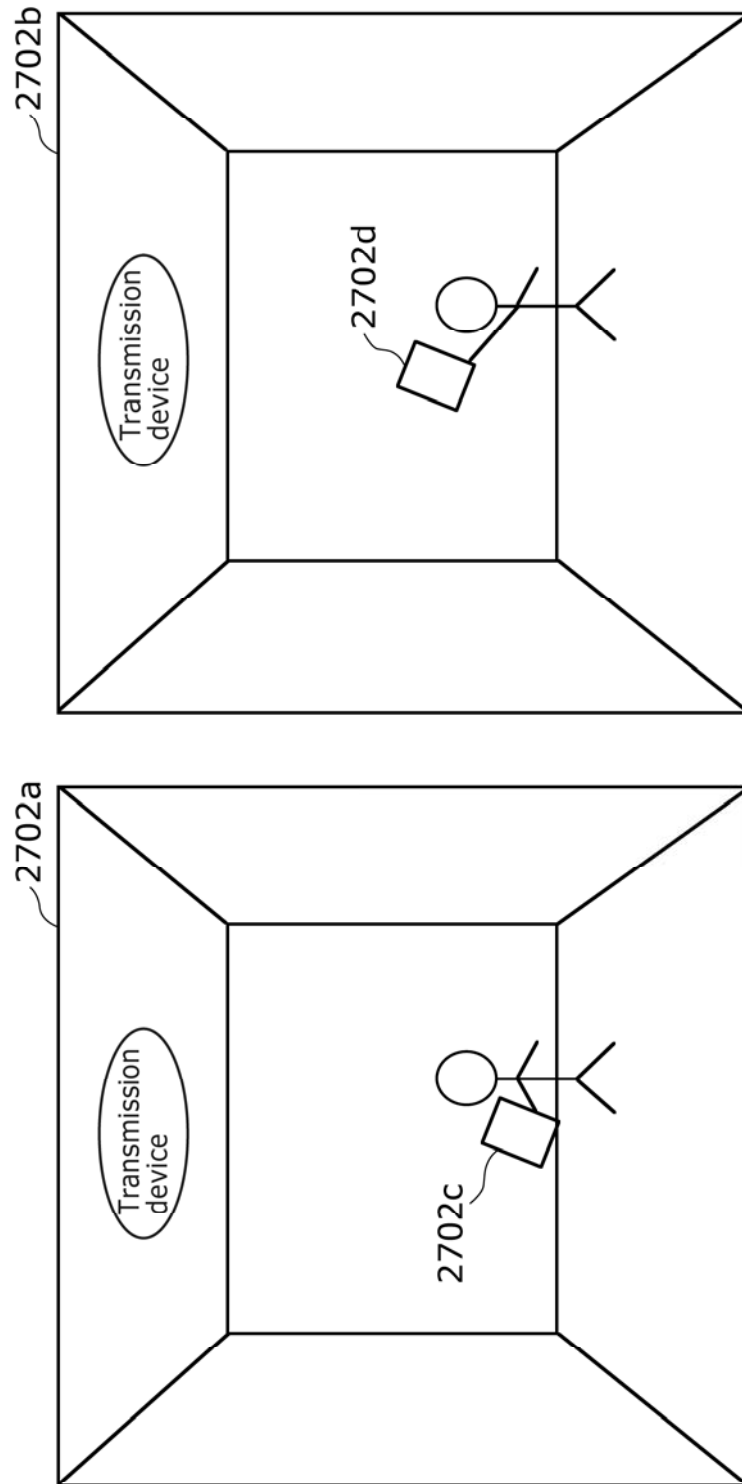
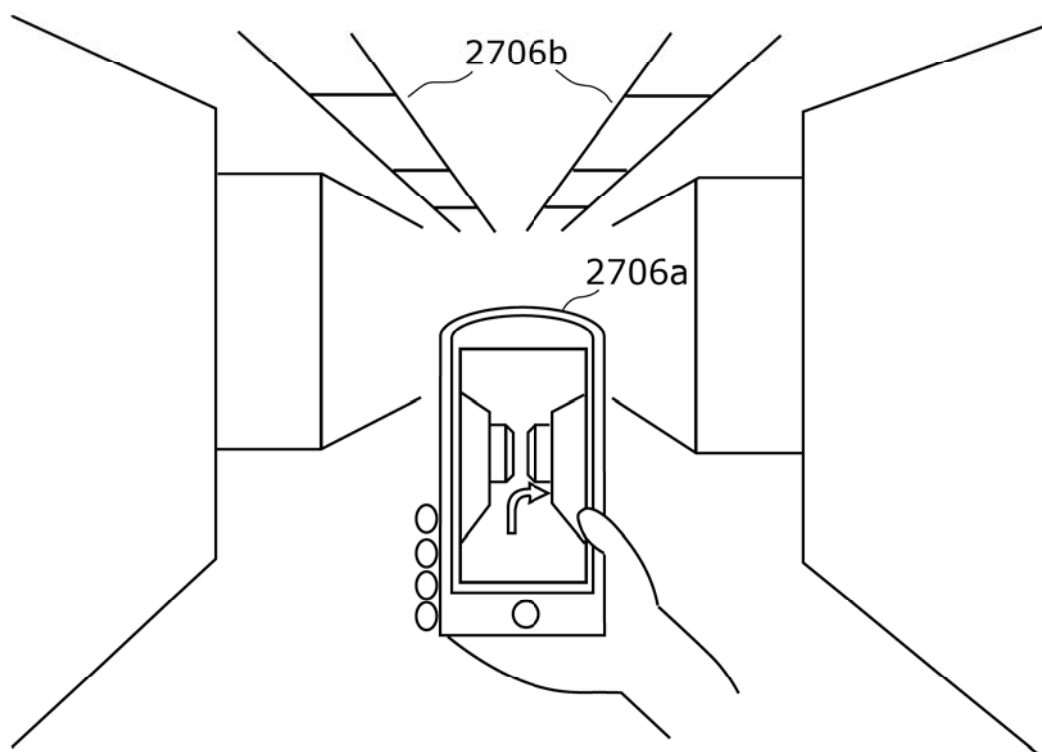




FIG. 61



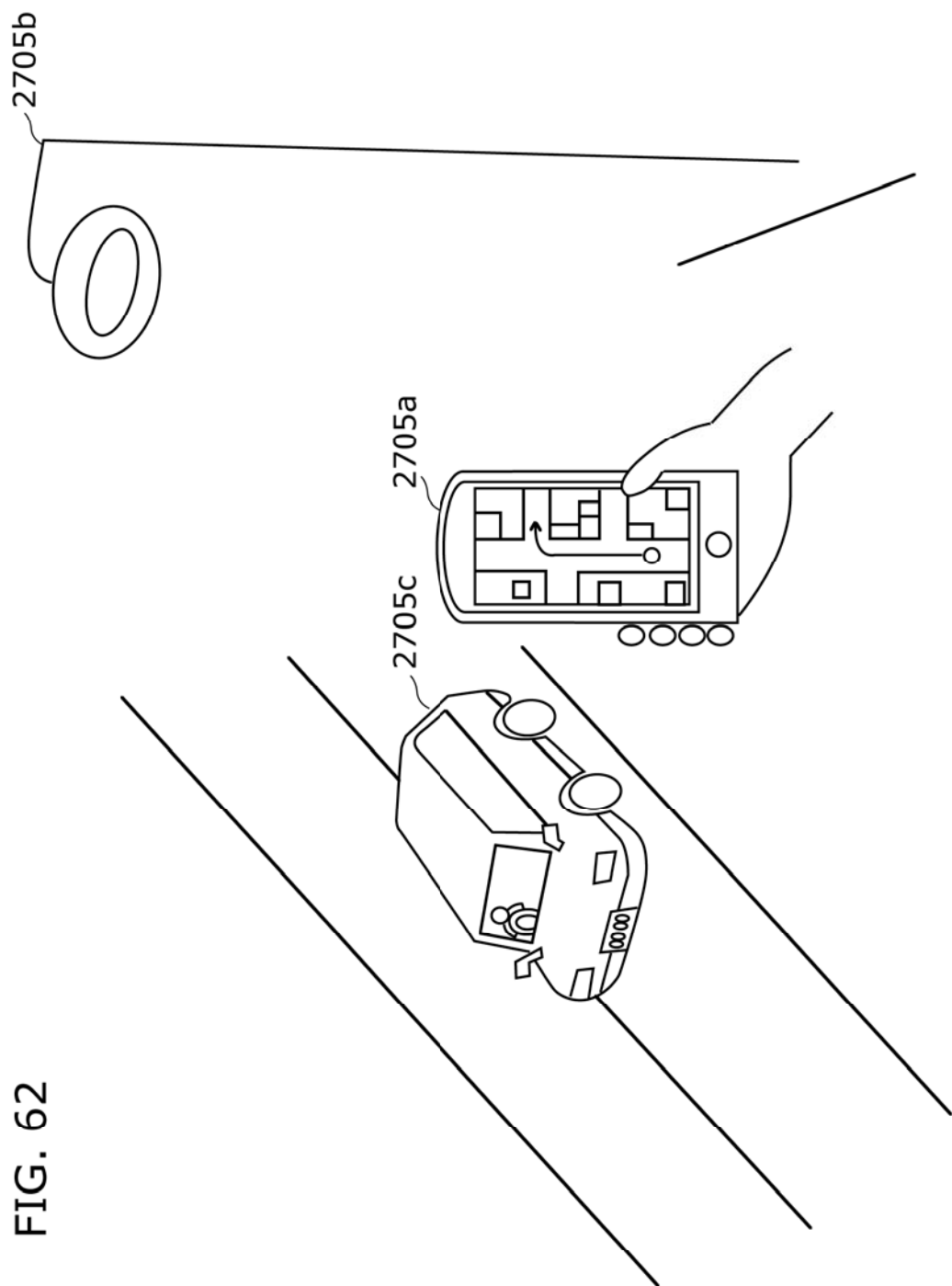


FIG. 62

FIG. 63

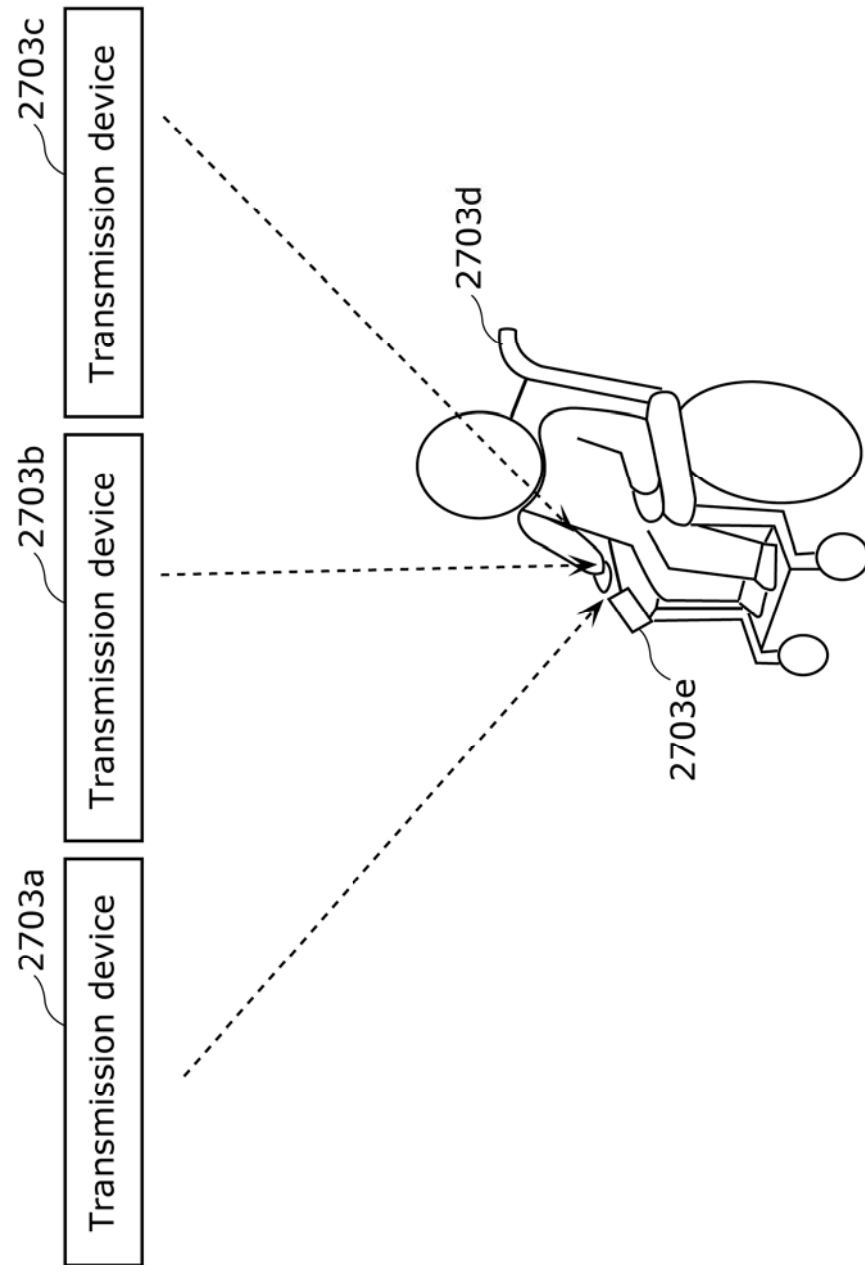


FIG. 64

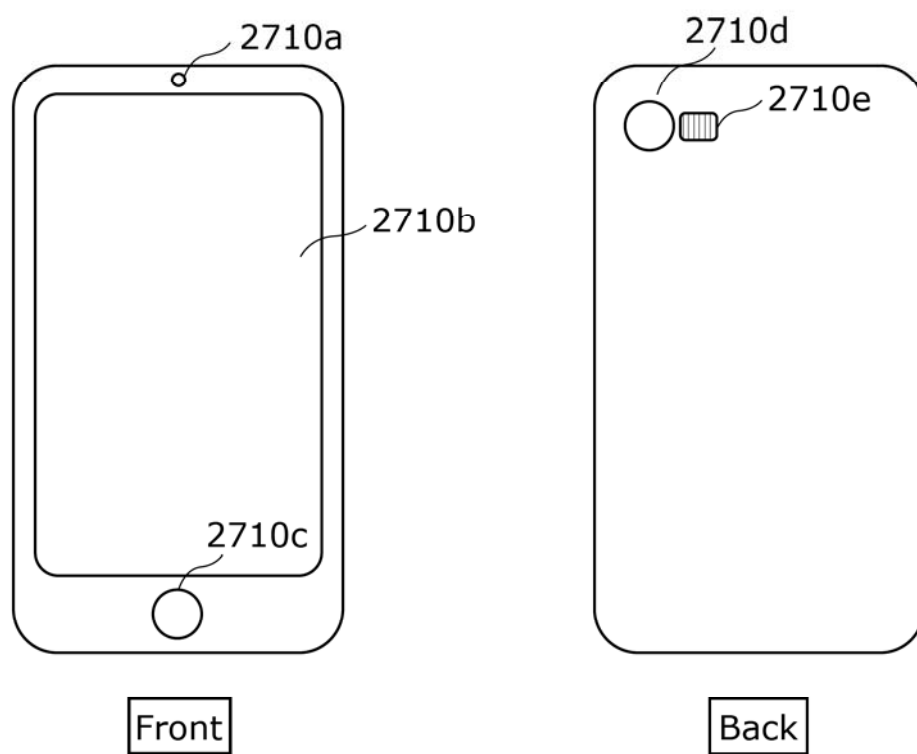


FIG. 65

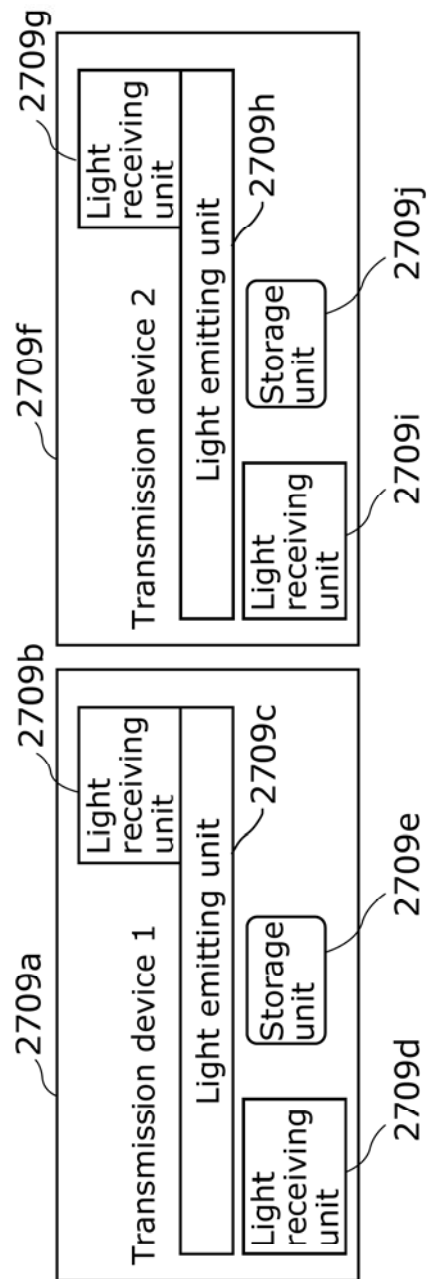


FIG. 66

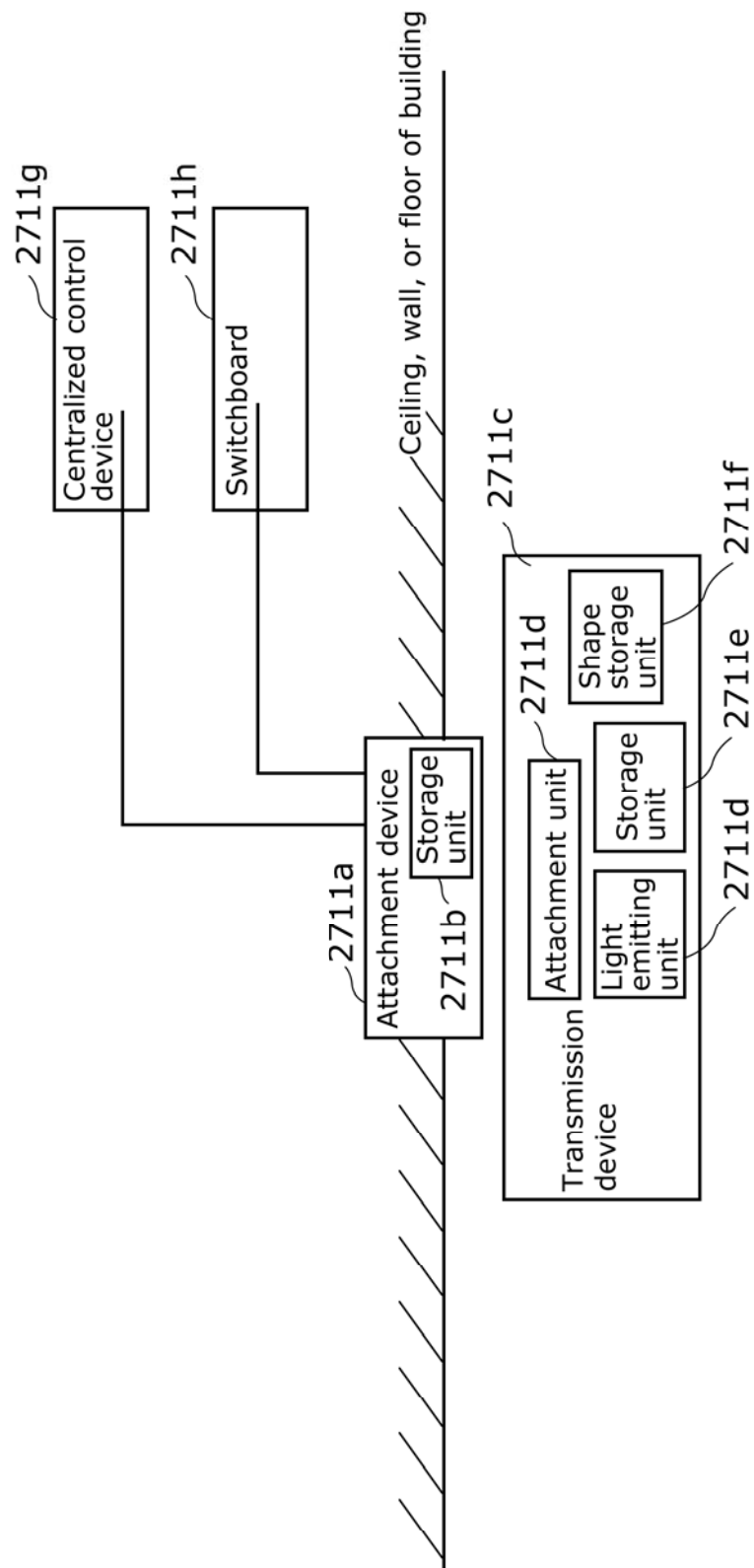


FIG. 67

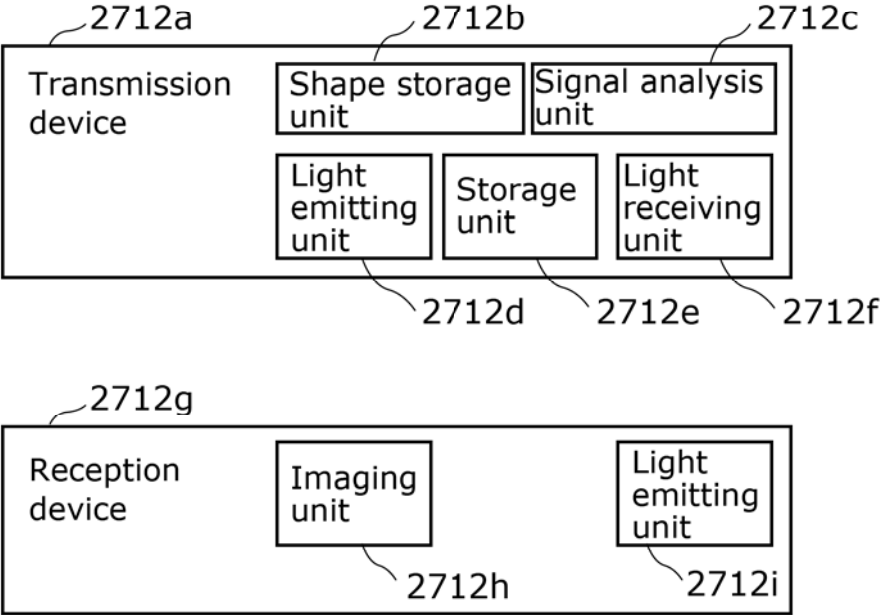


FIG. 68

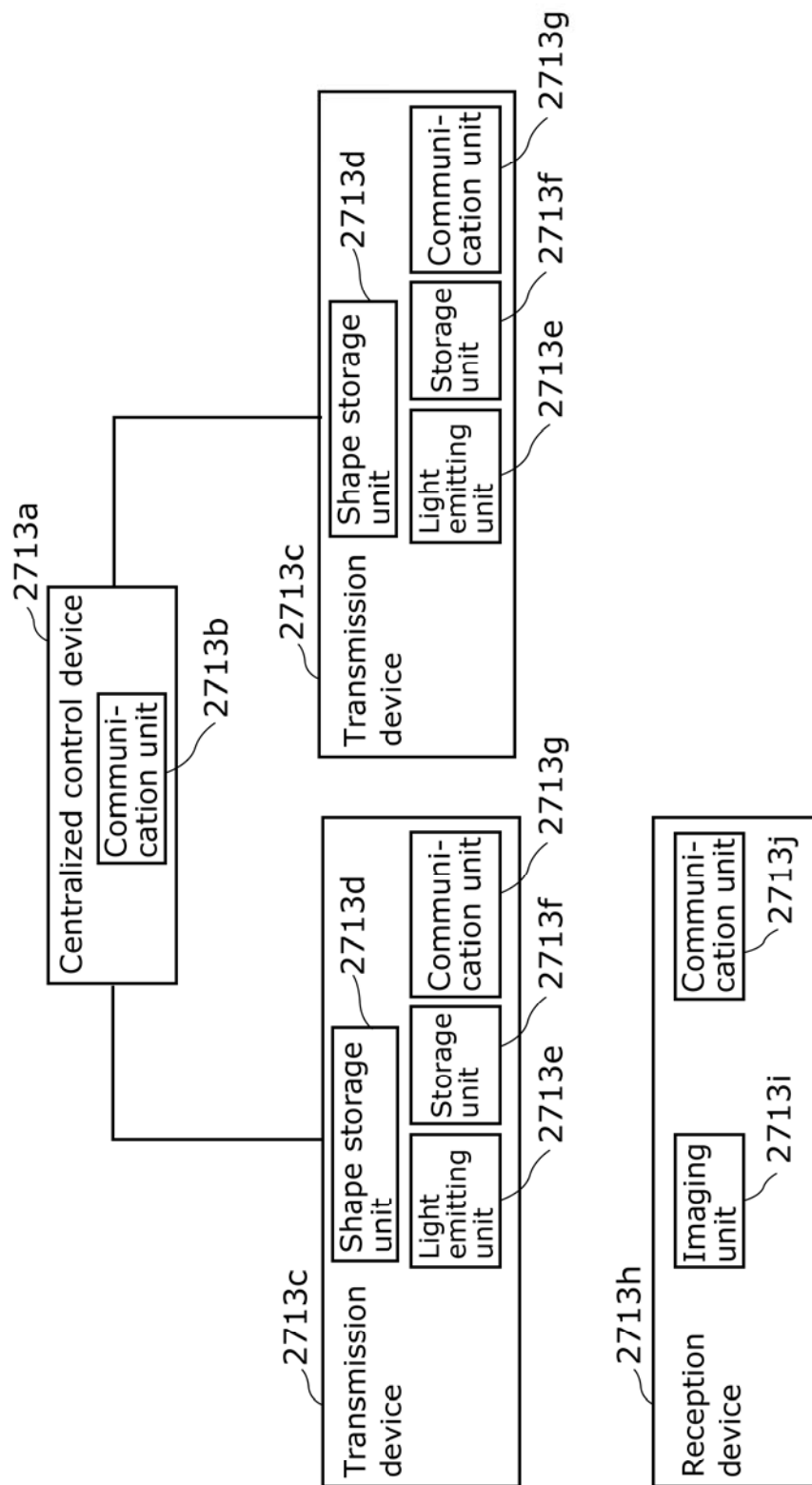




FIG. 69

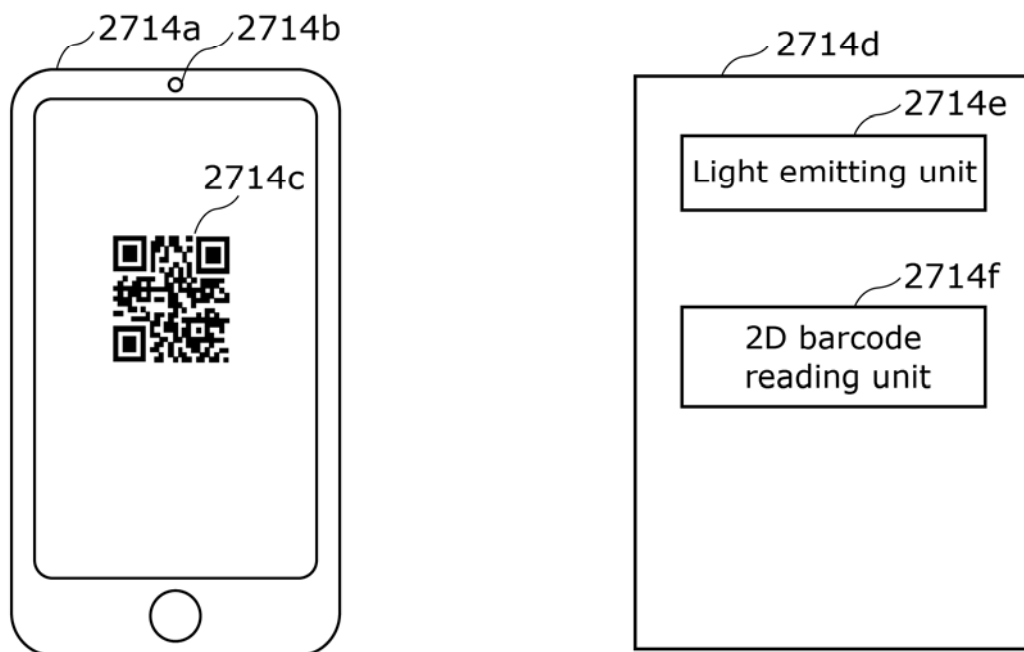


FIG. 70

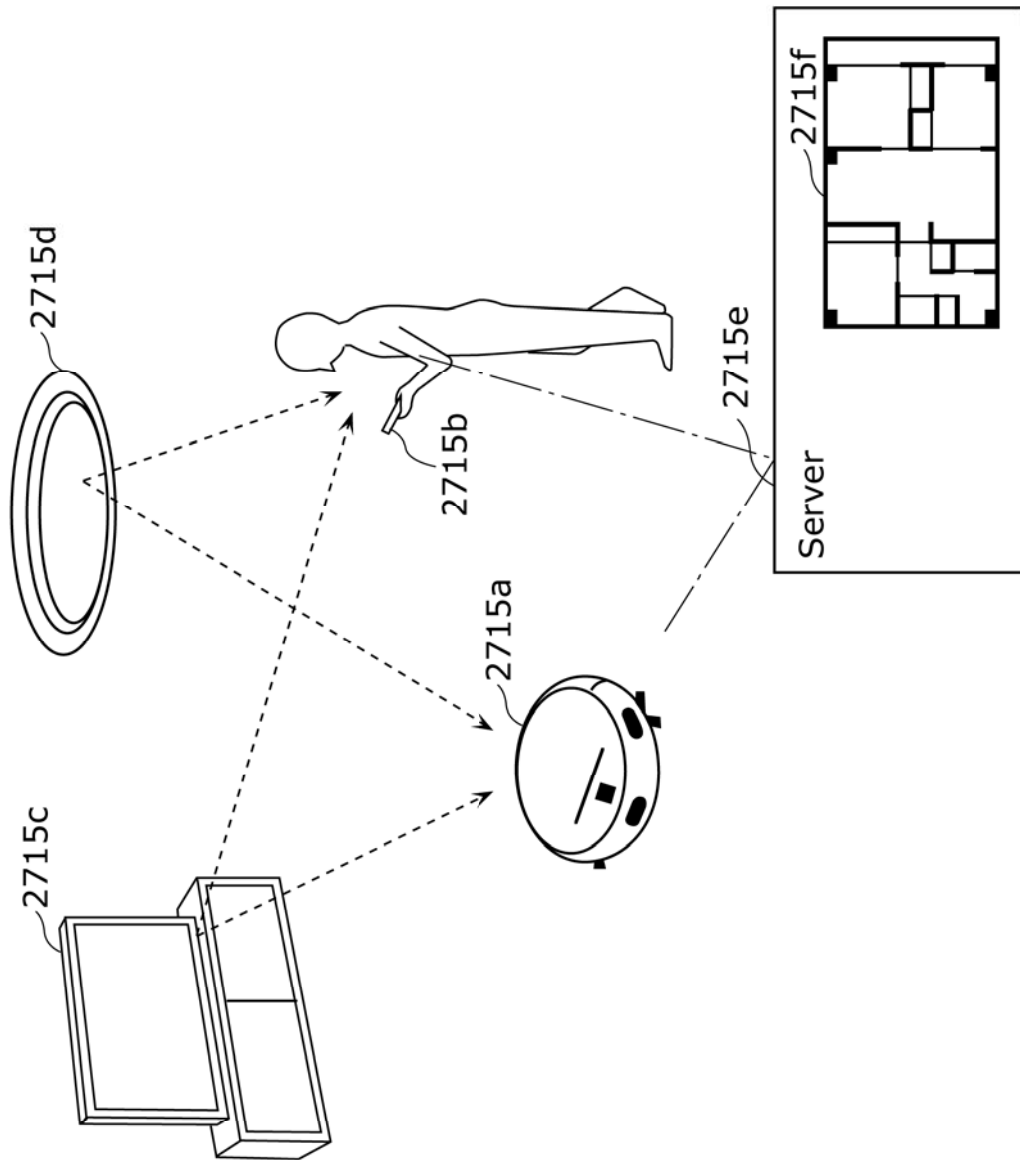


FIG. 71

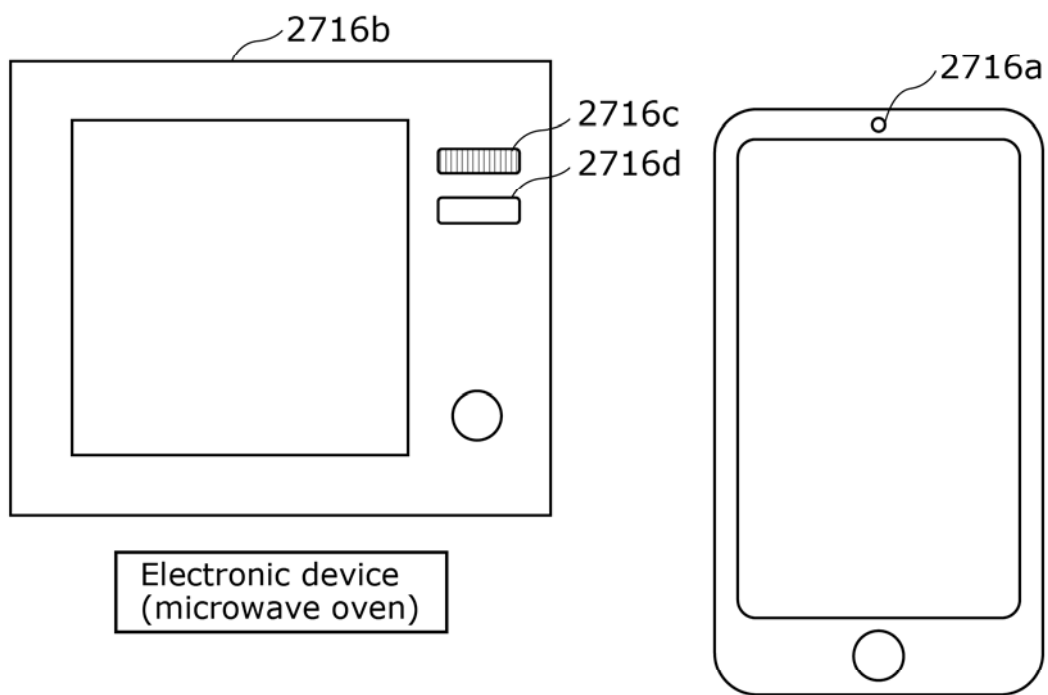


FIG. 72

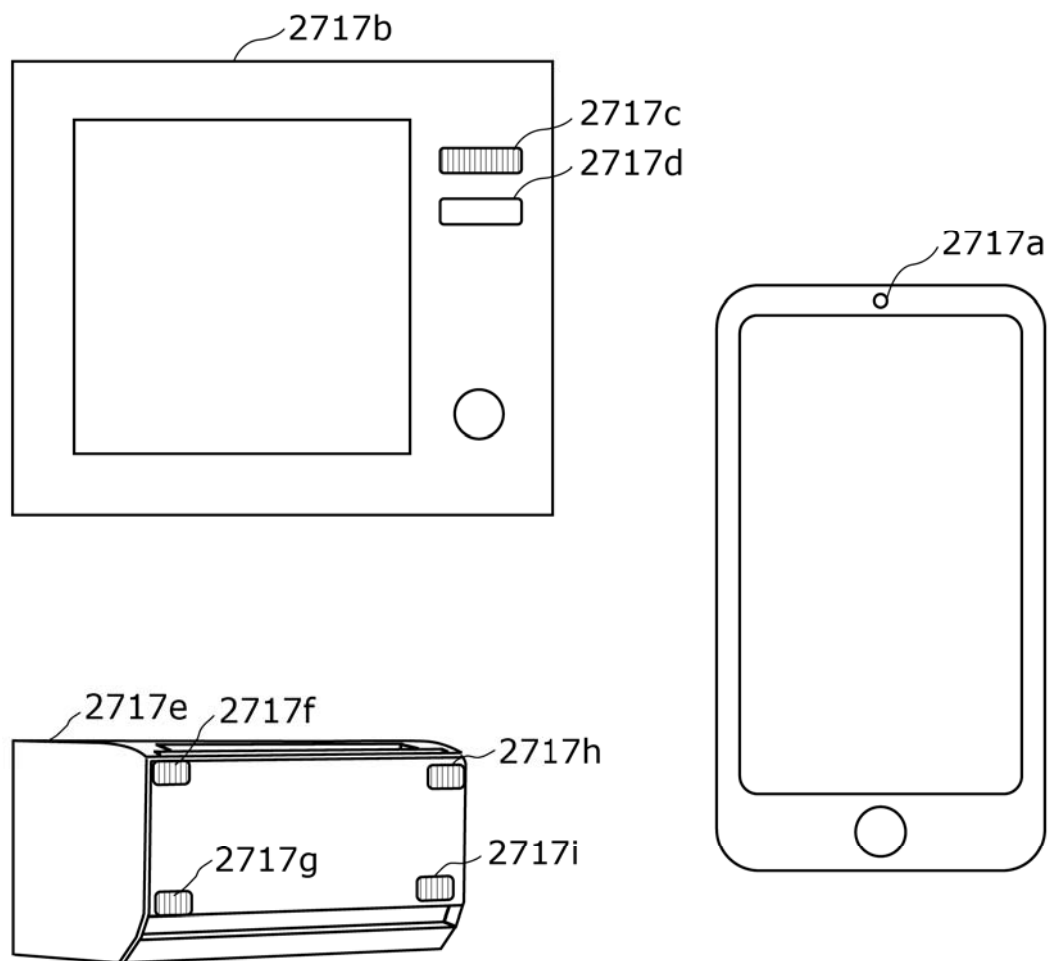


FIG. 73

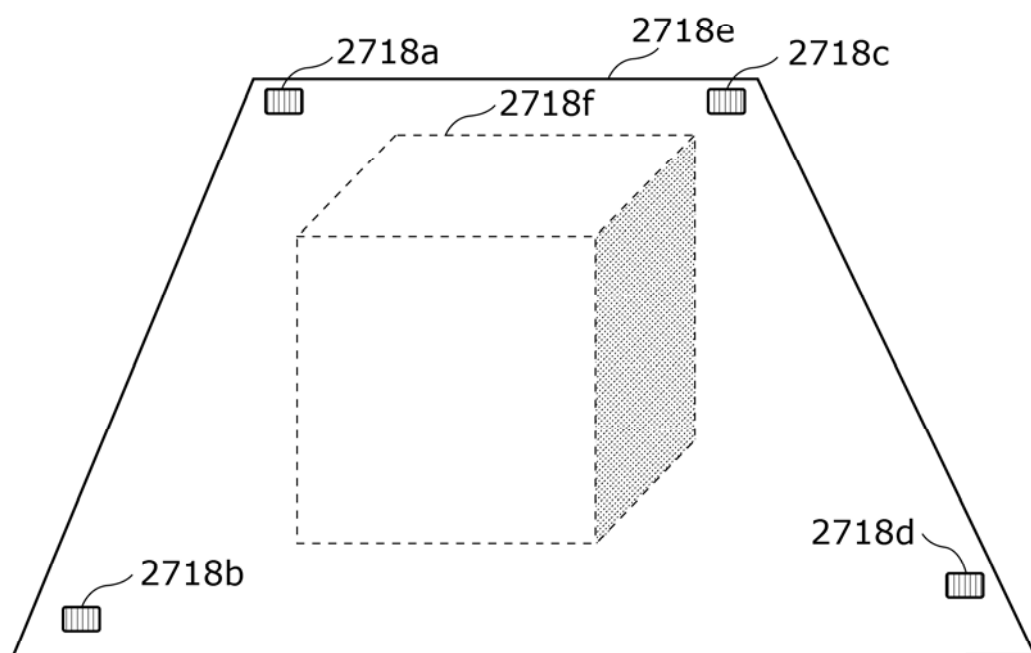


FIG. 74

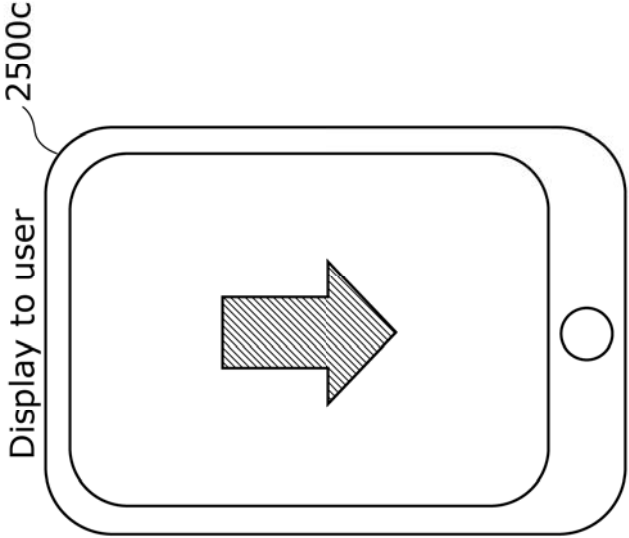
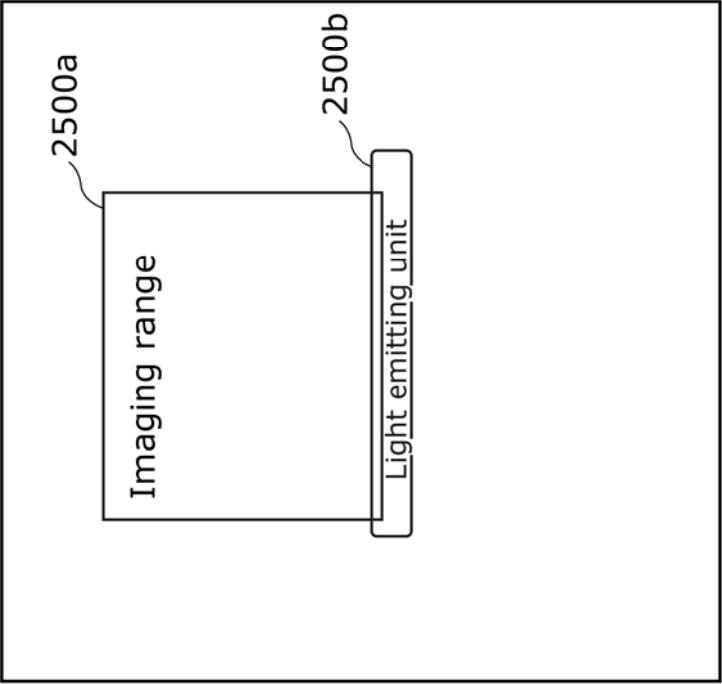
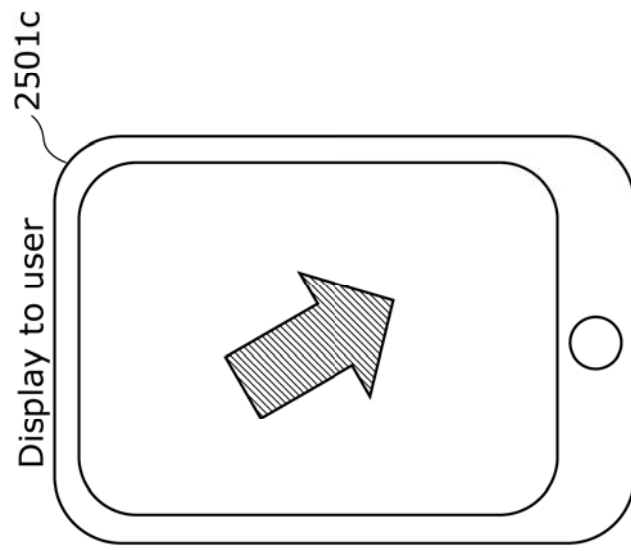
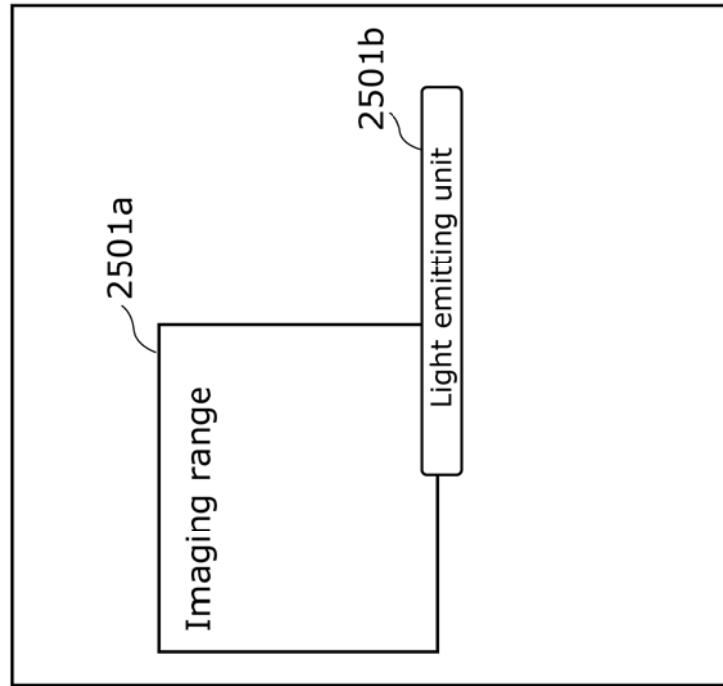


FIG. 75



The diagram shows a light emitting device 2502. It includes an imaging range 2502a, which is a rectangular area. It also includes a light emitting unit 2502b, which is a rectangular area. The light emitting unit 2502b is positioned below the imaging range 2502a.

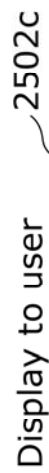




FIG. 77

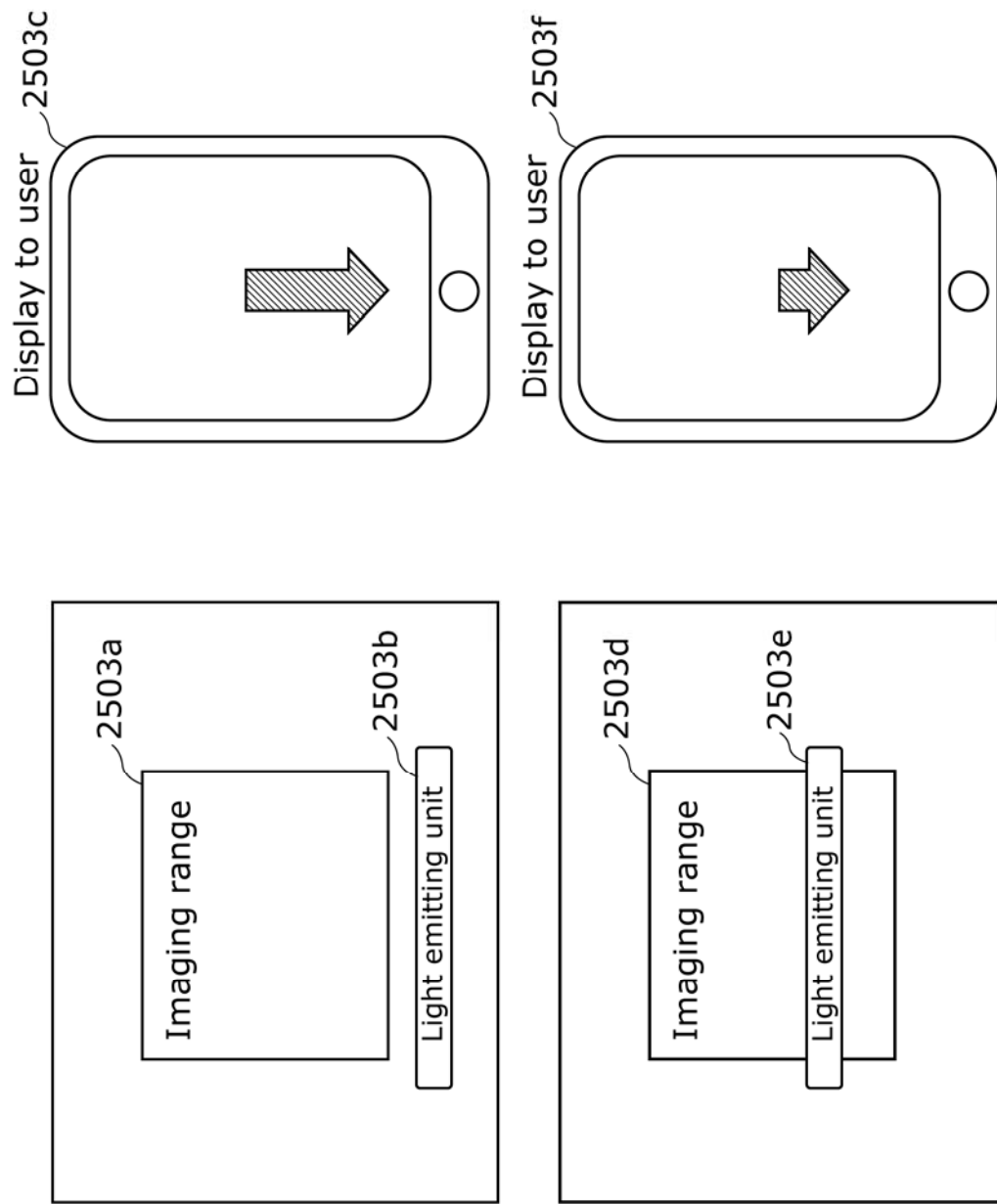


FIG. 78

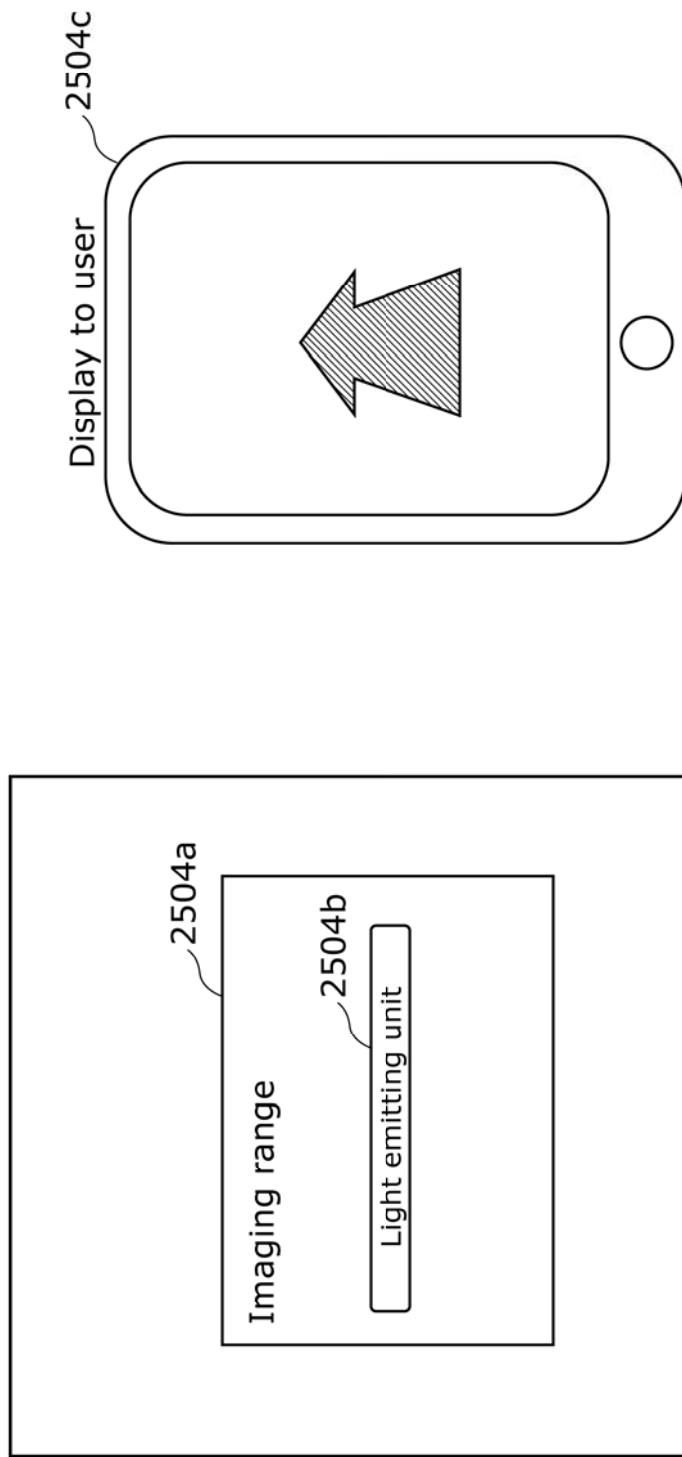


FIG. 79

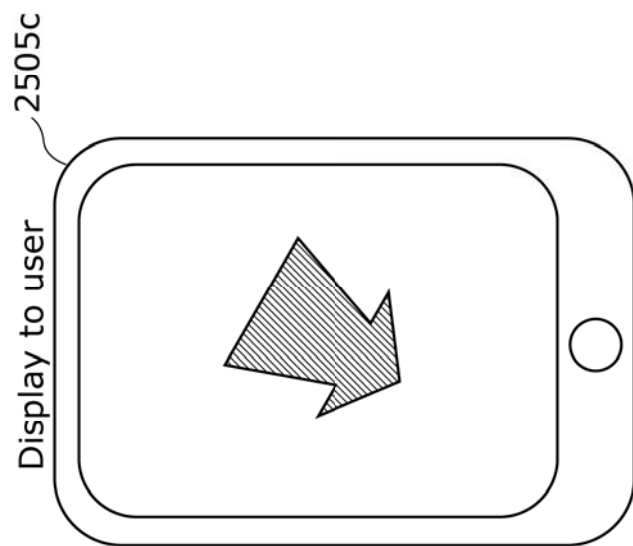
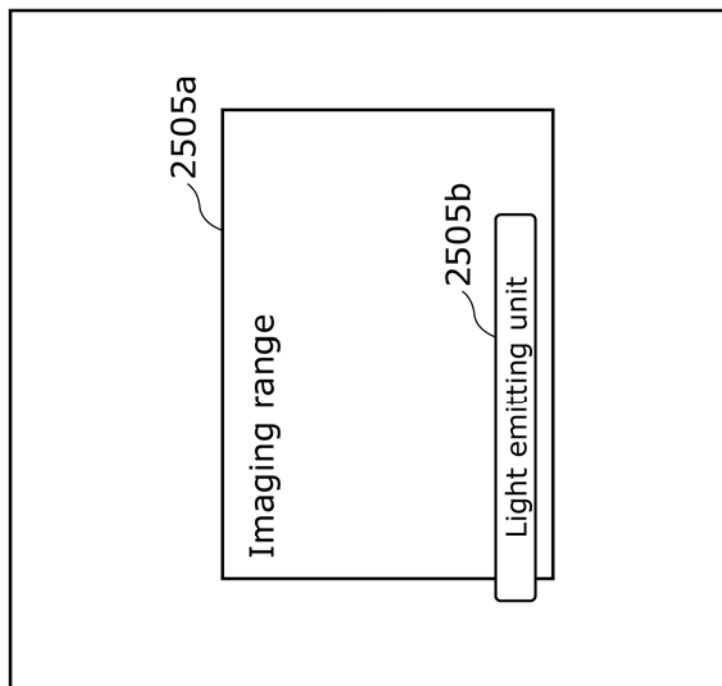


FIG. 80

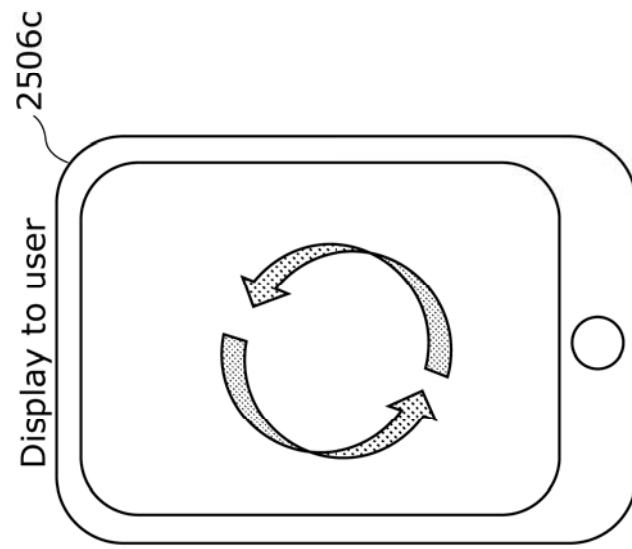
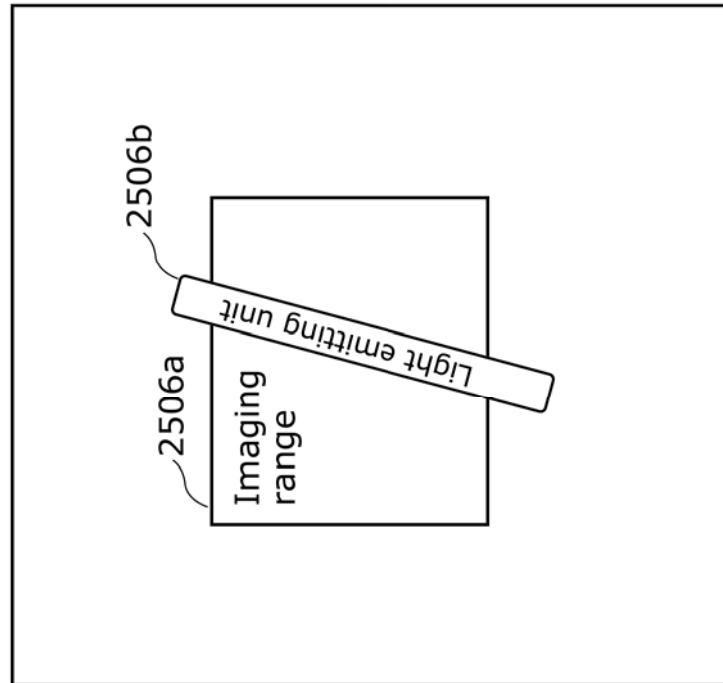


FIG. 81

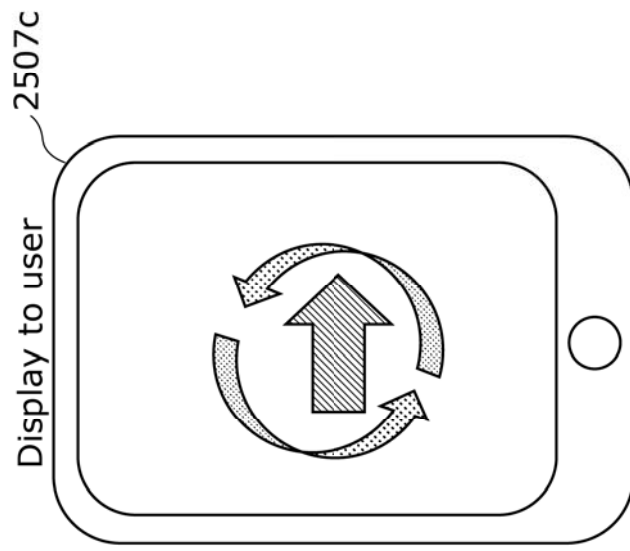
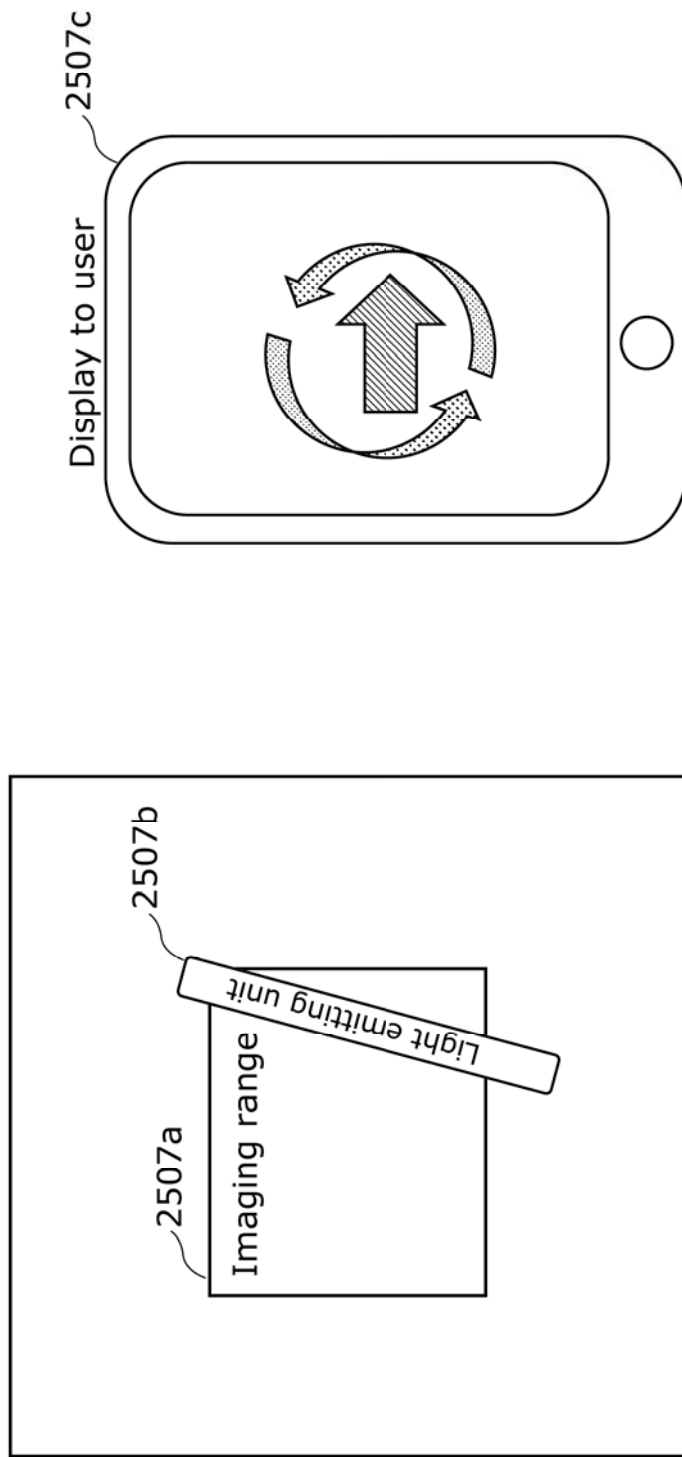


FIG. 82

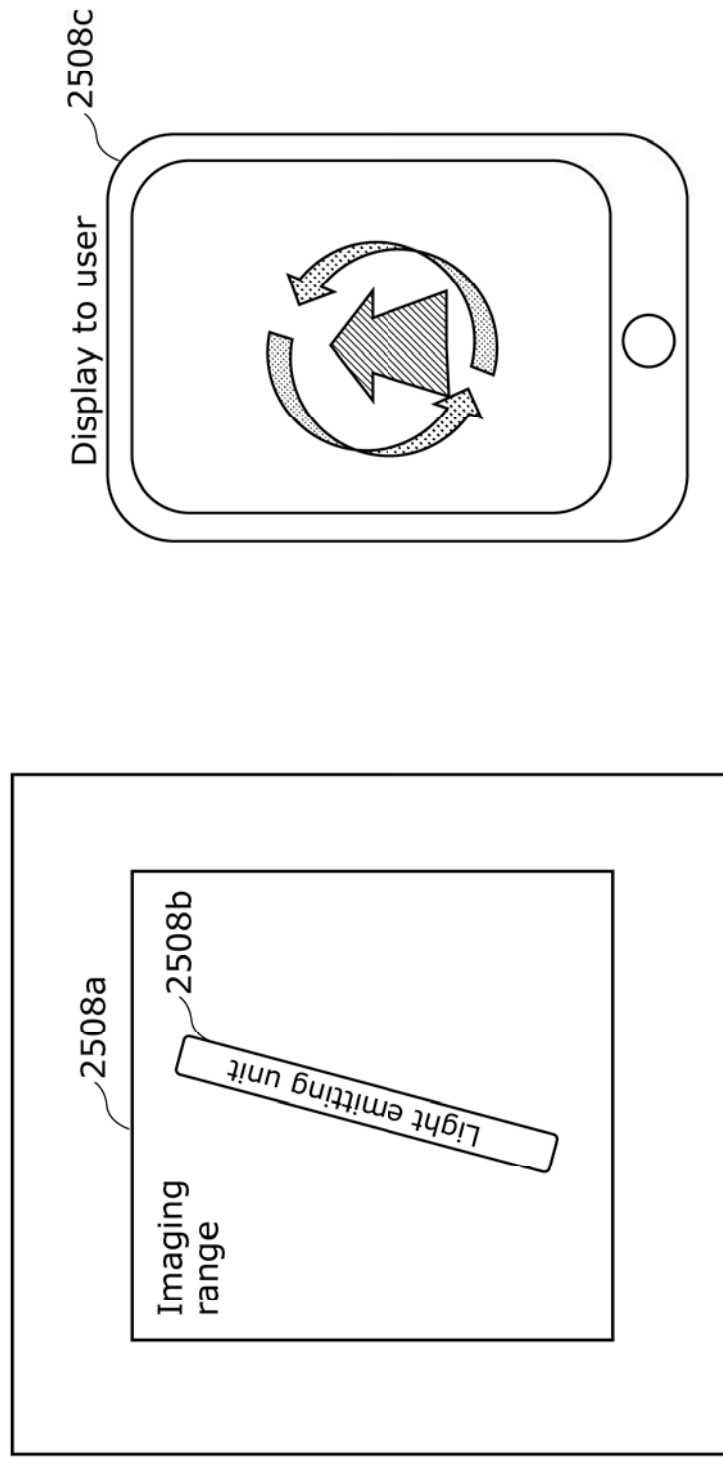


FIG. 83

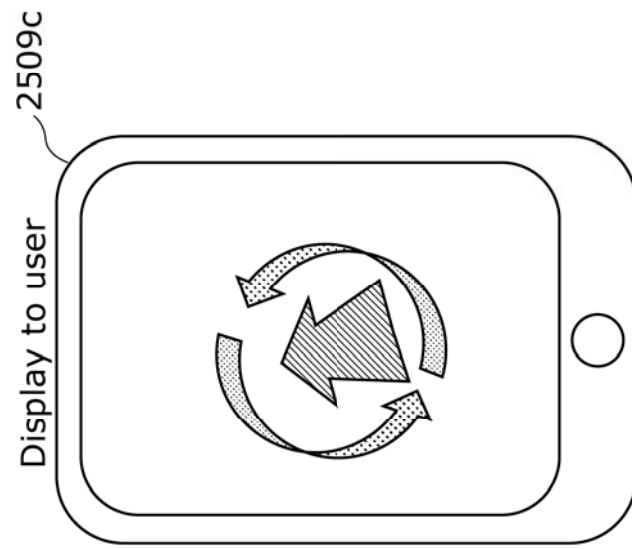
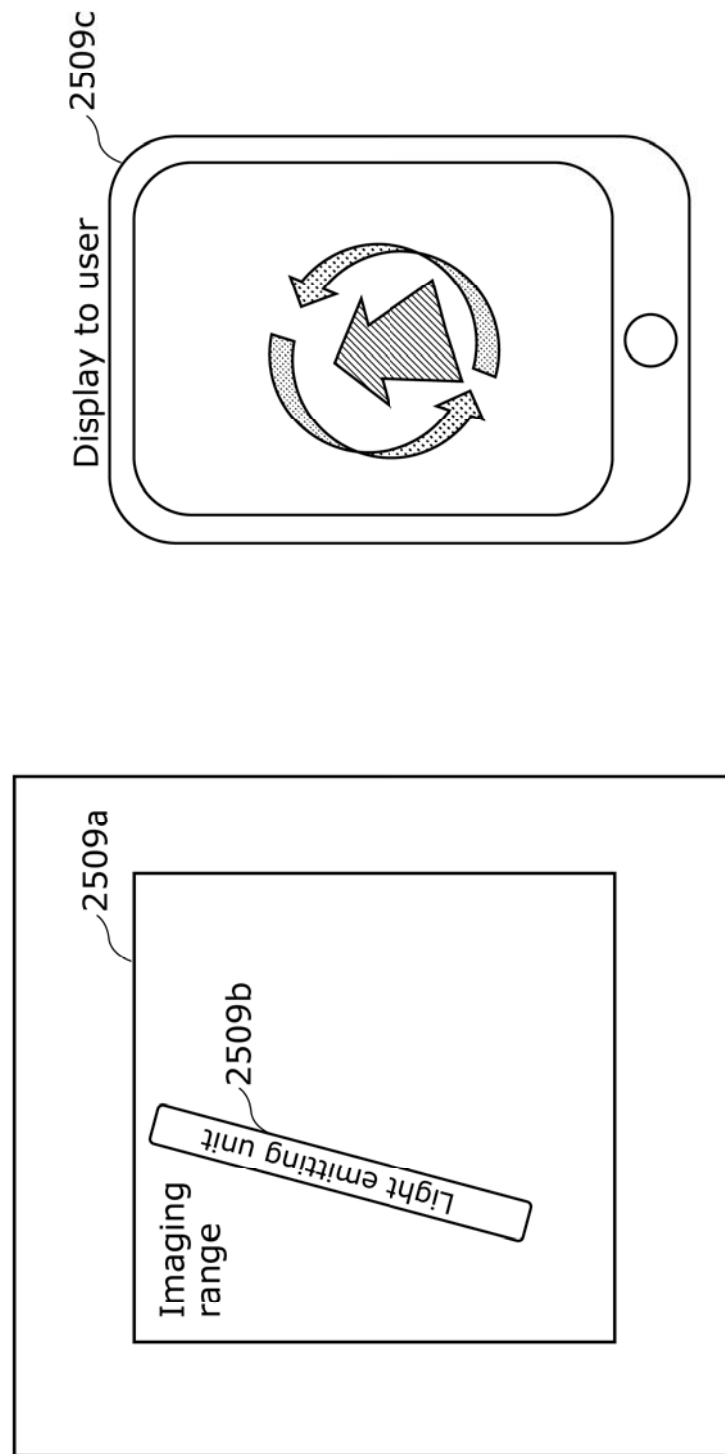


FIG. 84

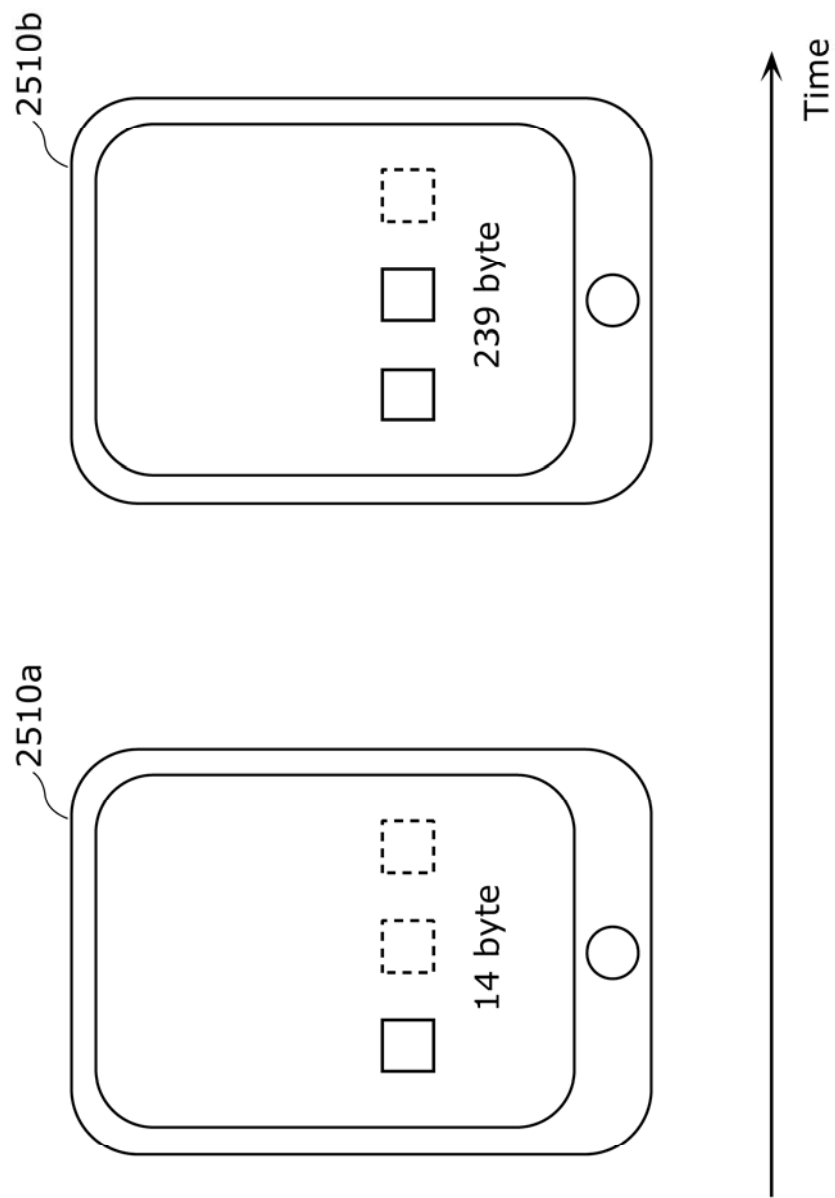




FIG. 85

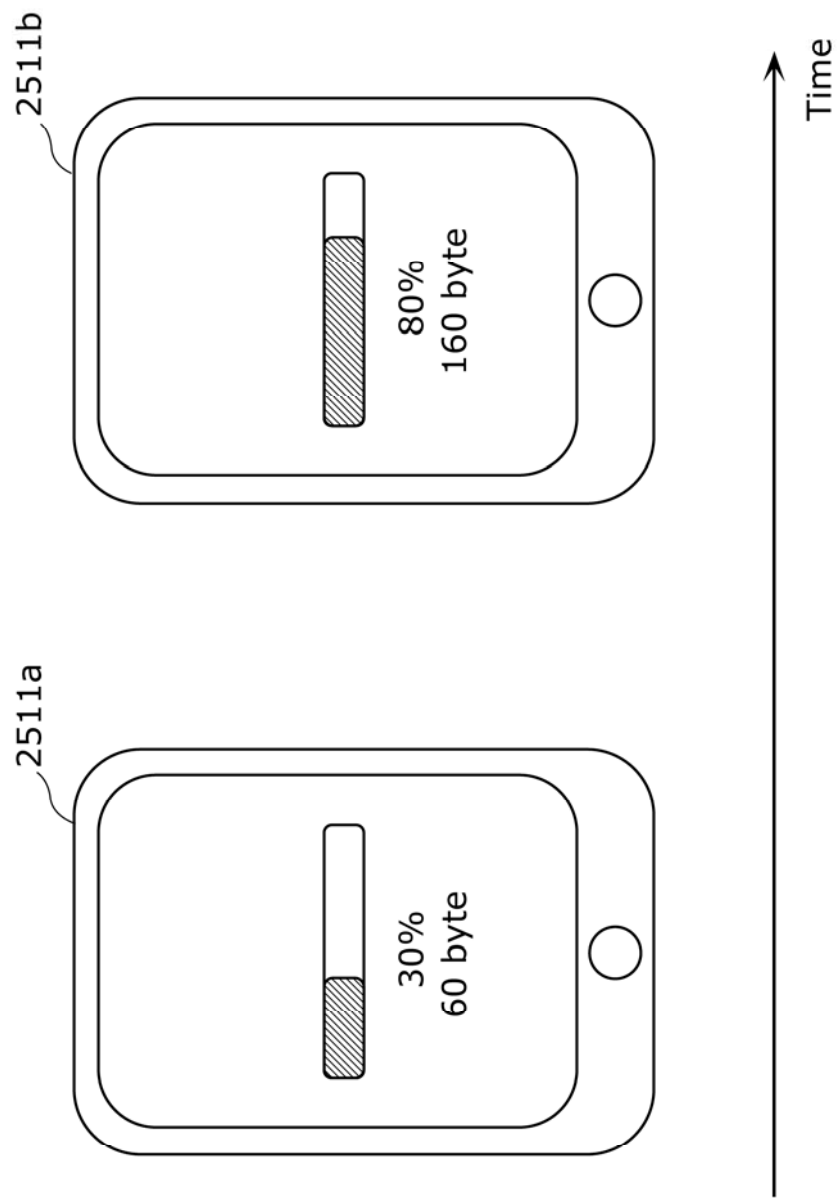


FIG. 86

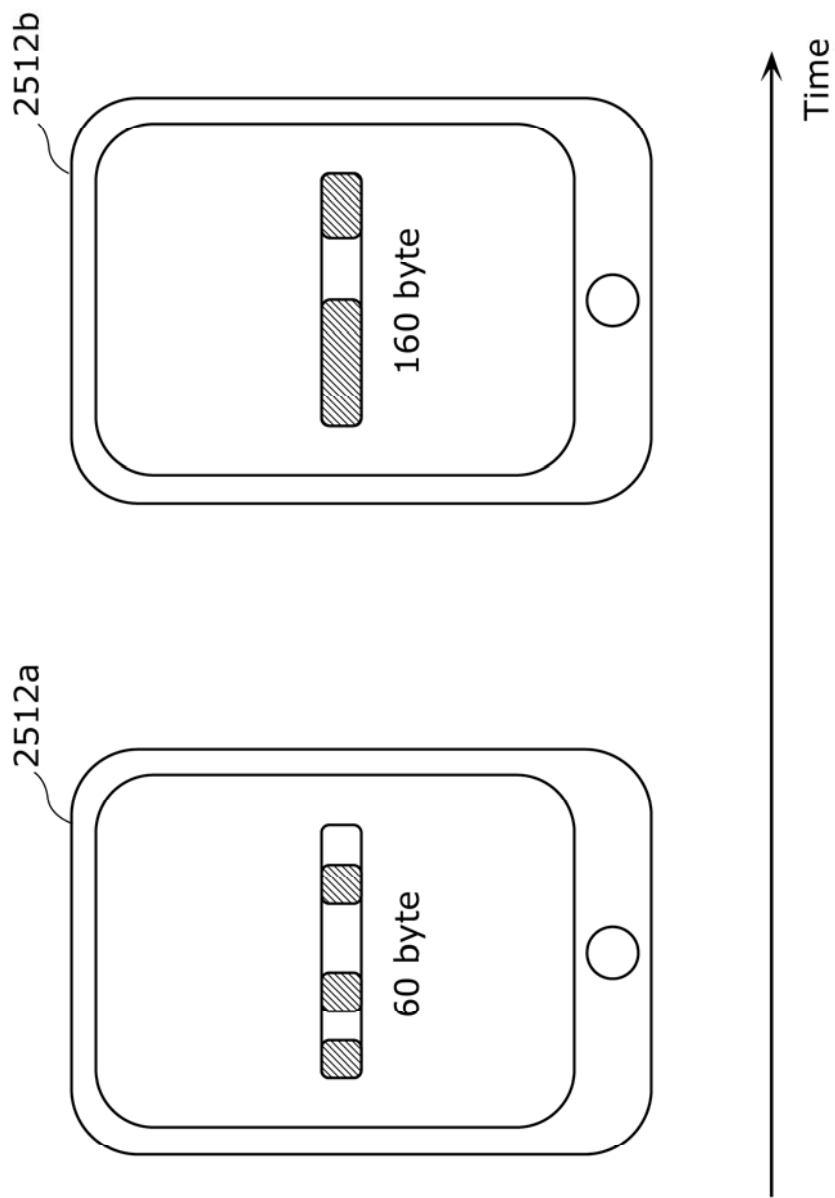


FIG. 87

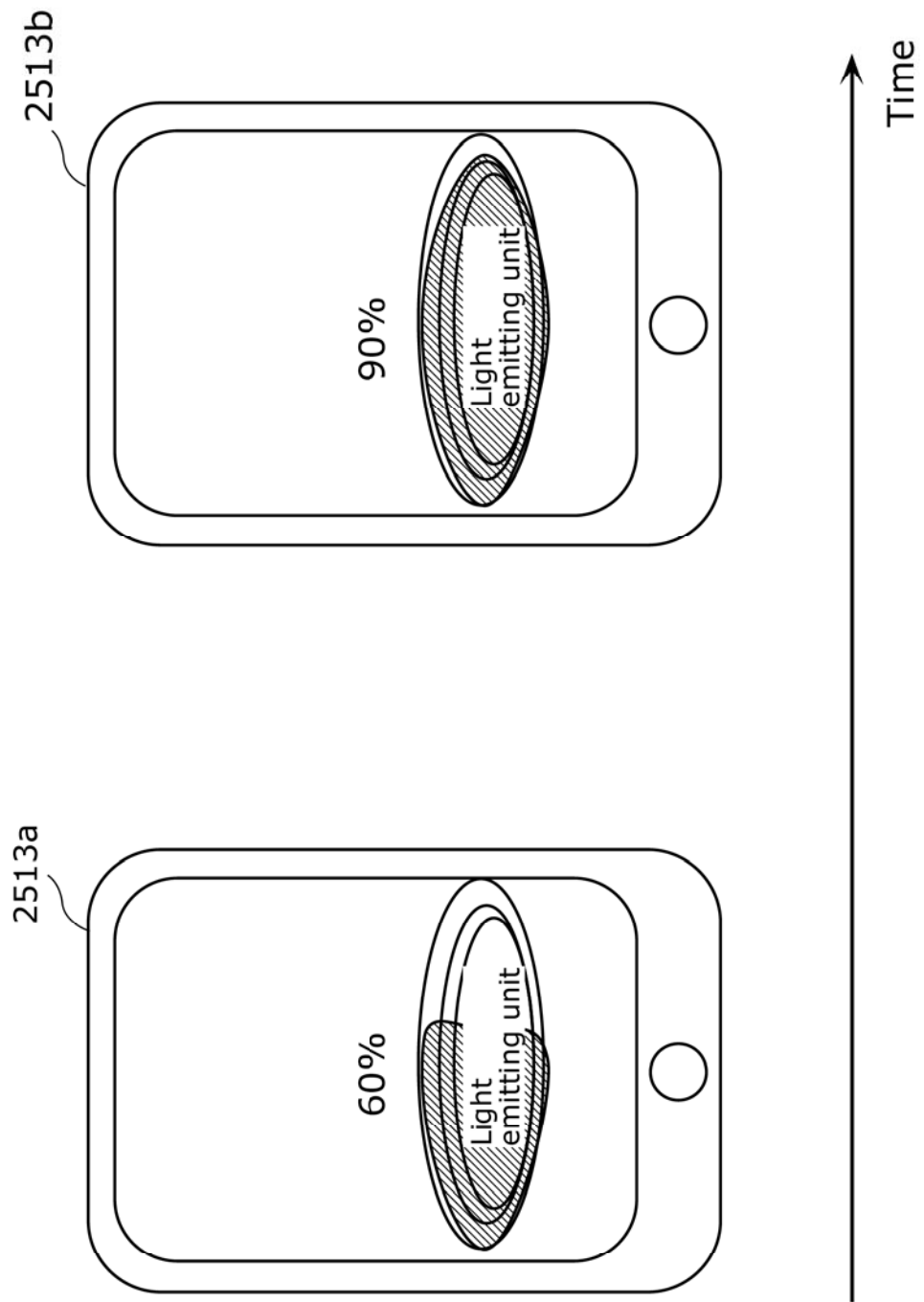


FIG. 88

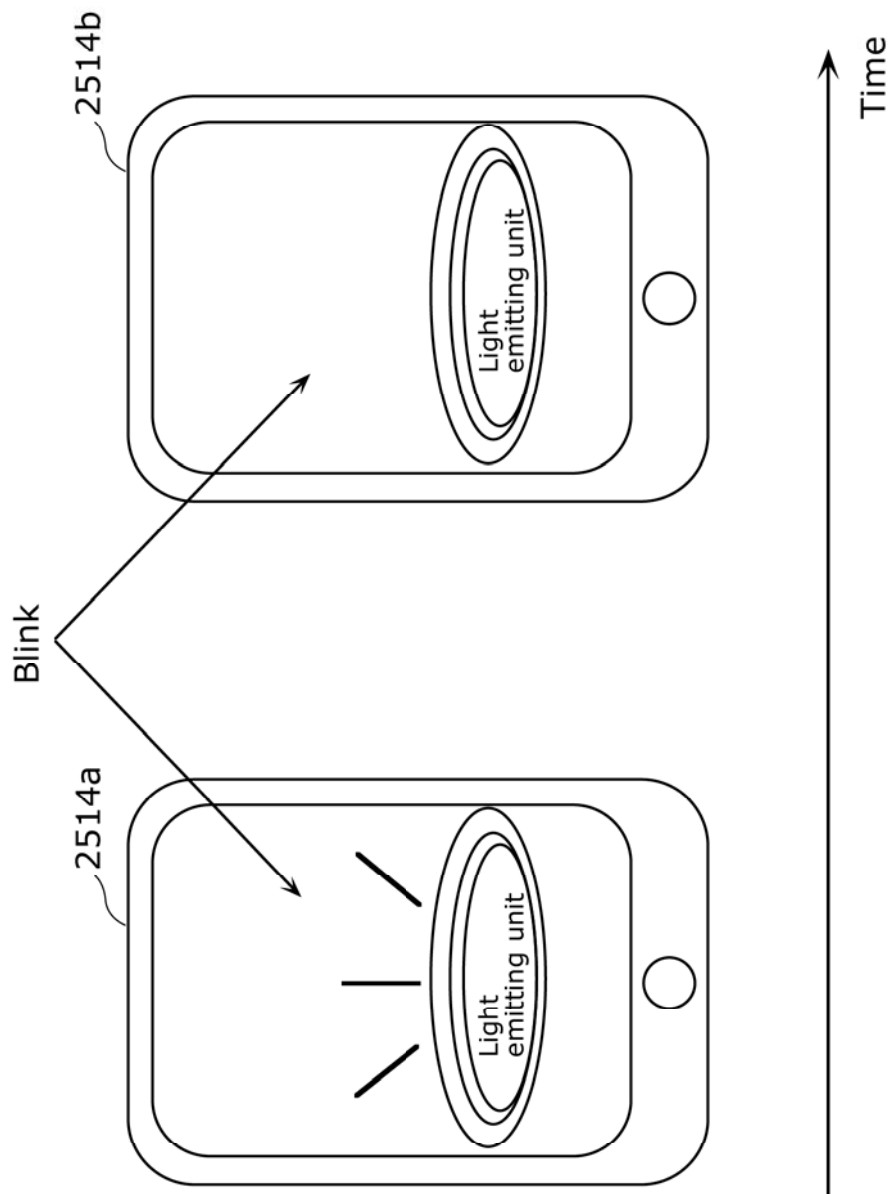


FIG. 89

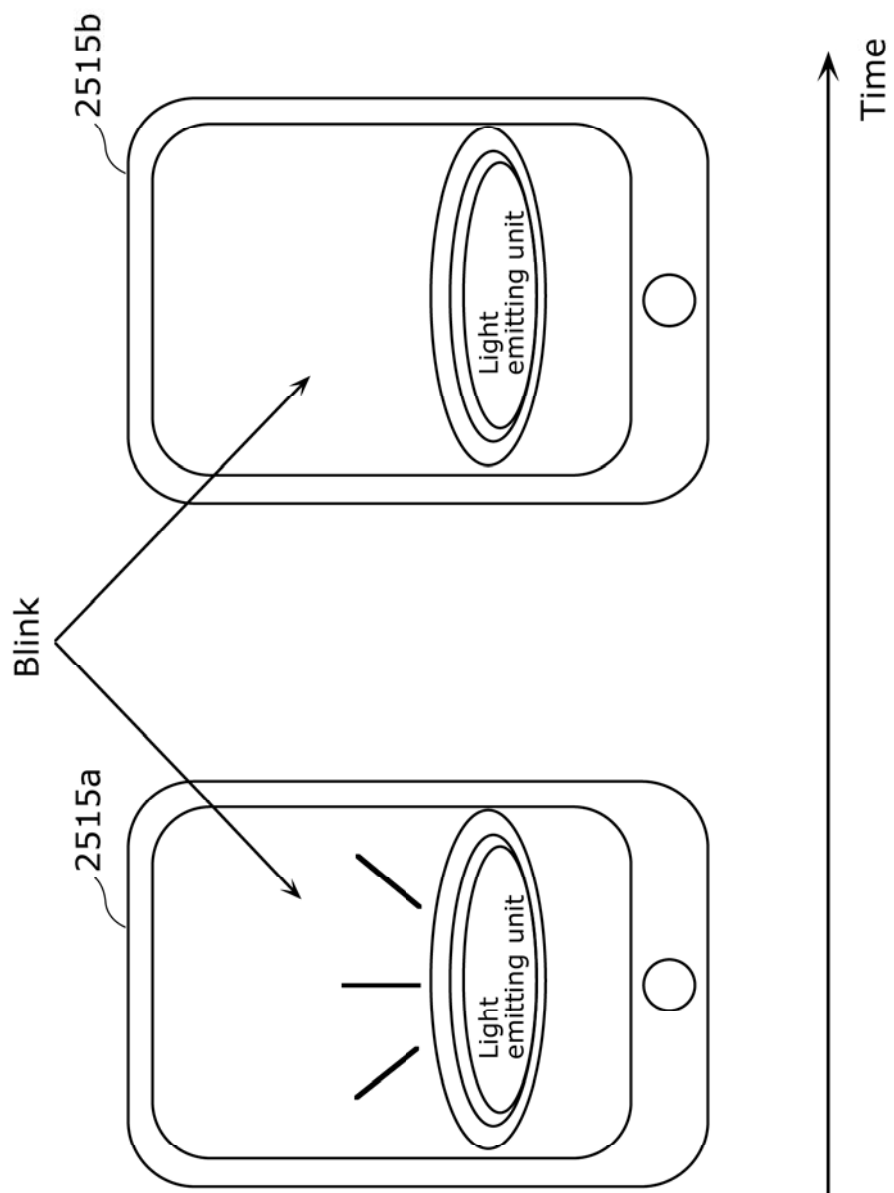


FIG. 90

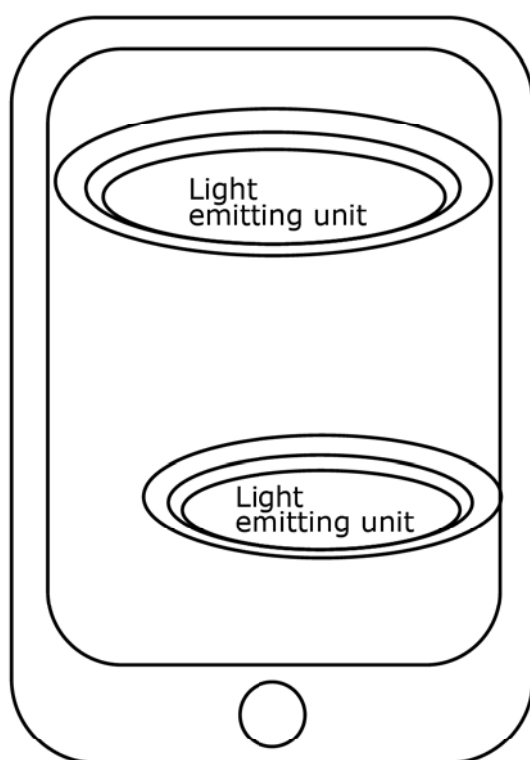


FIG. 91

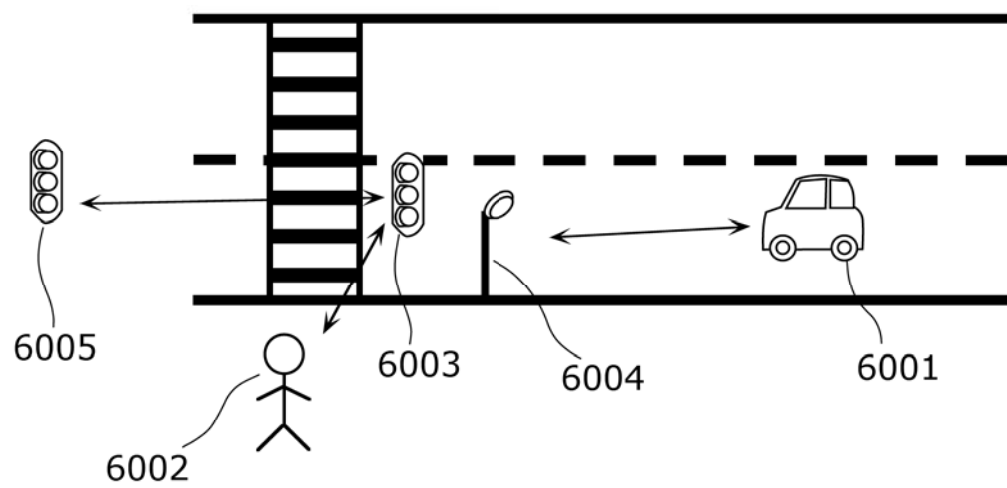


FIG. 92

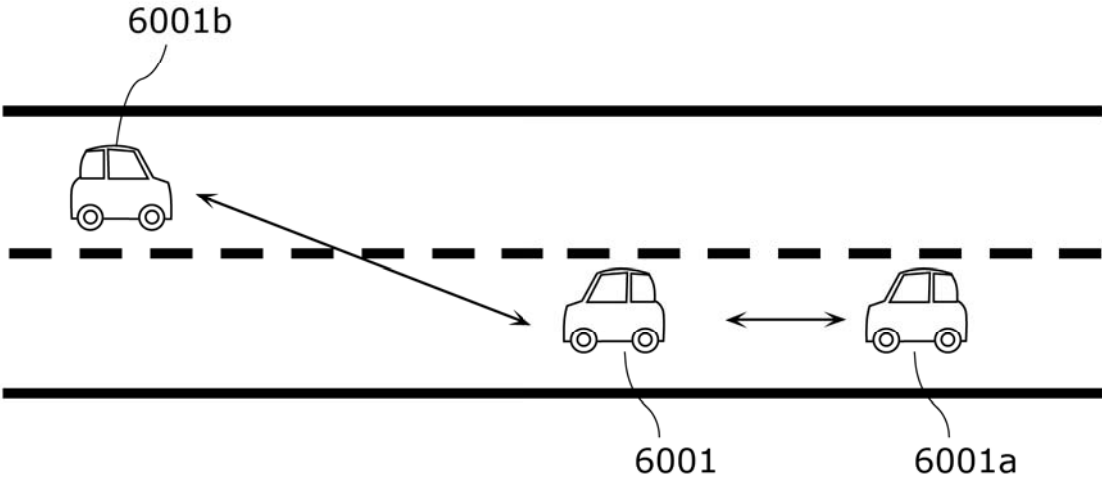




FIG. 93

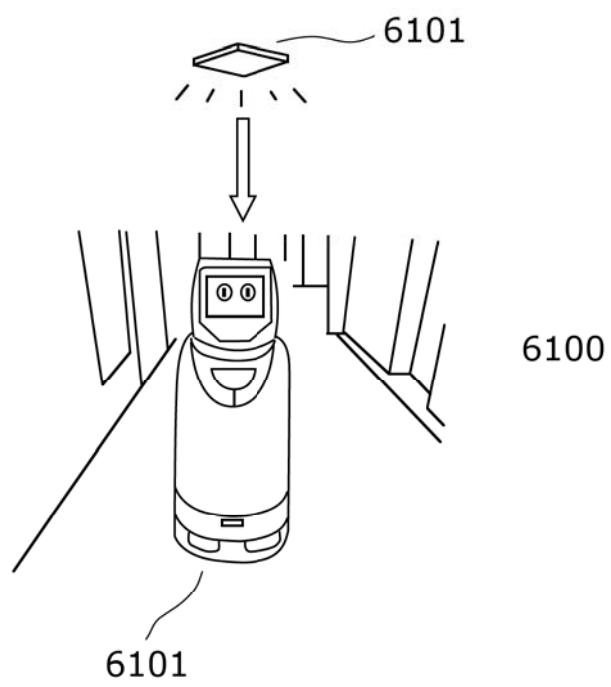


FIG. 94

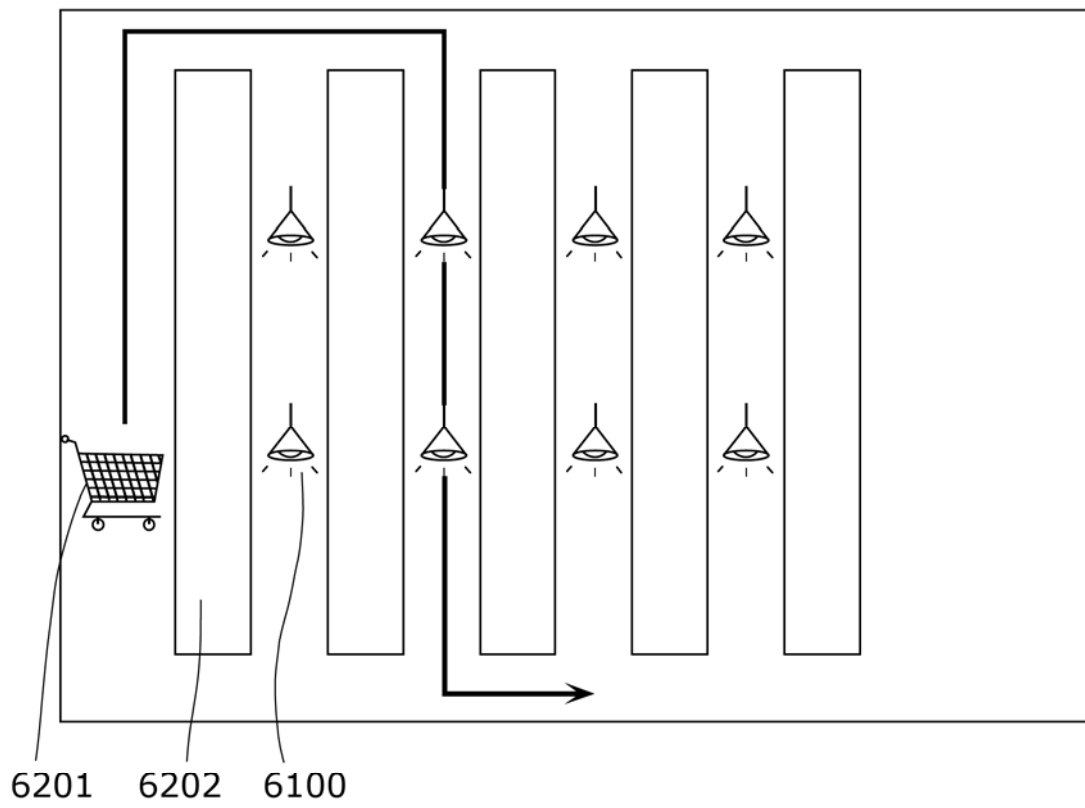


FIG. 95

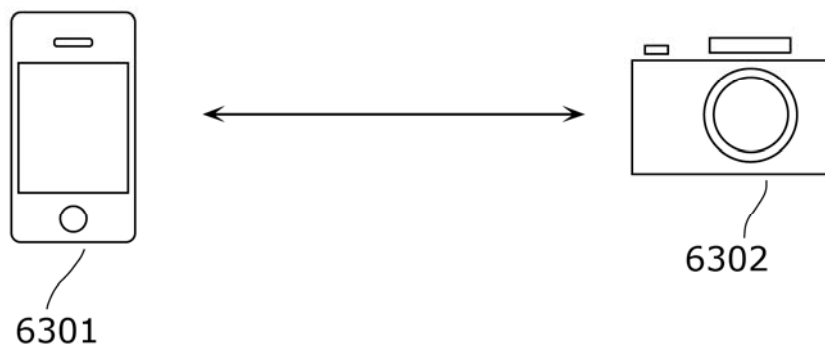


FIG. 96

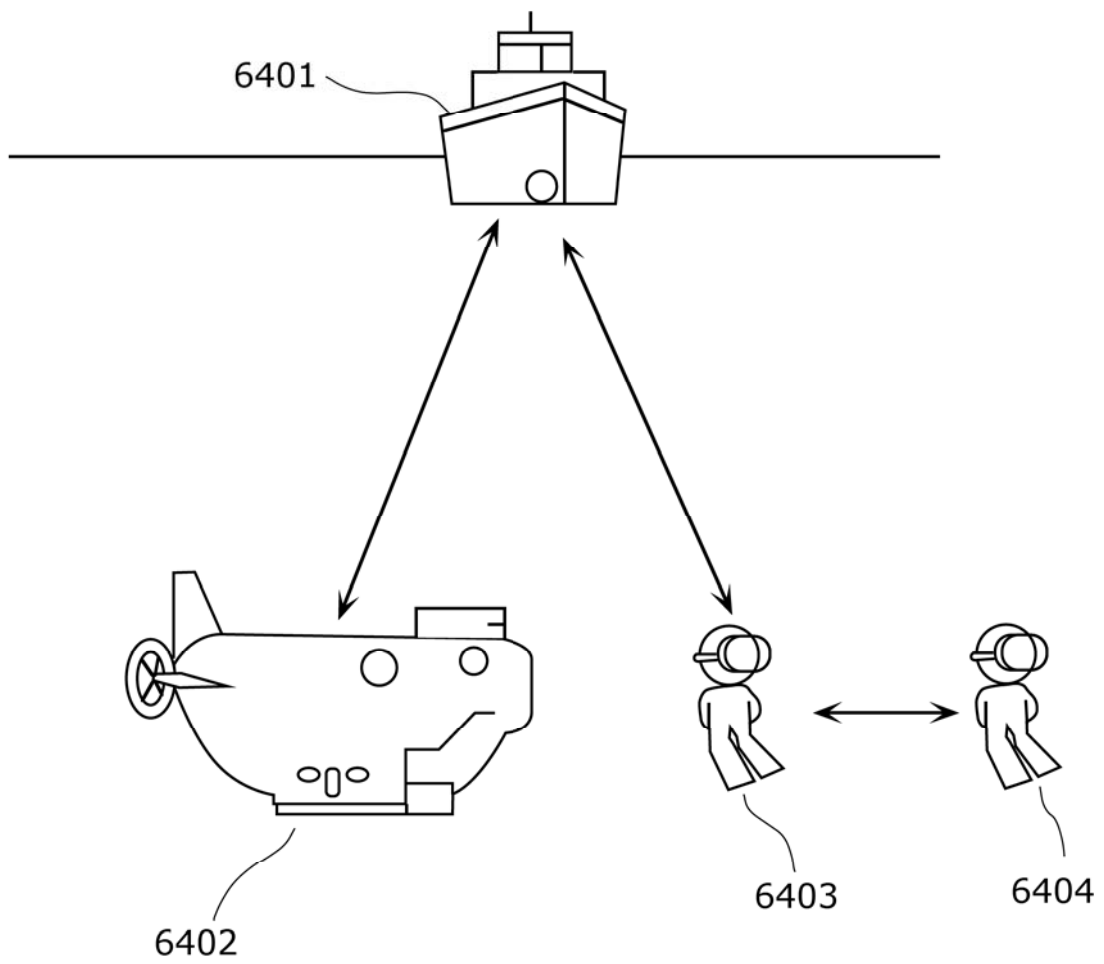


FIG. 97

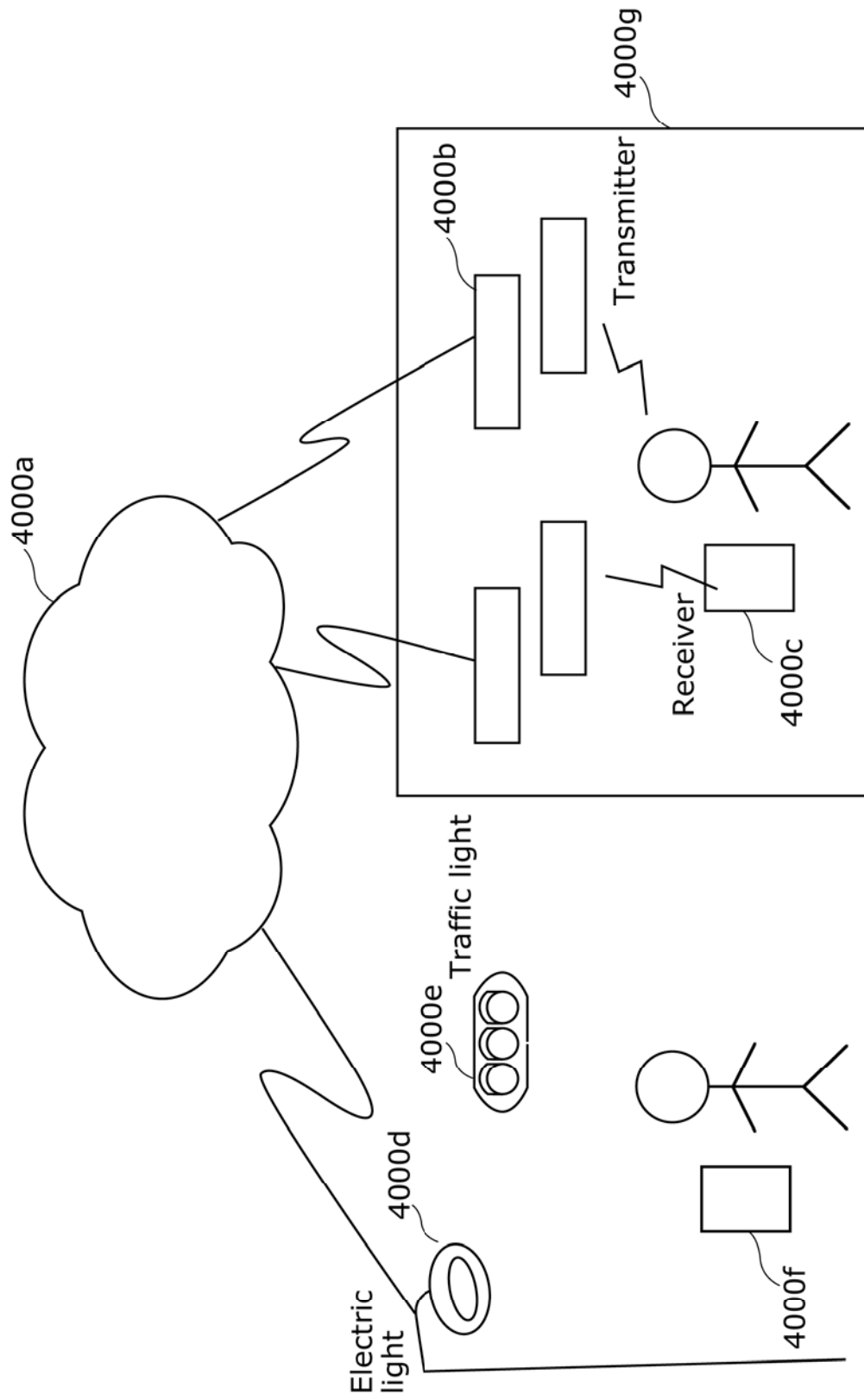


FIG. 98

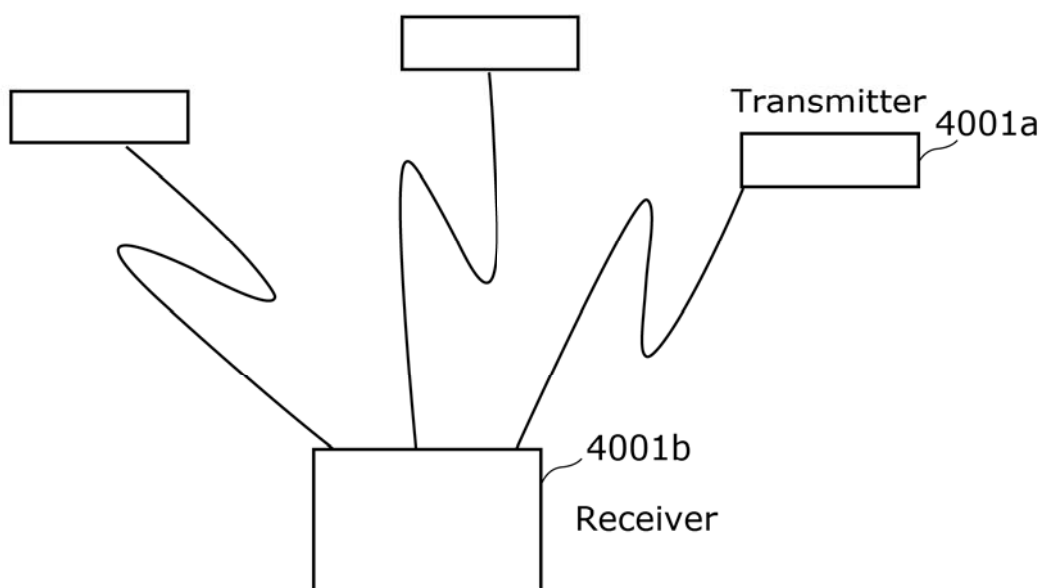


FIG. 99

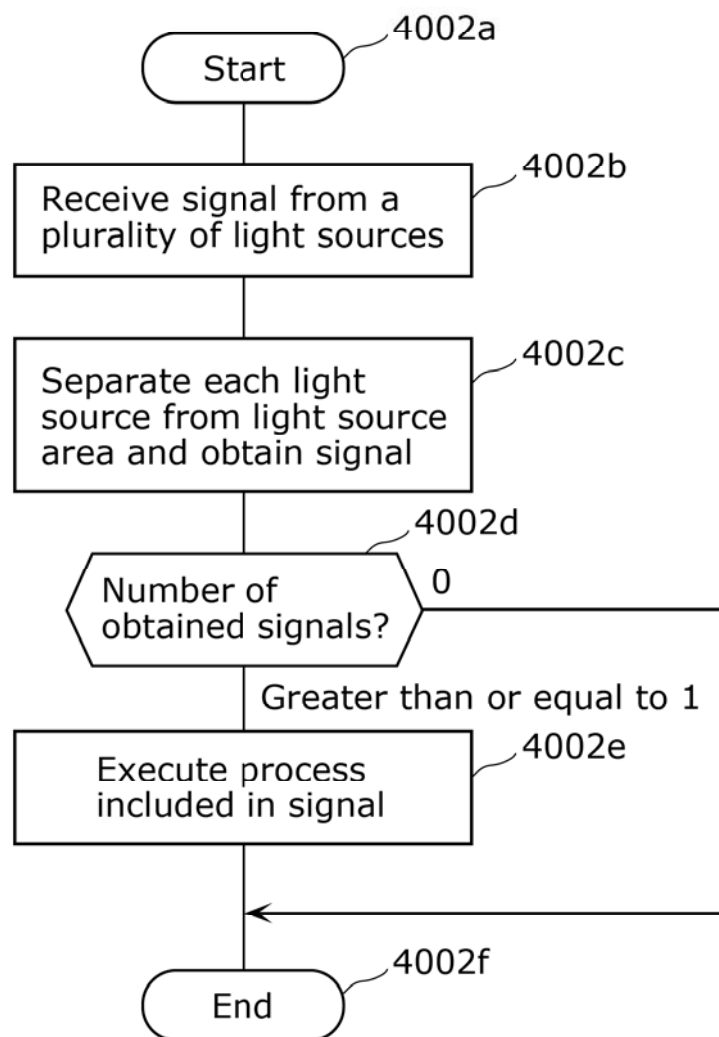


FIG. 100

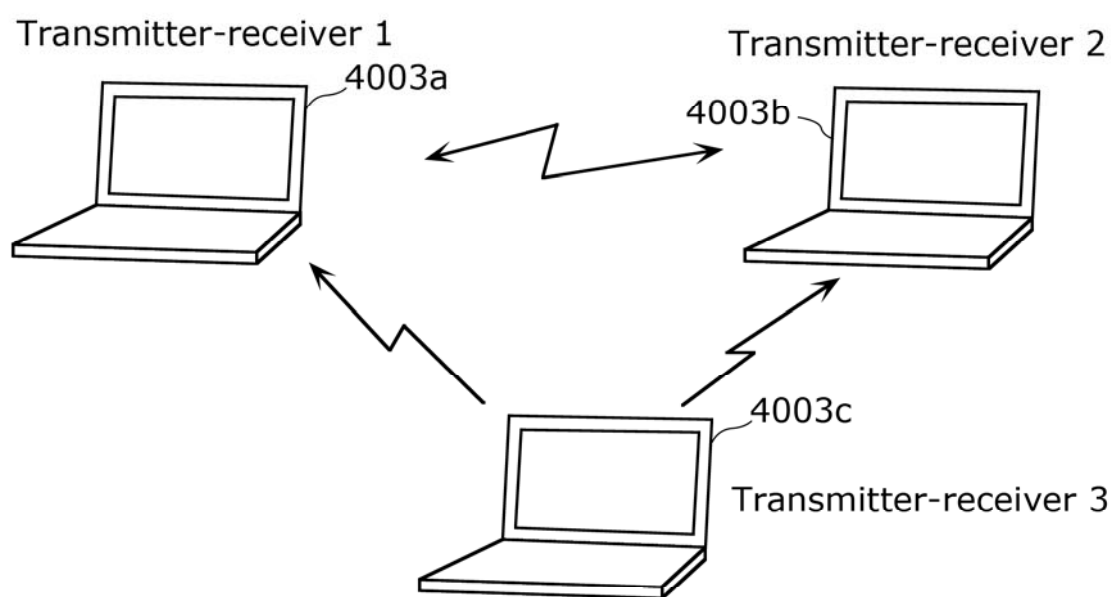




FIG. 101

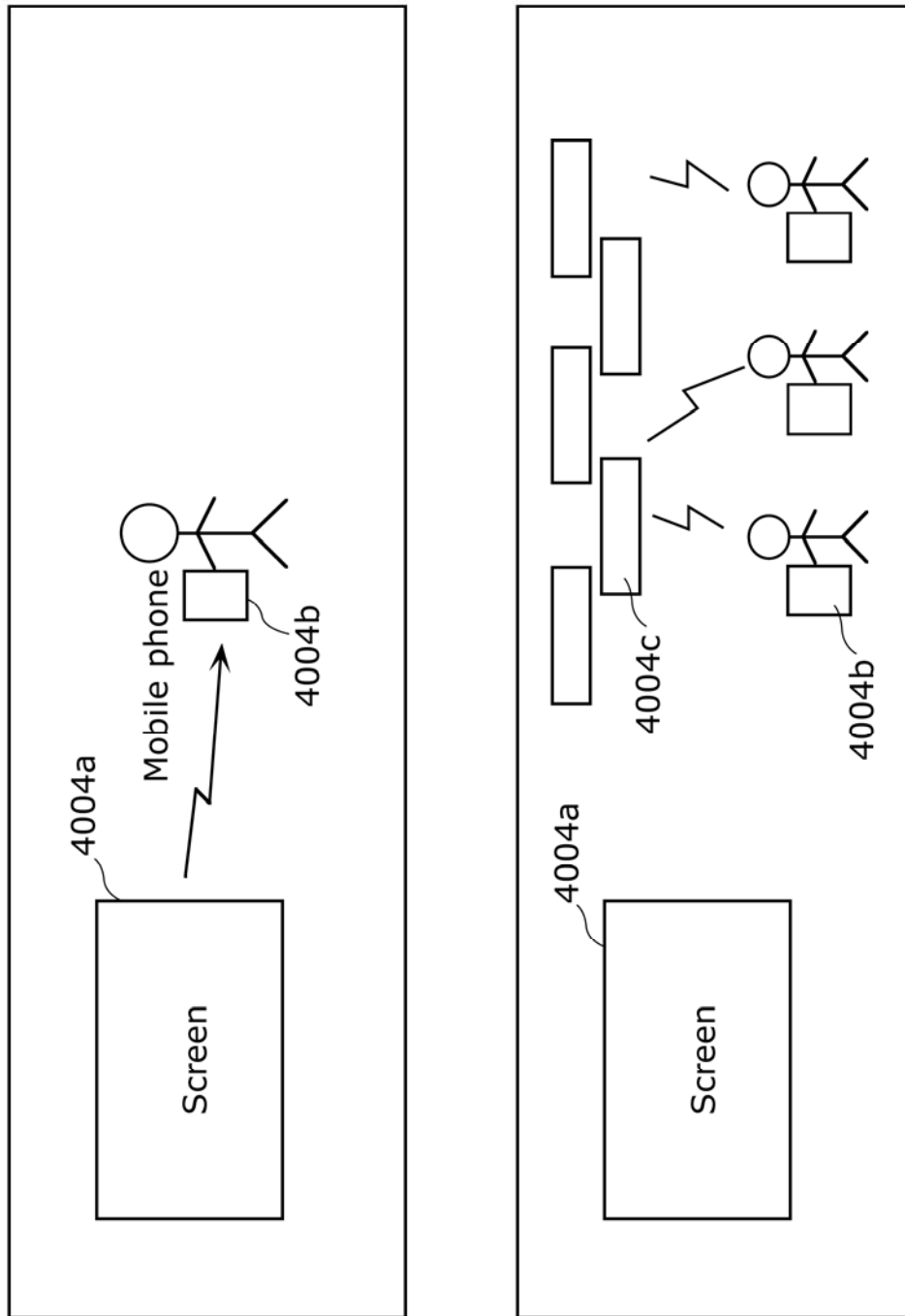


FIG. 102

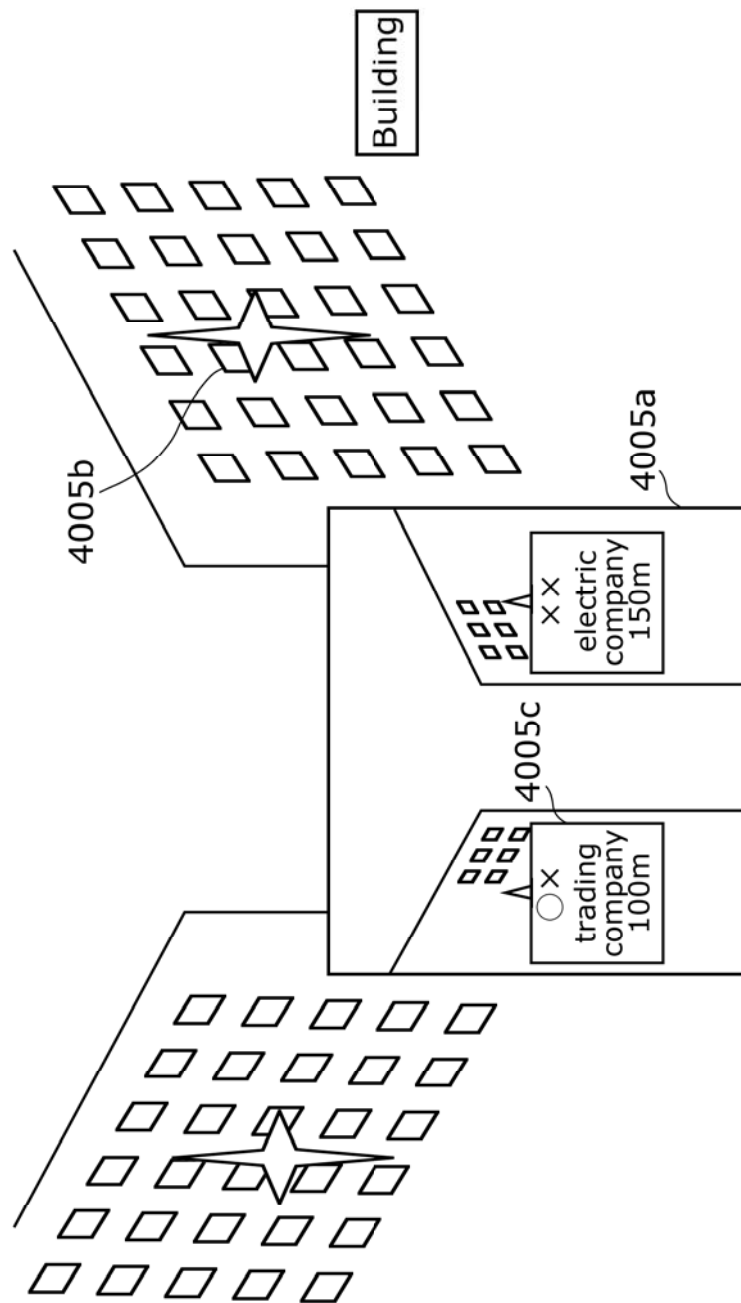


FIG. 103

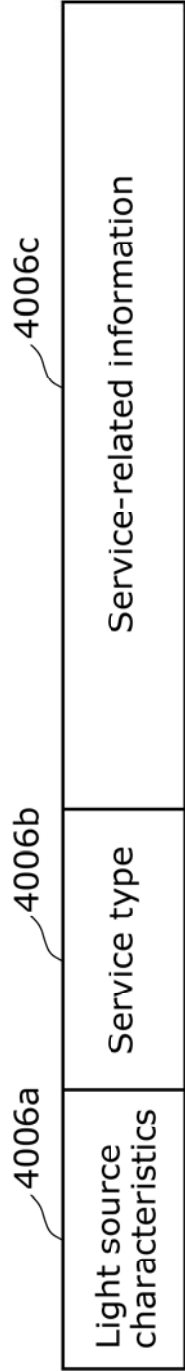


FIG. 104

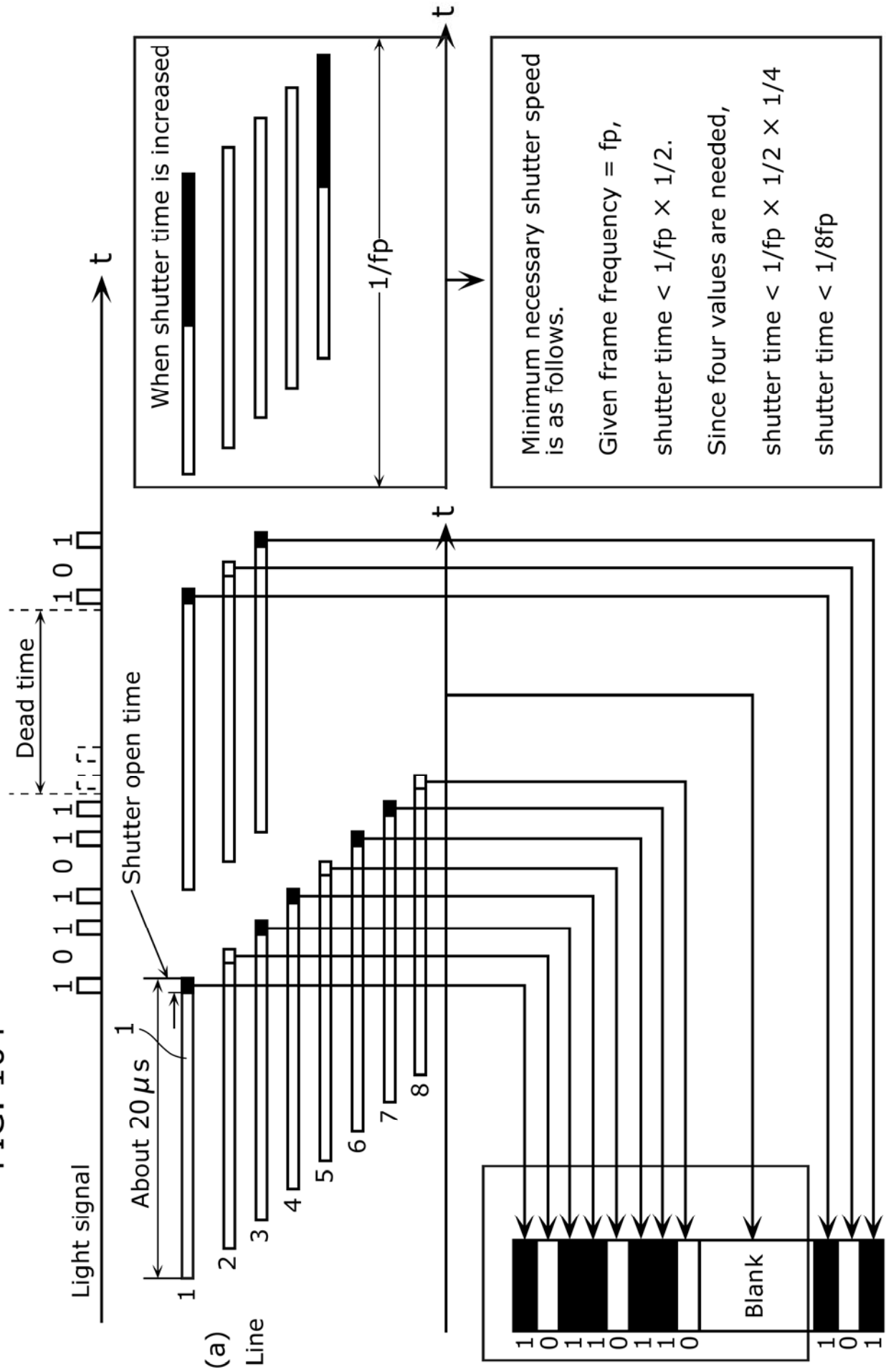


FIG. 105

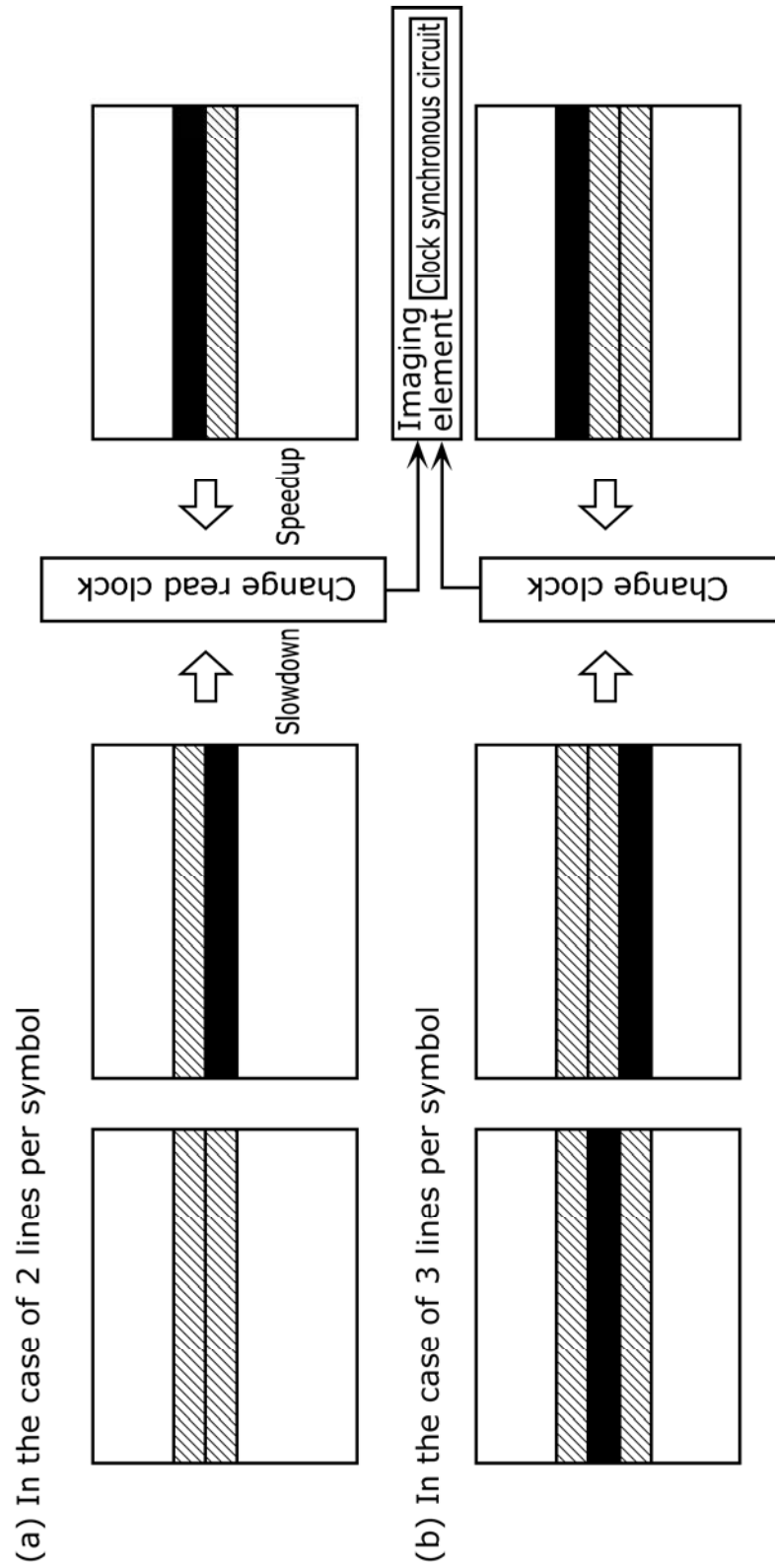


FIG. 106

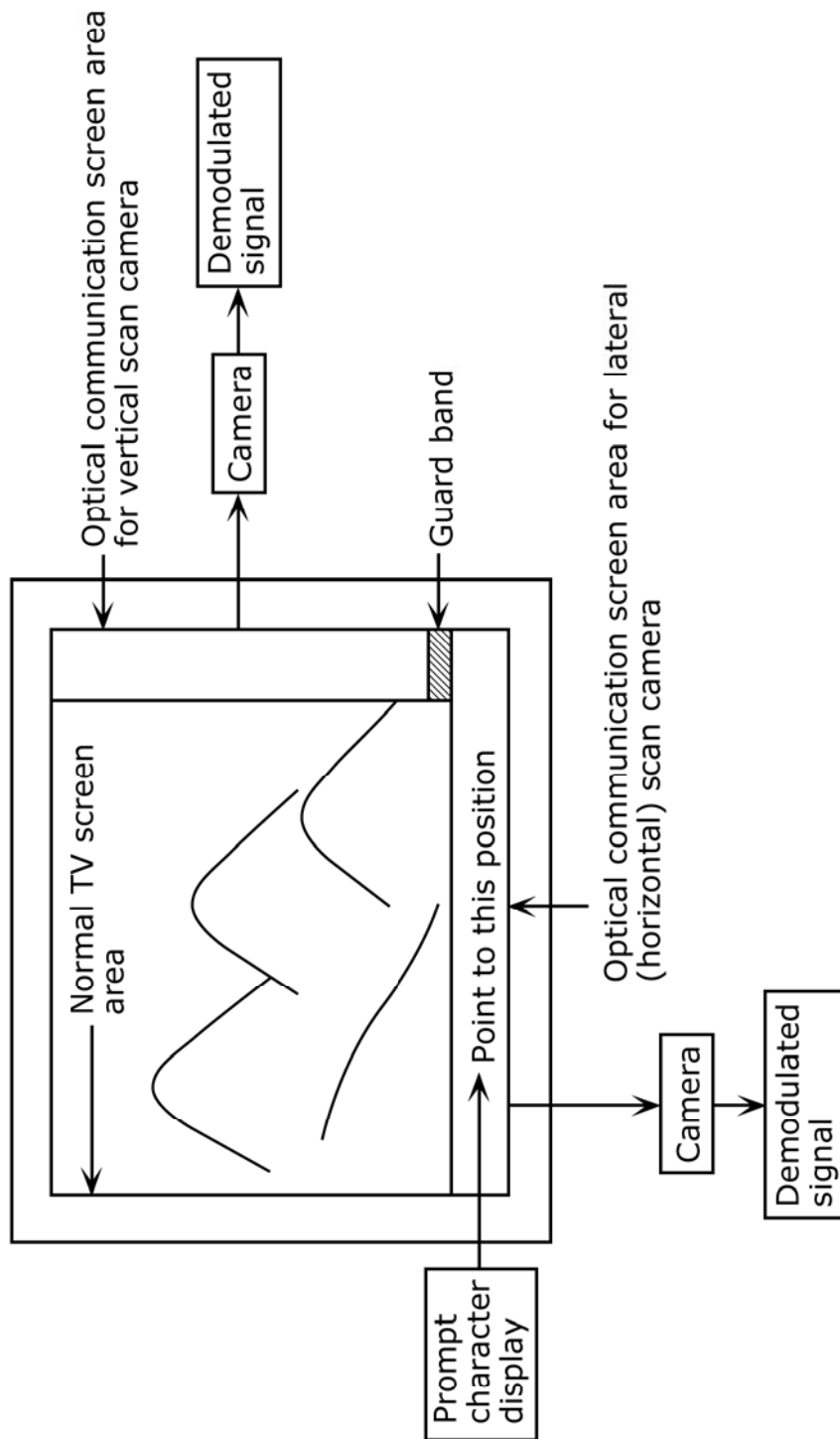


FIG. 107

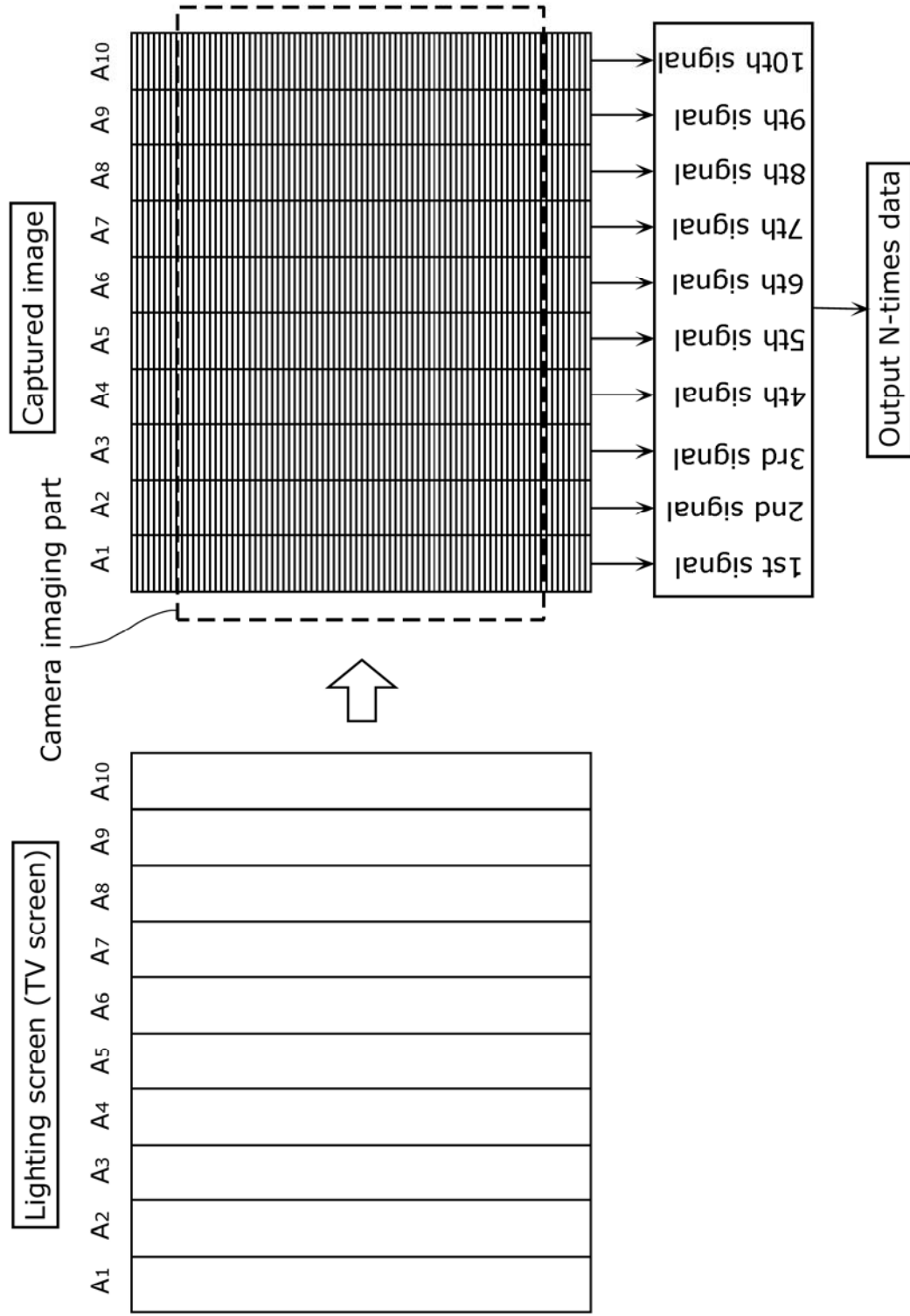


FIG. 108

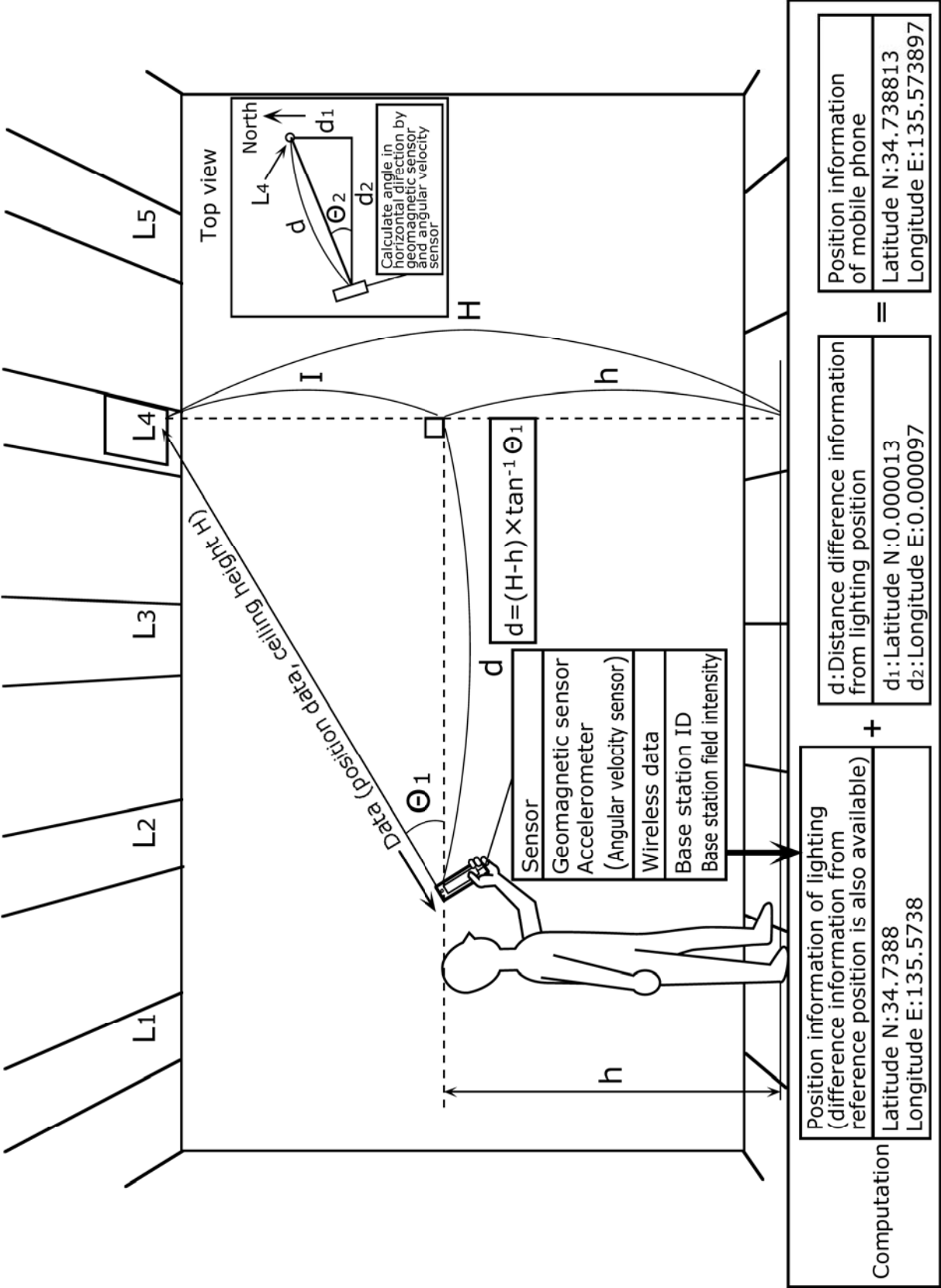




FIG. 109A

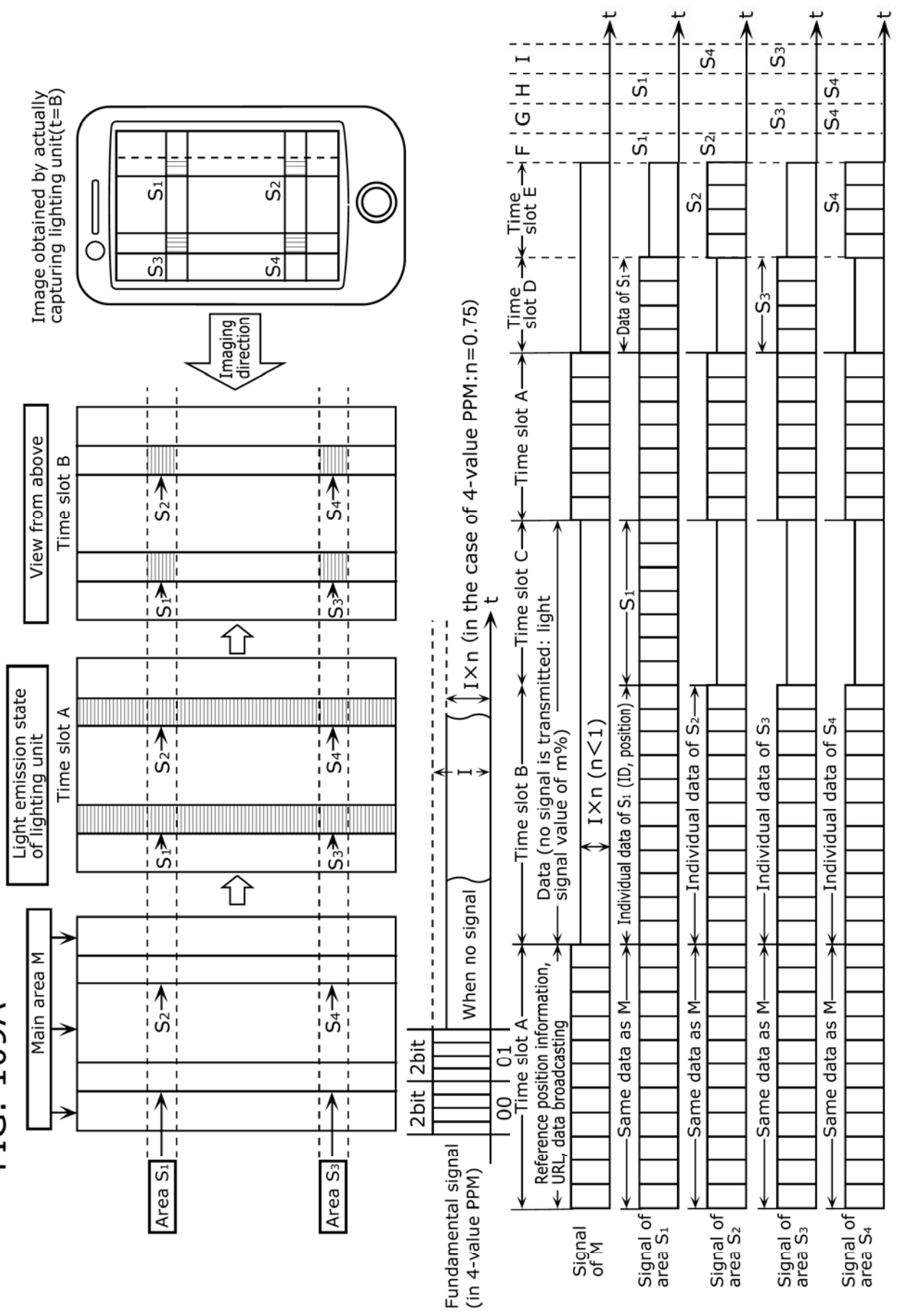


FIG. 109B

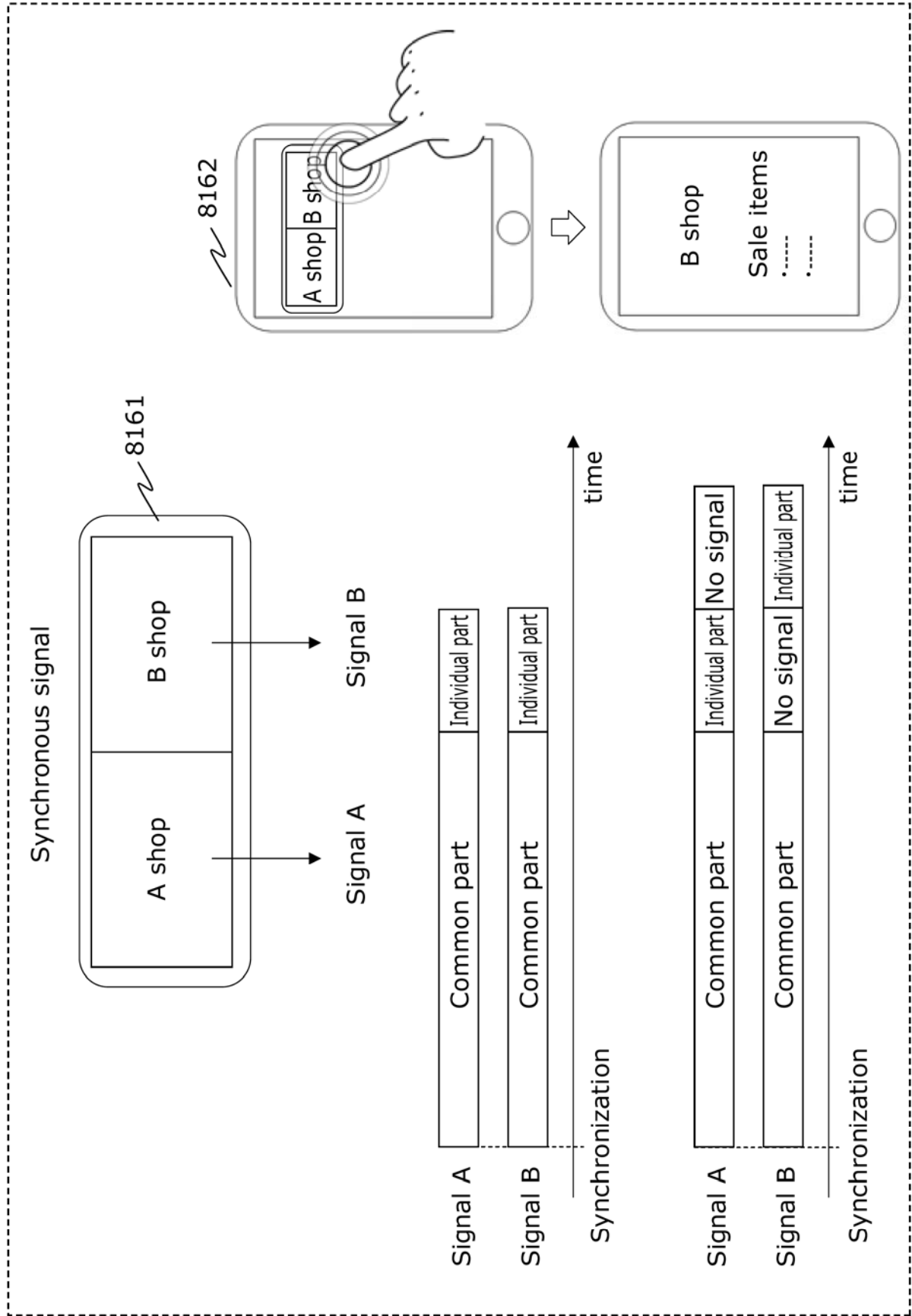


FIG. 109C

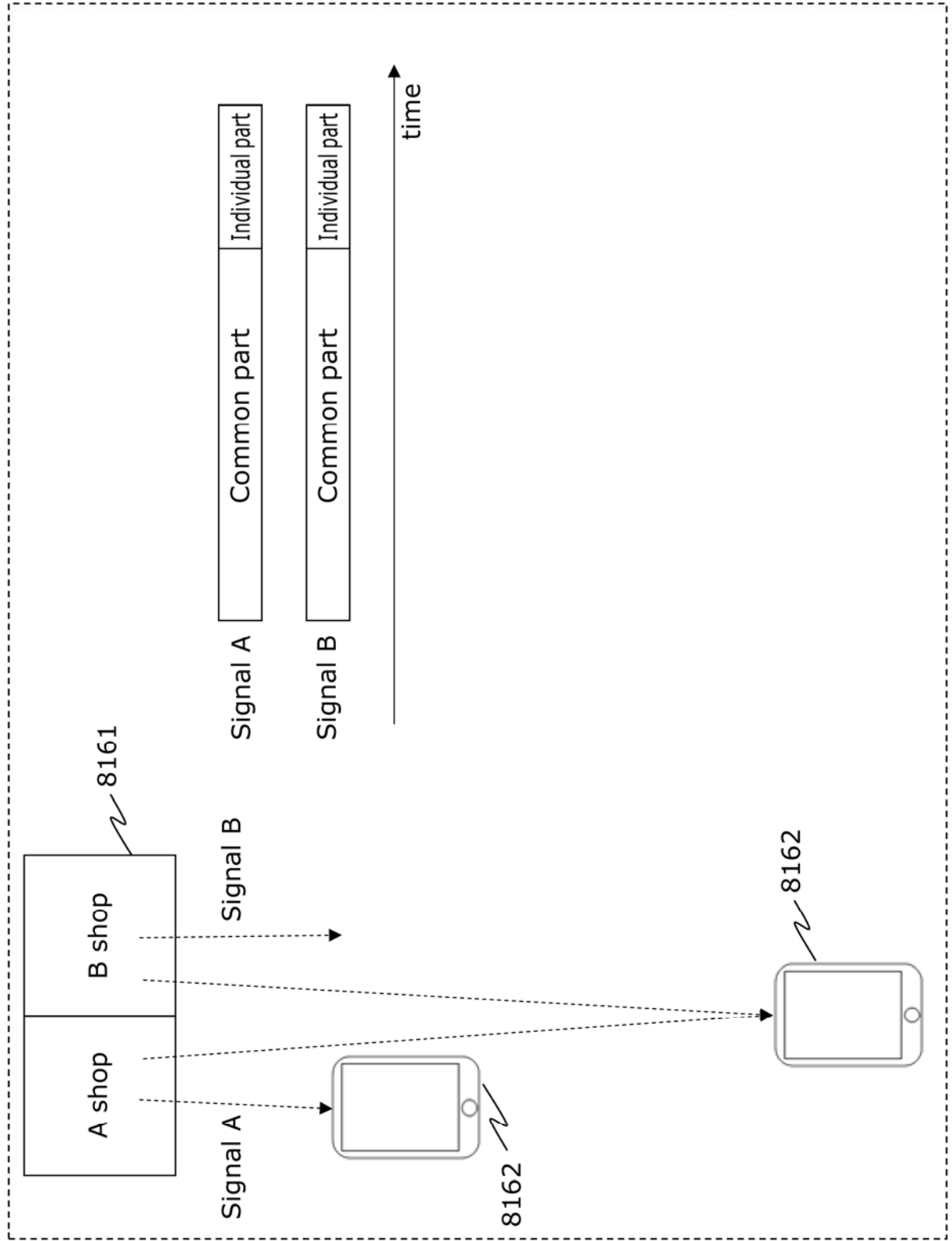


FIG. 110

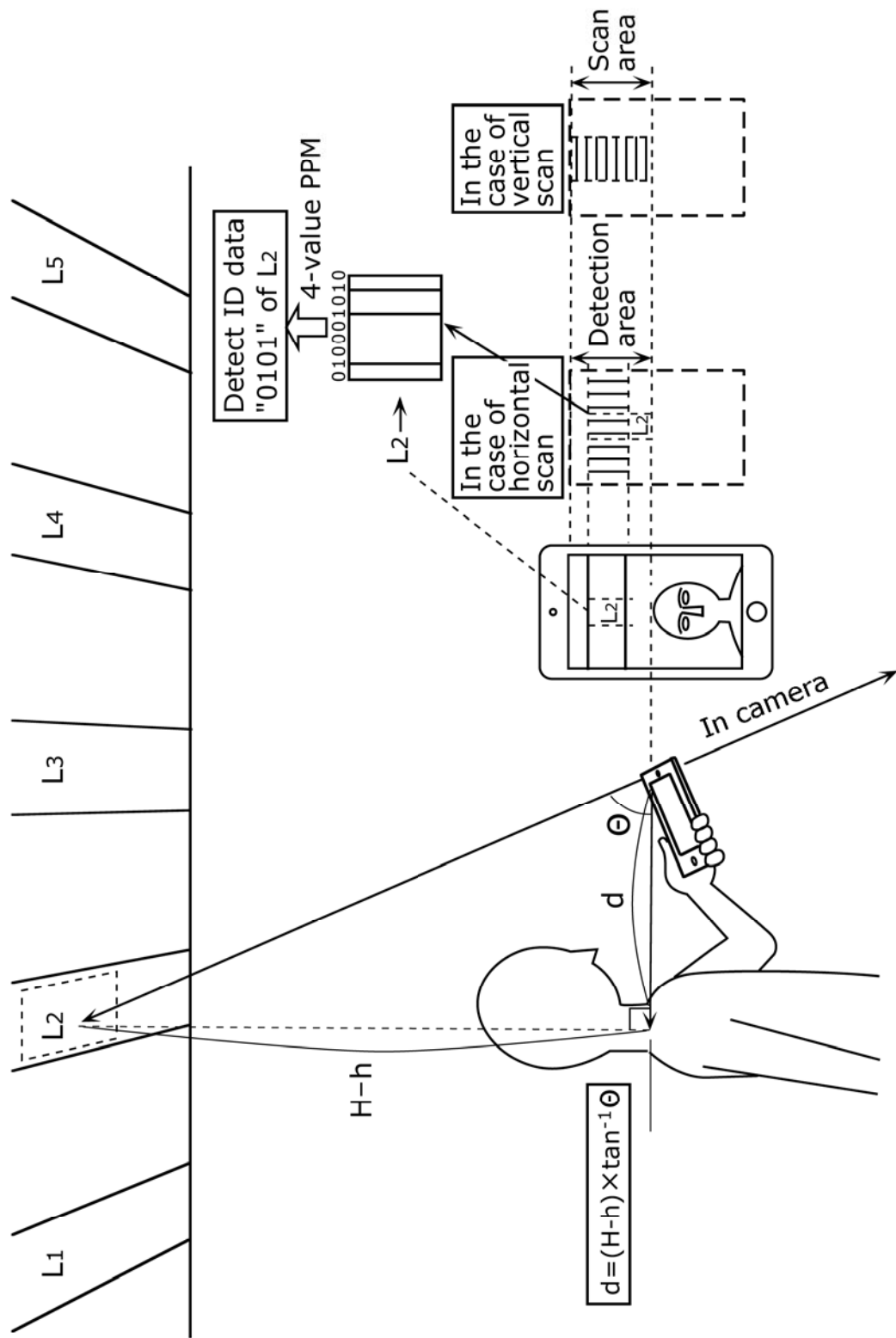


FIG. 111

L0: Transmission of common data: reference position information (latitude, longitude), ceiling height information, server URL, room shape information, difference information between ID number of each individual lighting and reference position information or relative position information or arrangement information of each ID, area-specific data broadcasting

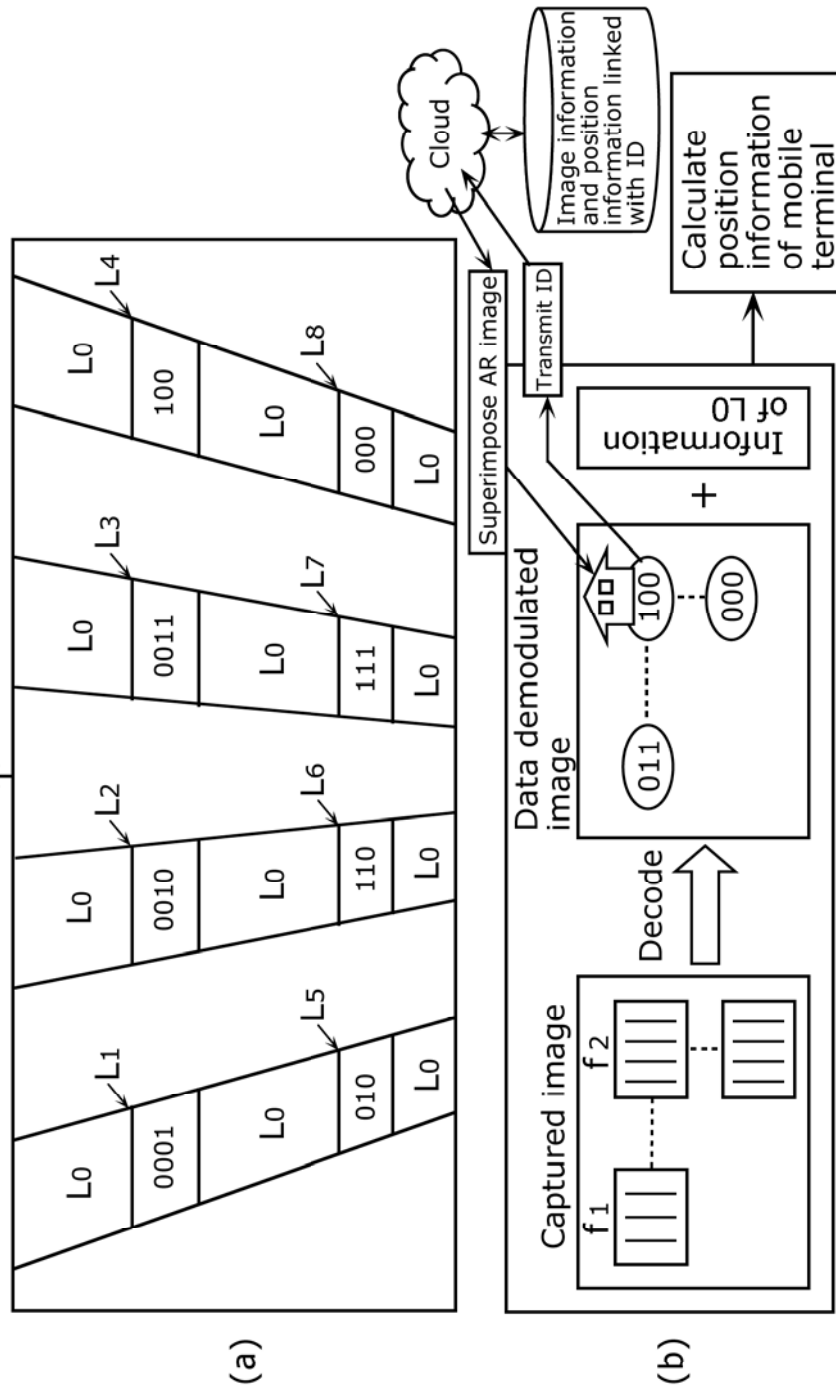


FIG. 112

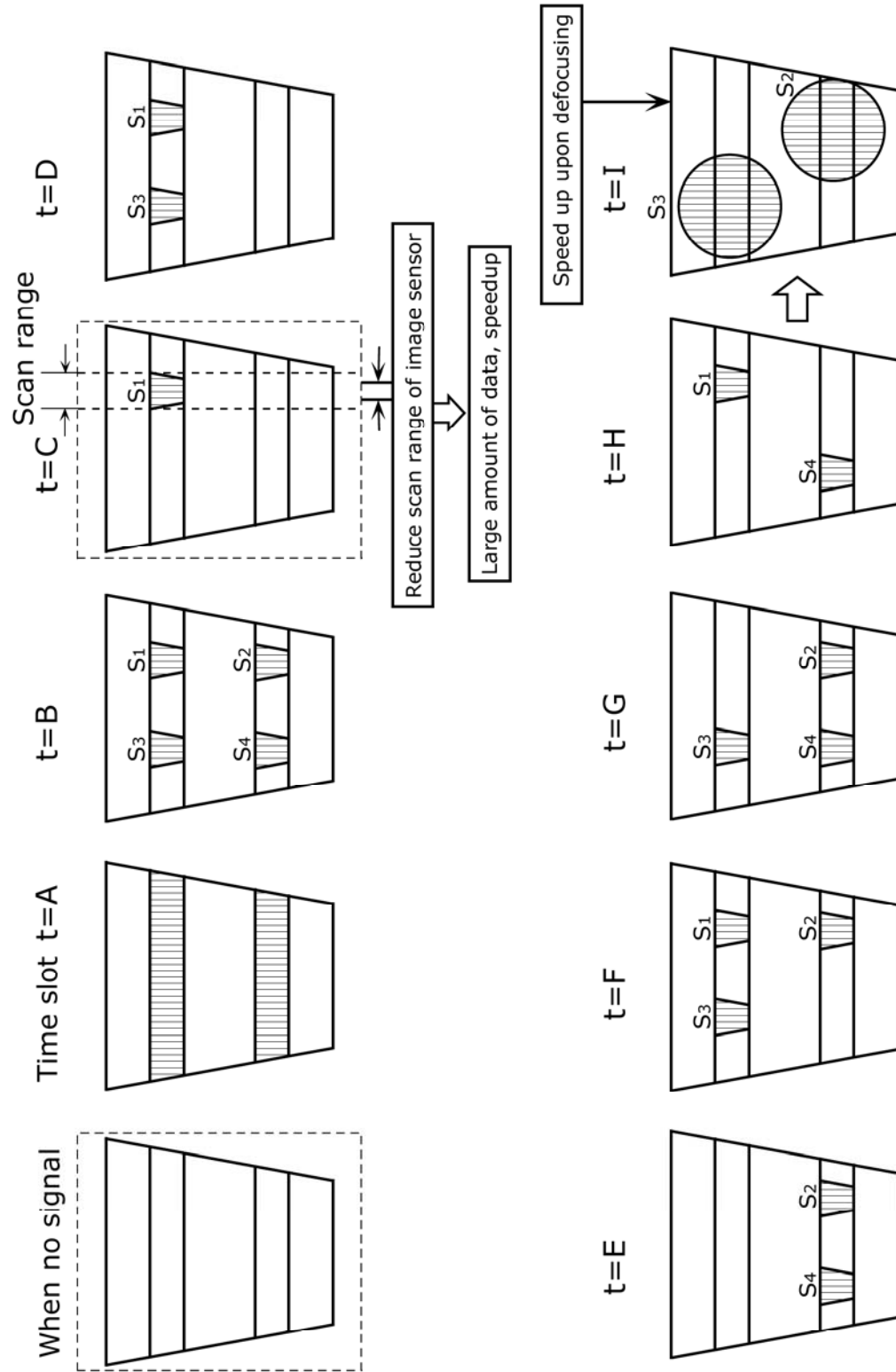


FIG. 113

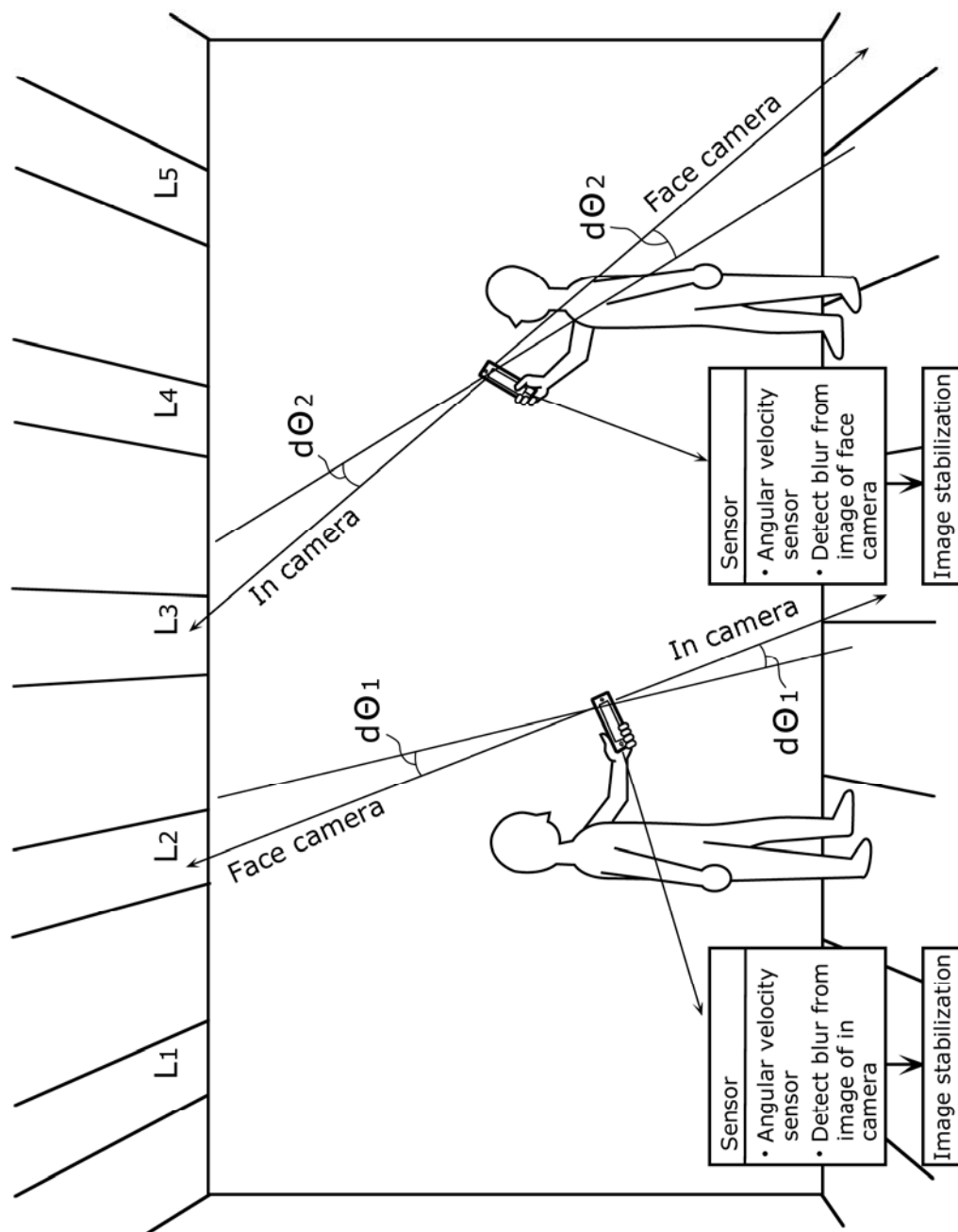


FIG. 114

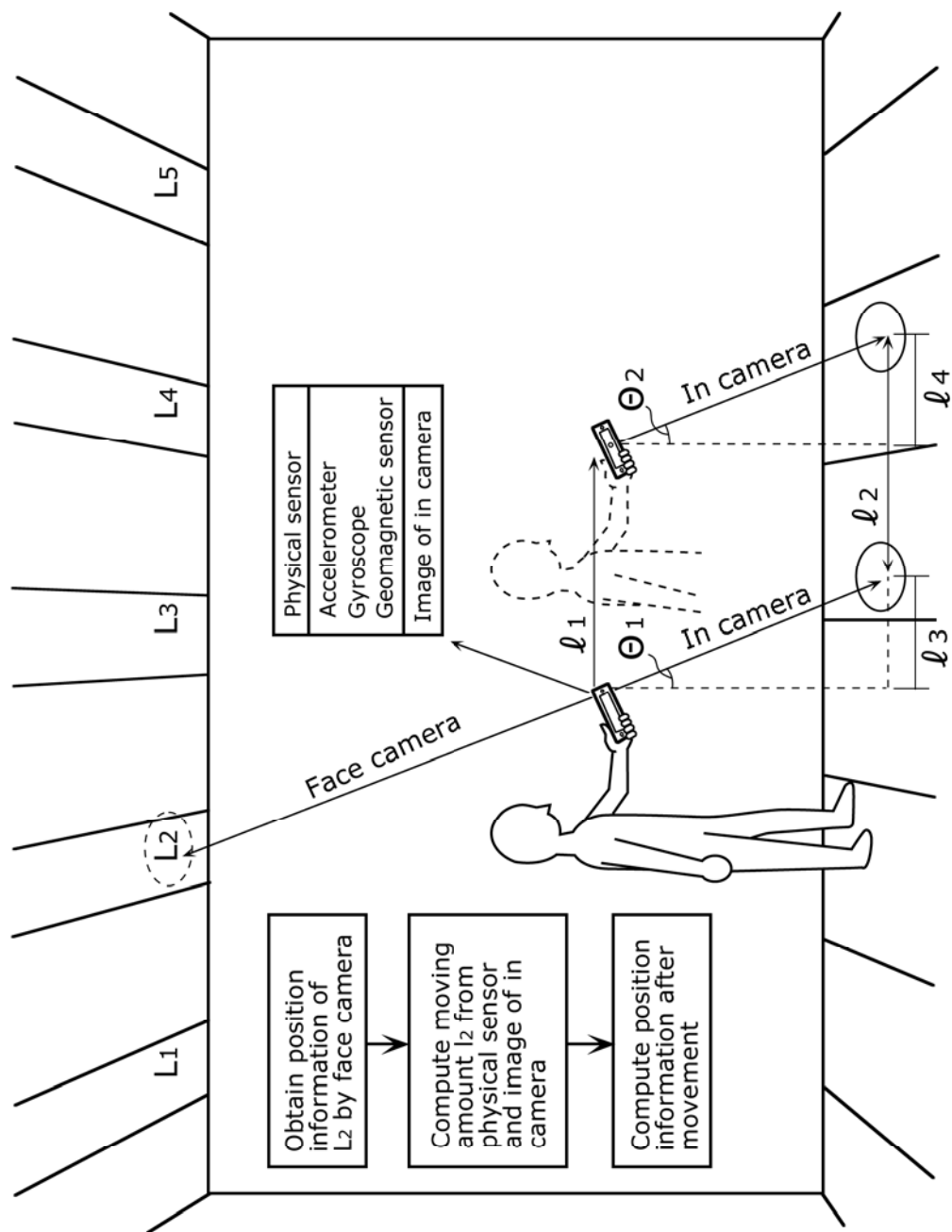




FIG. 115

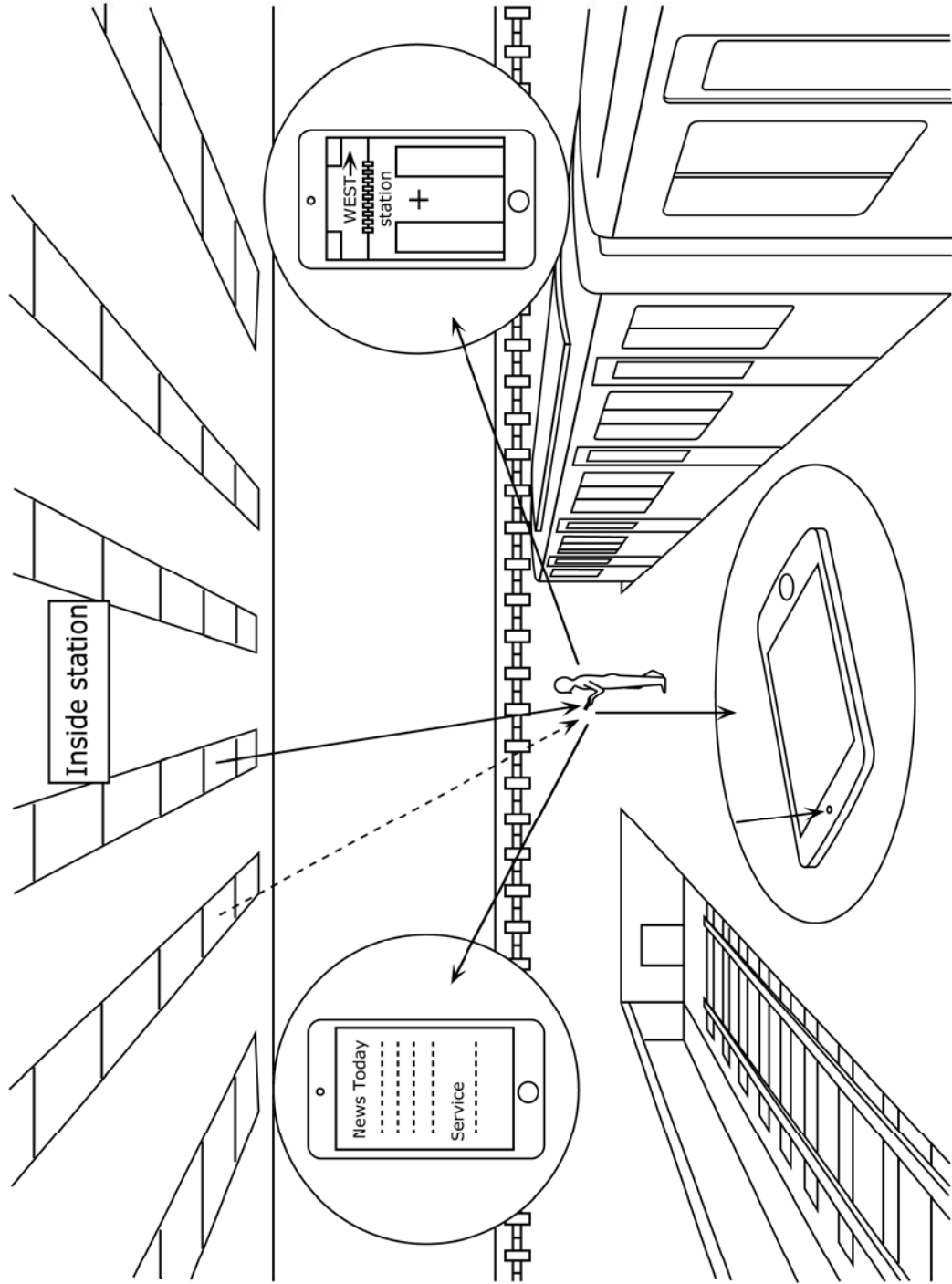


FIG. 116

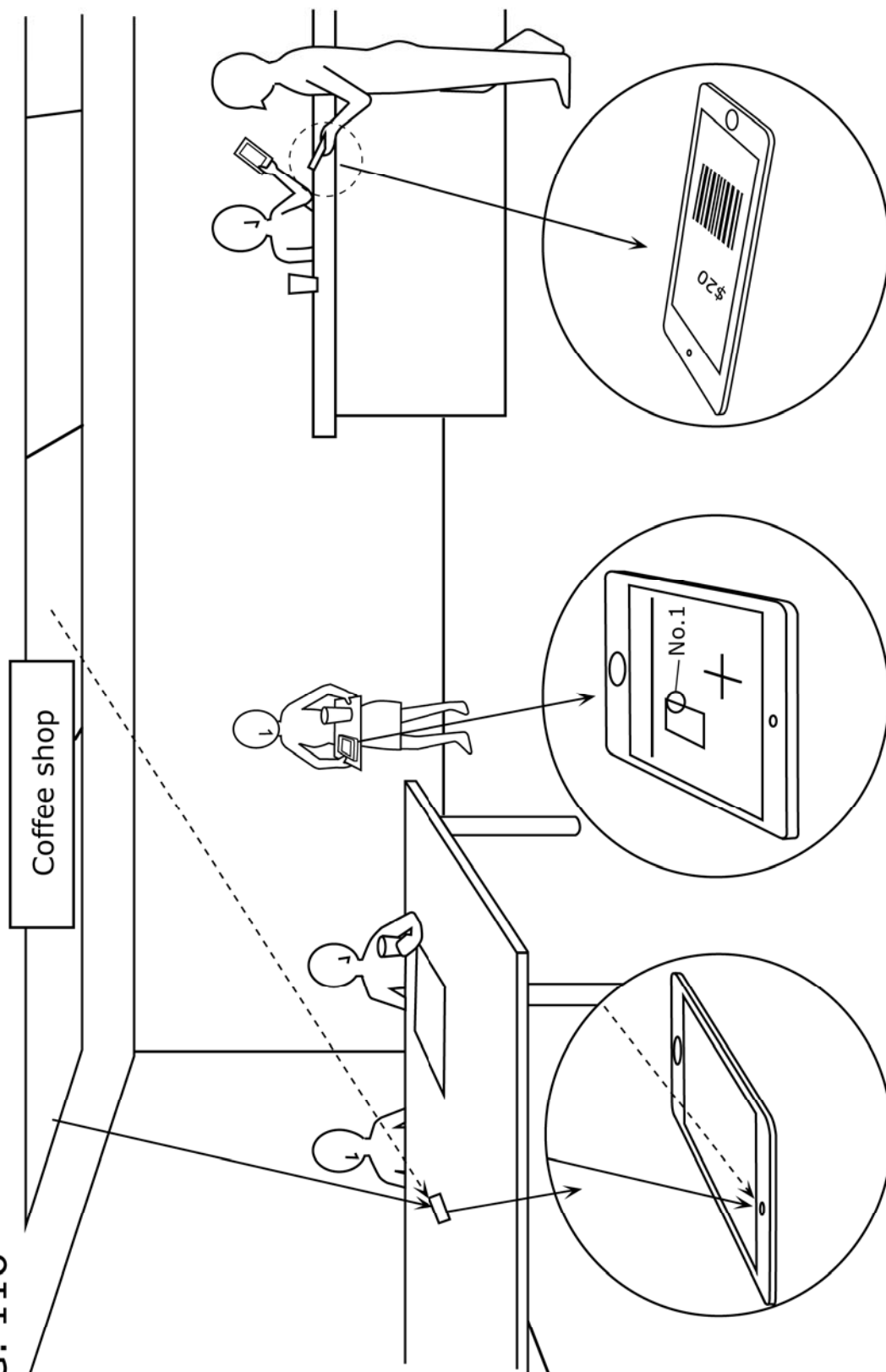


FIG. 117

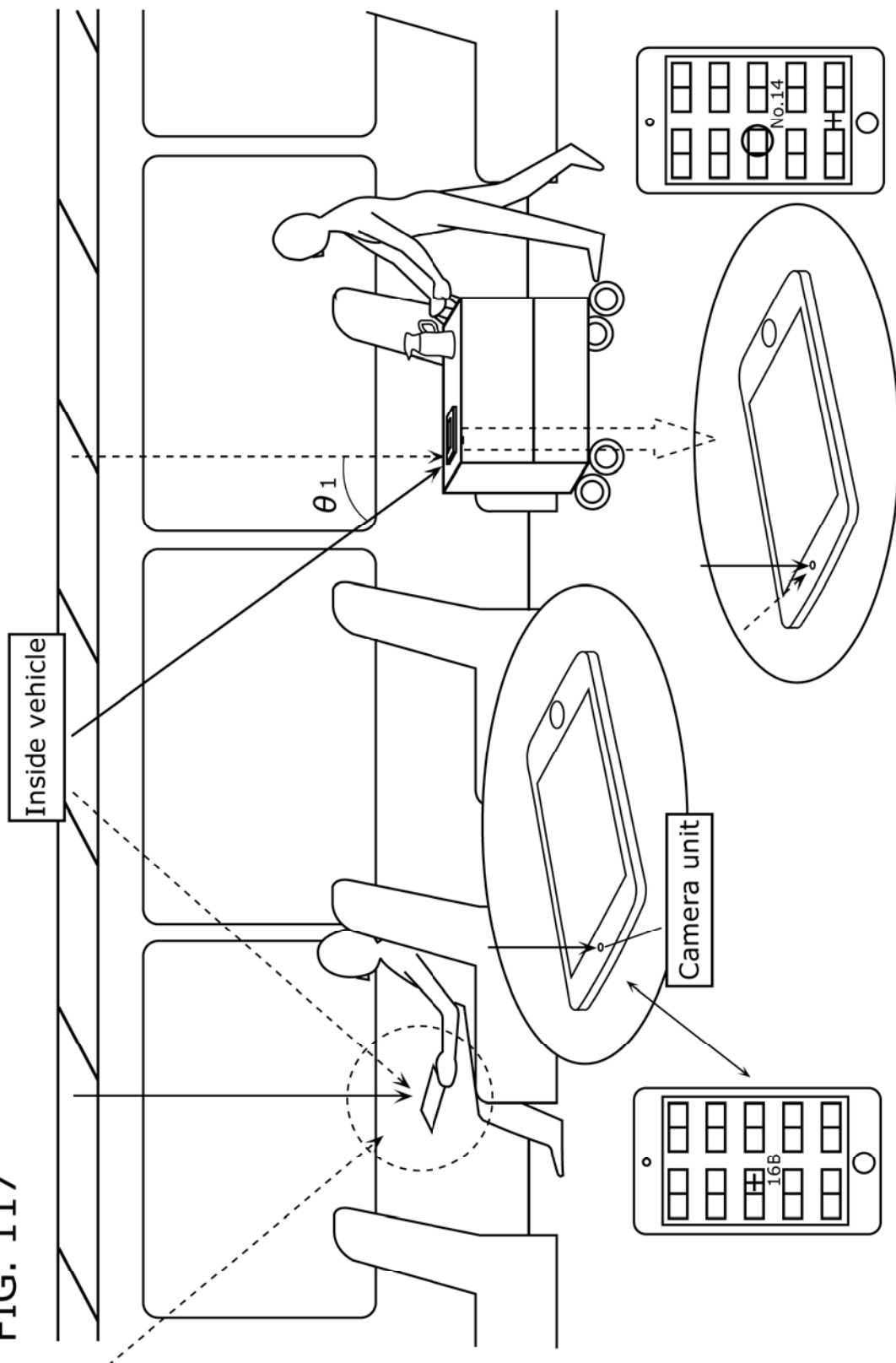


FIG. 118

In the case of 1bit per symbol

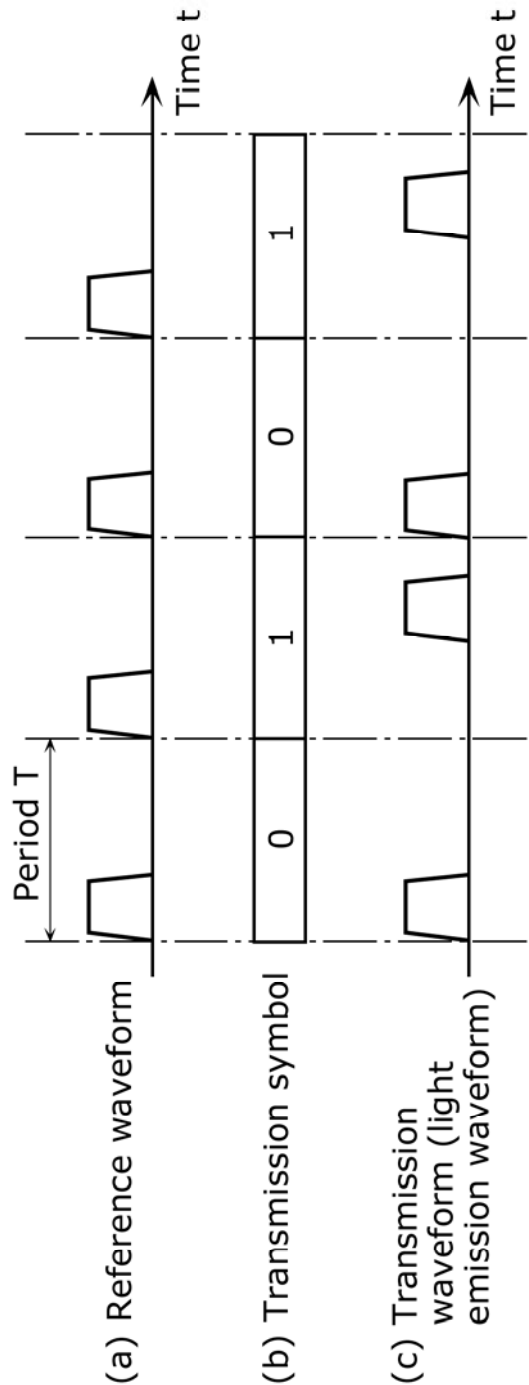


FIG. 119

In the case of symbol  $0 \rightarrow 0$

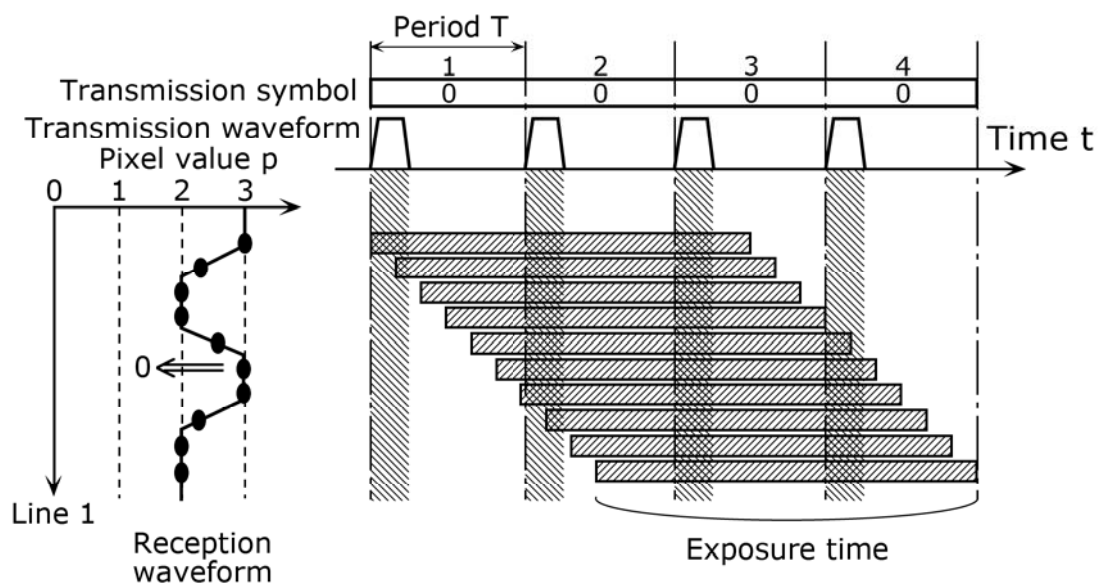


FIG. 120

In the case of symbol  $0 \rightarrow 1$

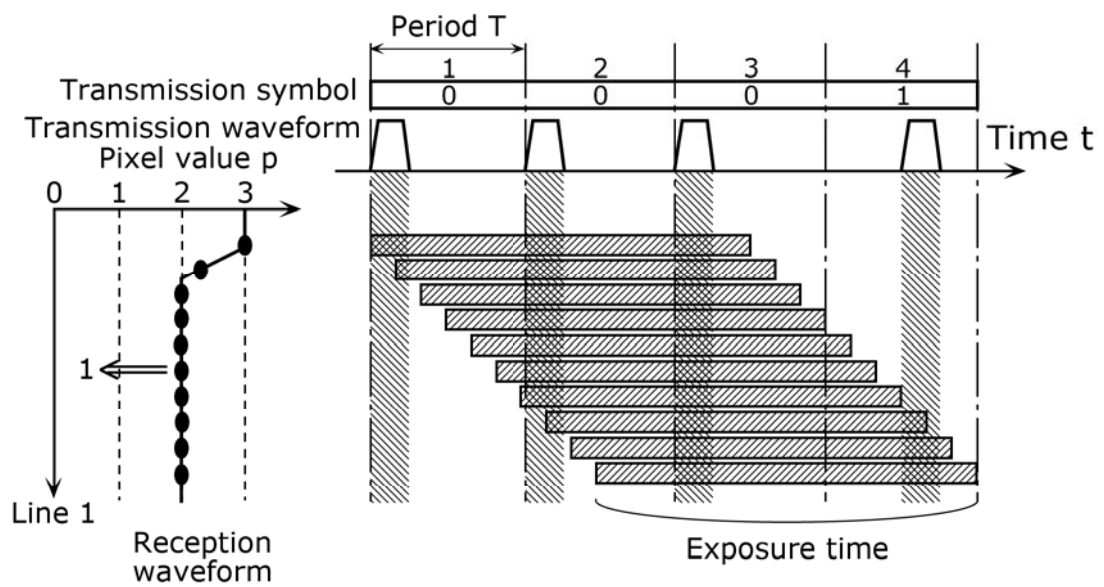


FIG. 121

In the case of symbol 1  $\rightarrow$  0

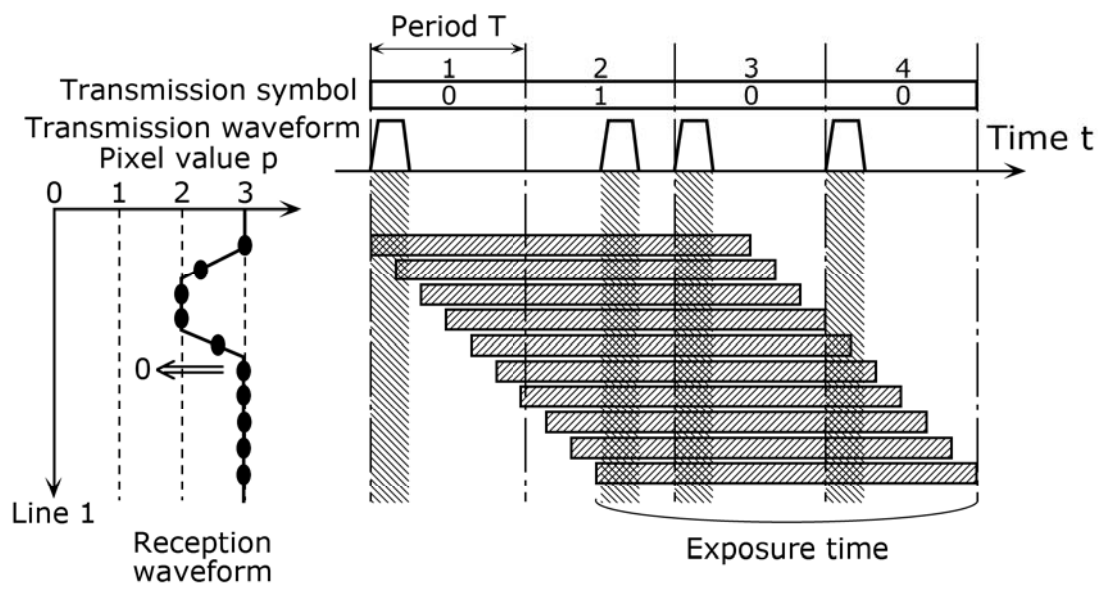


FIG. 122

In the case of symbol 1  $\rightarrow$  1

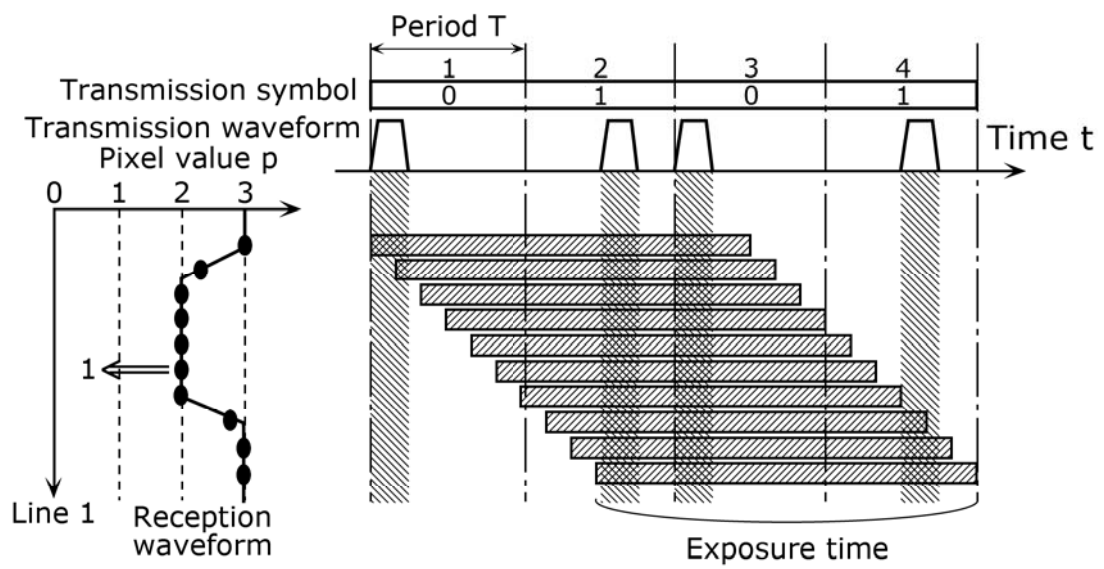




FIG. 123

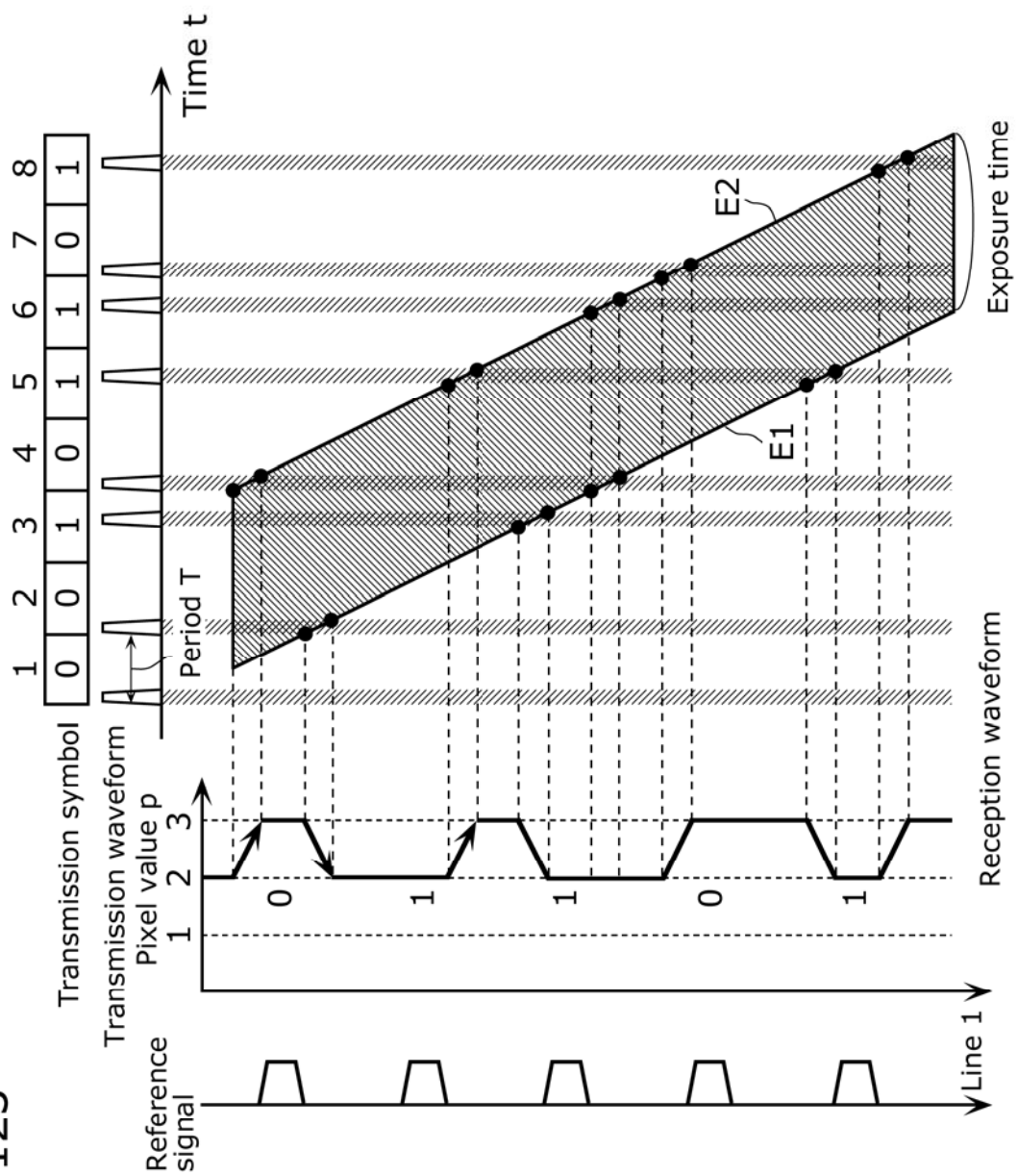


FIG. 124

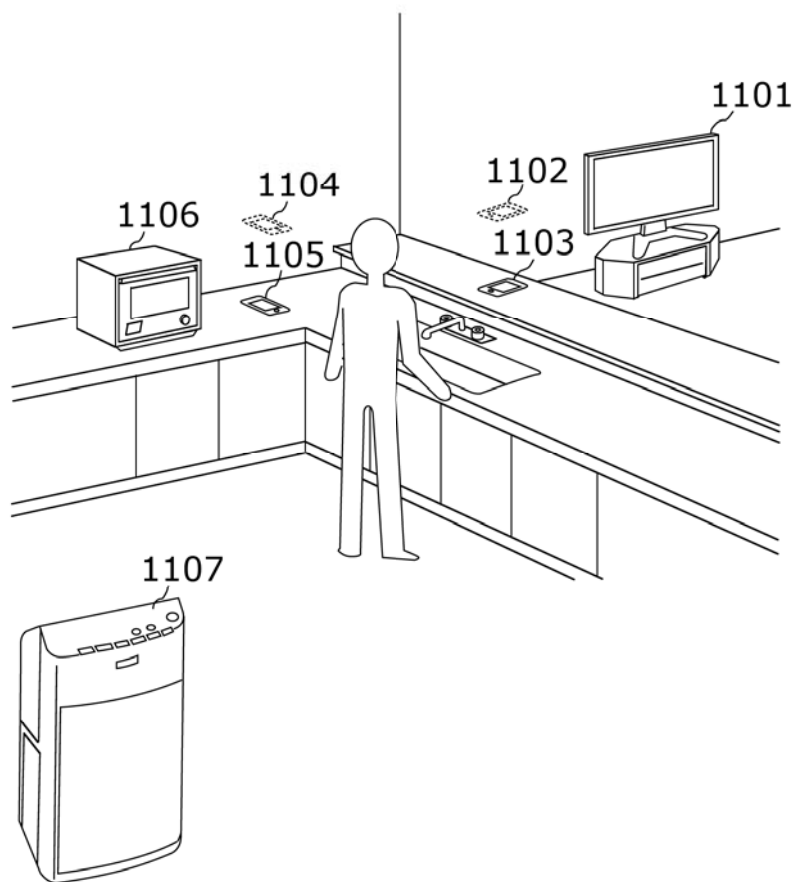


FIG. 125

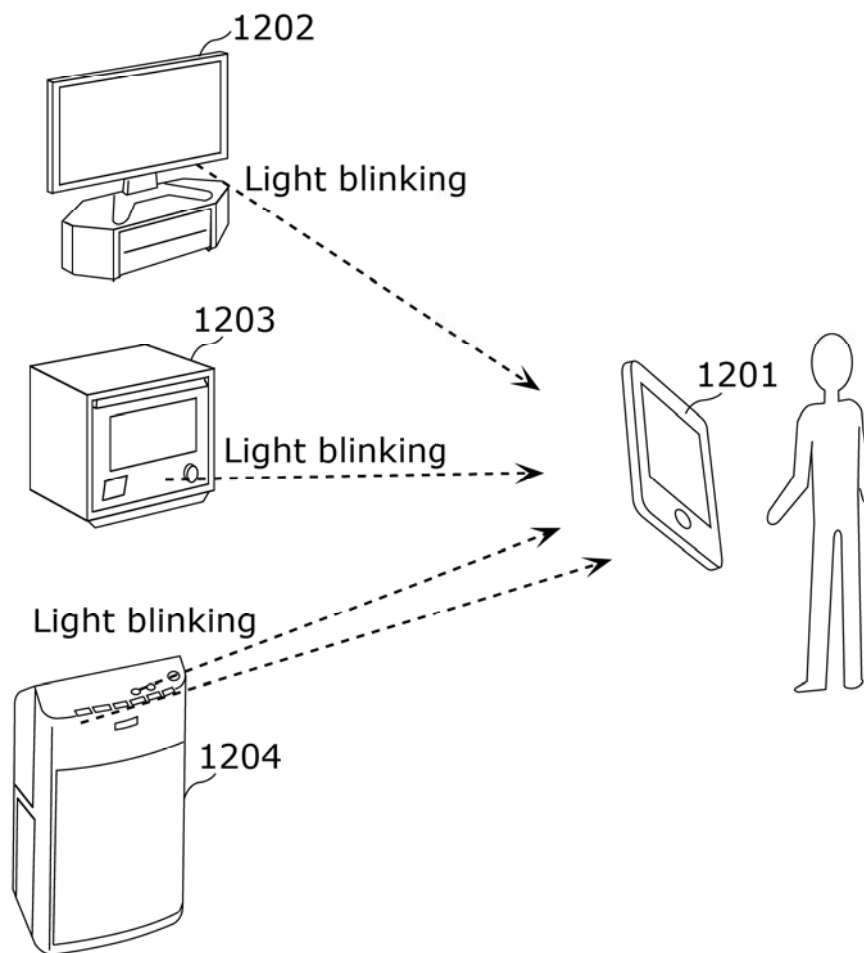


FIG. 126

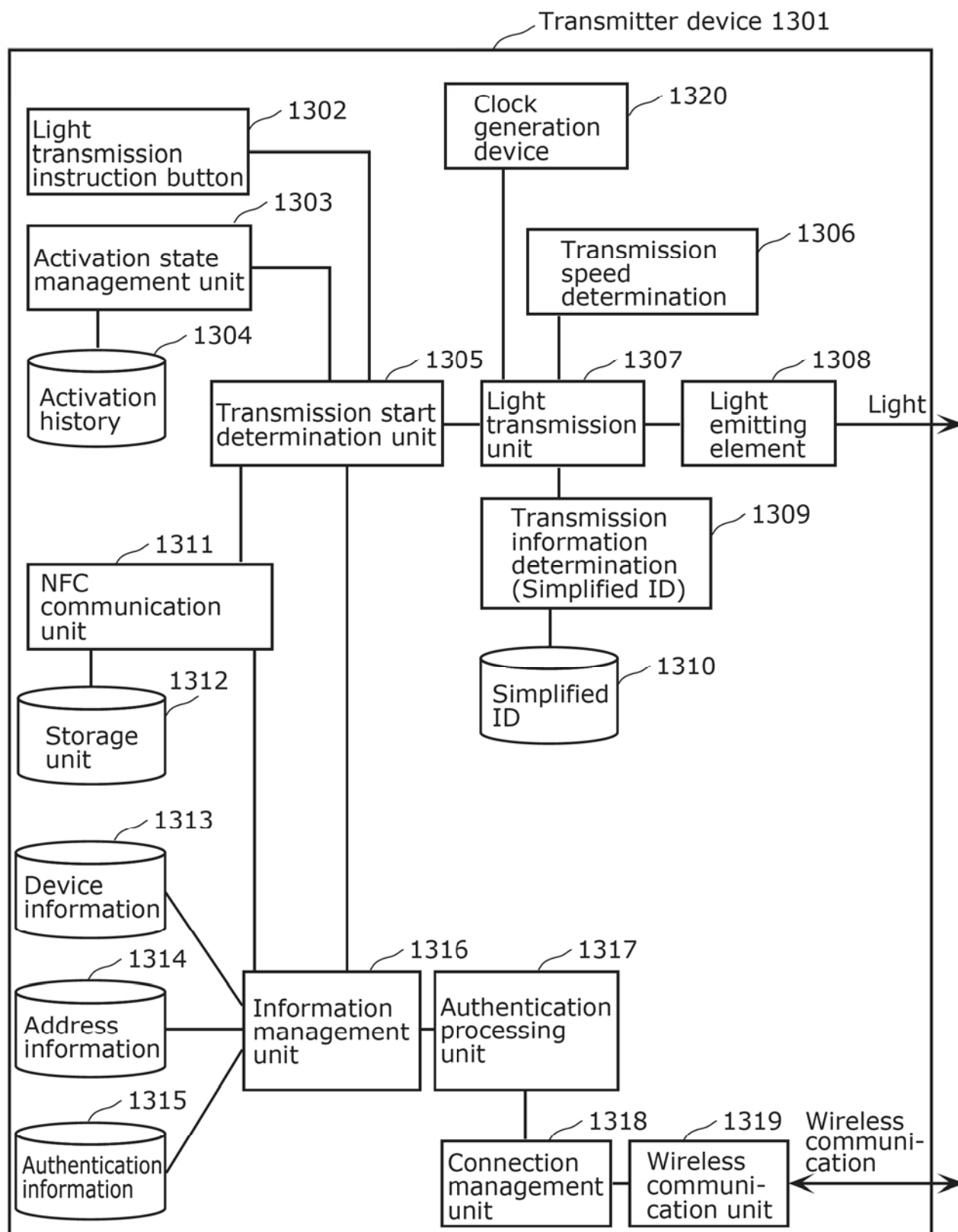


FIG. 127

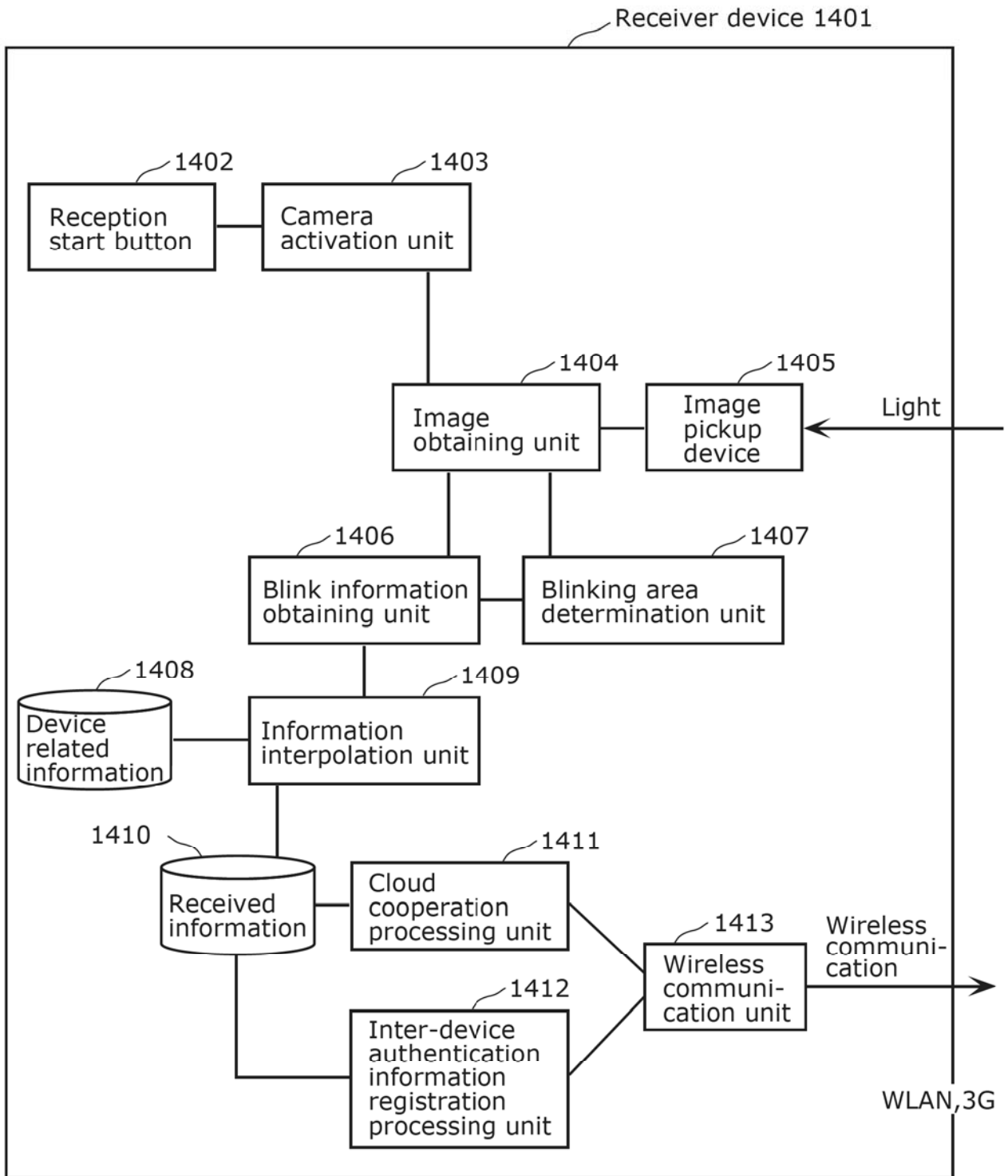


FIG. 128

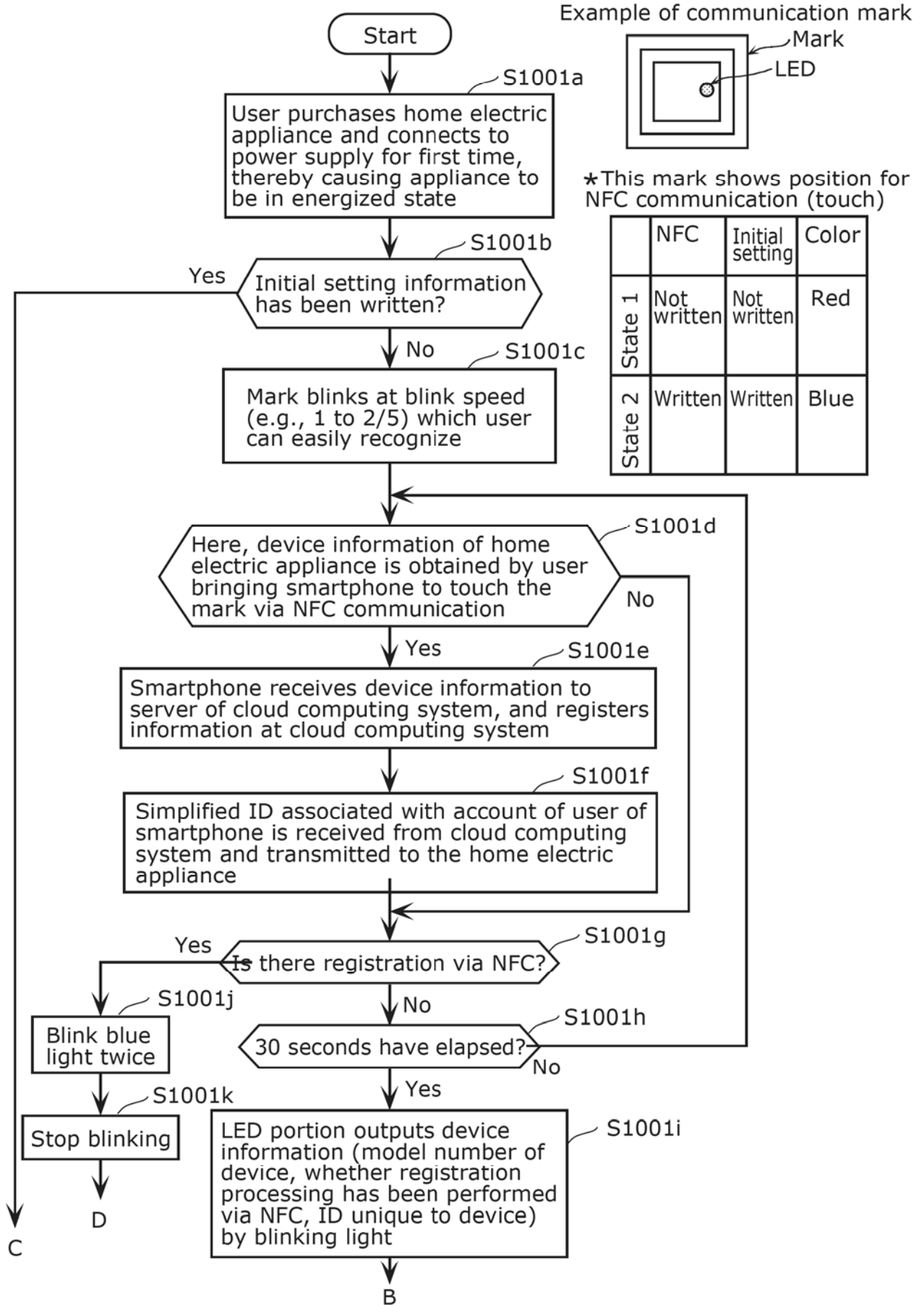


FIG. 129

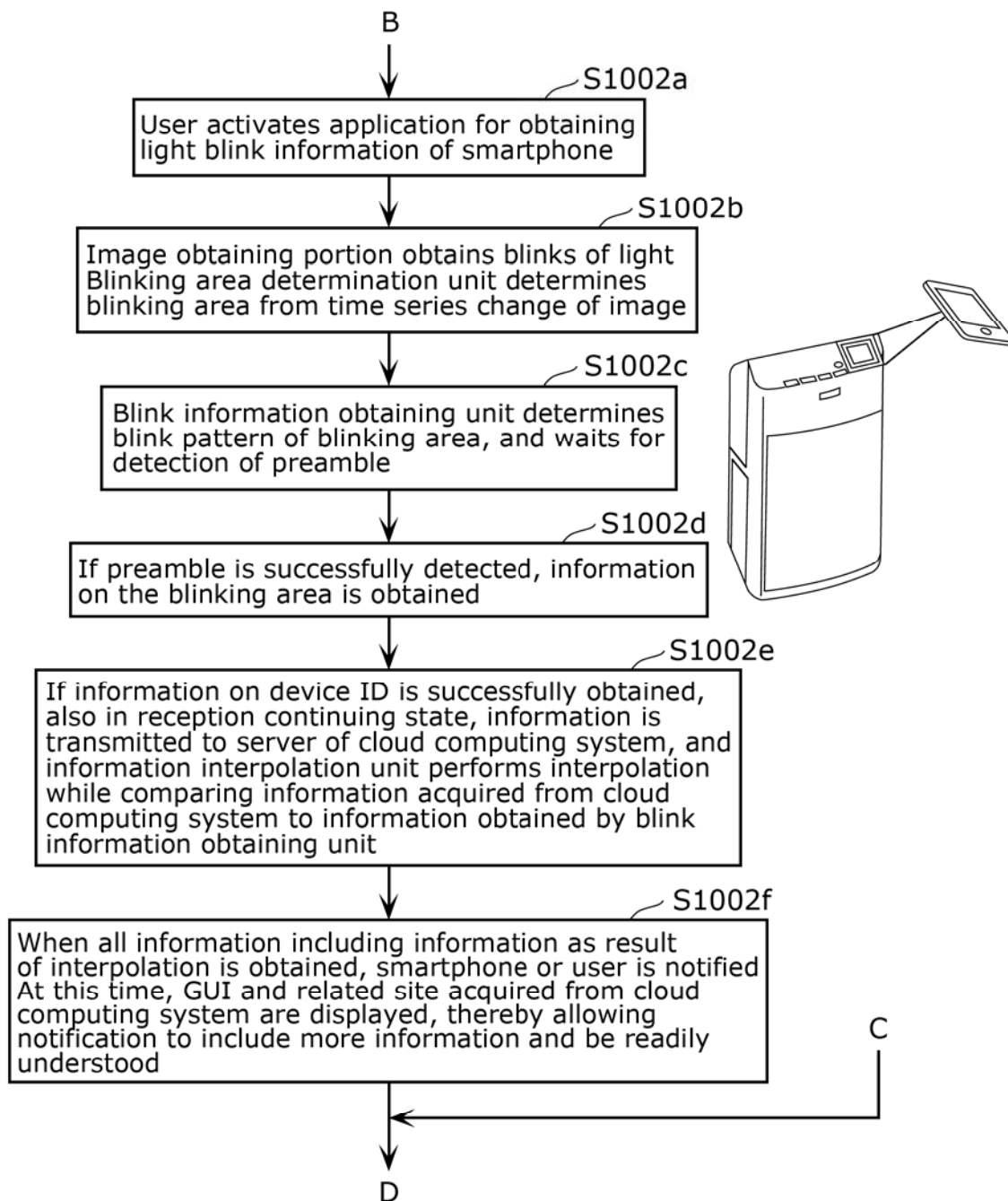
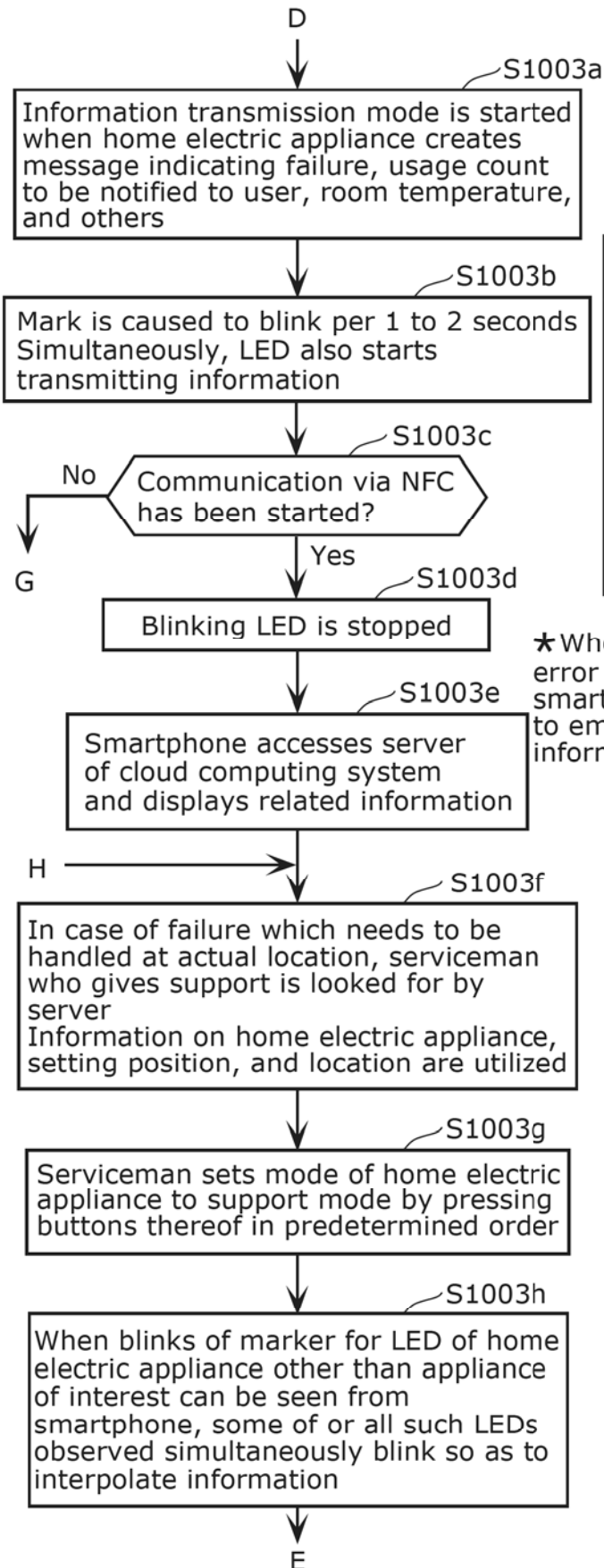


FIG. 130



Example of data to be transmitted

| Mode                |                       |     |       | Information                              |
|---------------------|-----------------------|-----|-------|------------------------------------------|
| Serviceman mode NFC | Serviceman mode Light | NFC | Light | Device information for notification code |
|                     |                       |     |       | User operation information               |
|                     |                       |     |       | Internal sensor information              |

★ When mark and LED blink simultaneously, error in obtaining information by camera of smartphone can be reduced by causing mark to emit light during intervals of successive information transmissions by LED

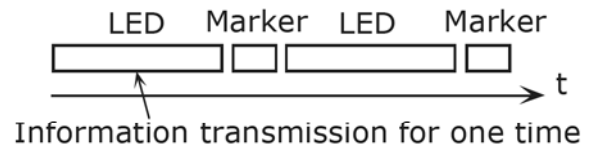




FIG. 131

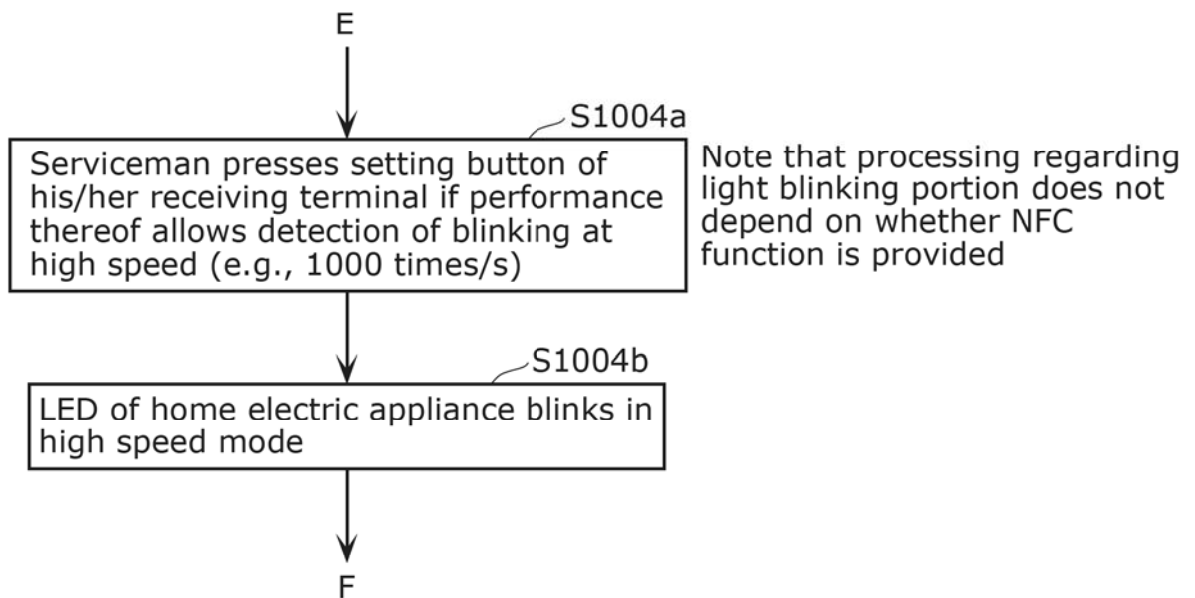


FIG. 132

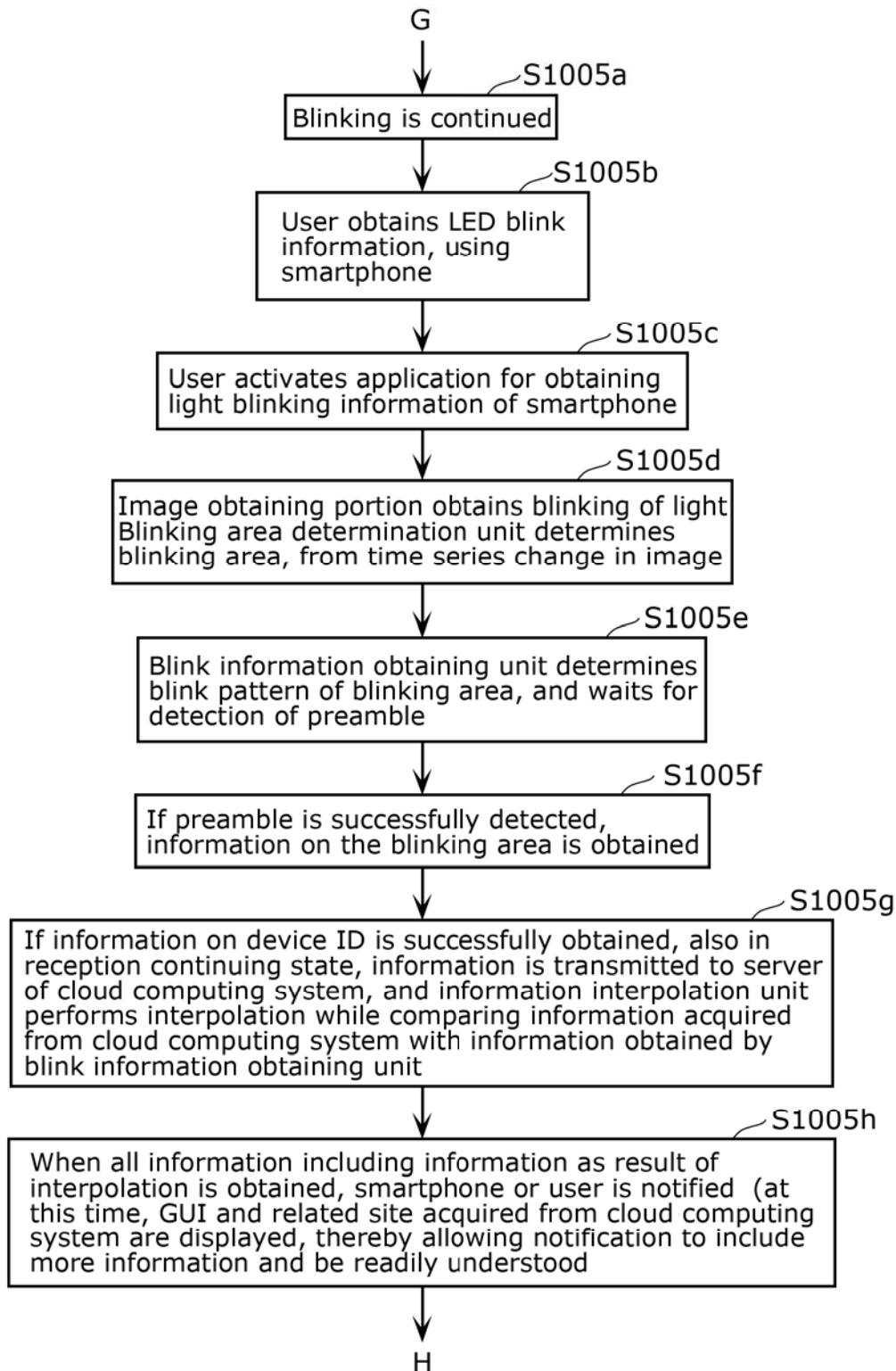


FIG. 133

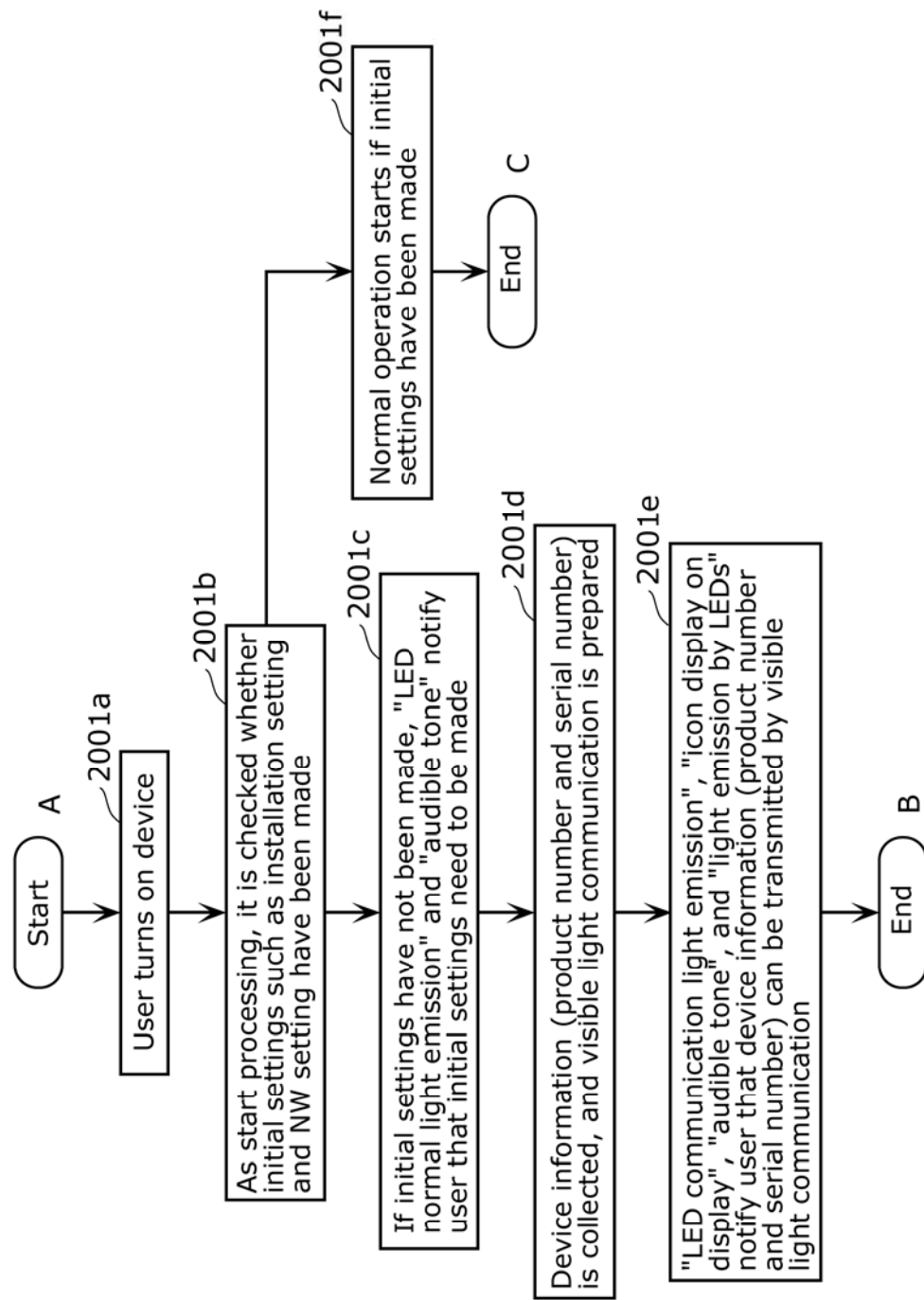


FIG. 134

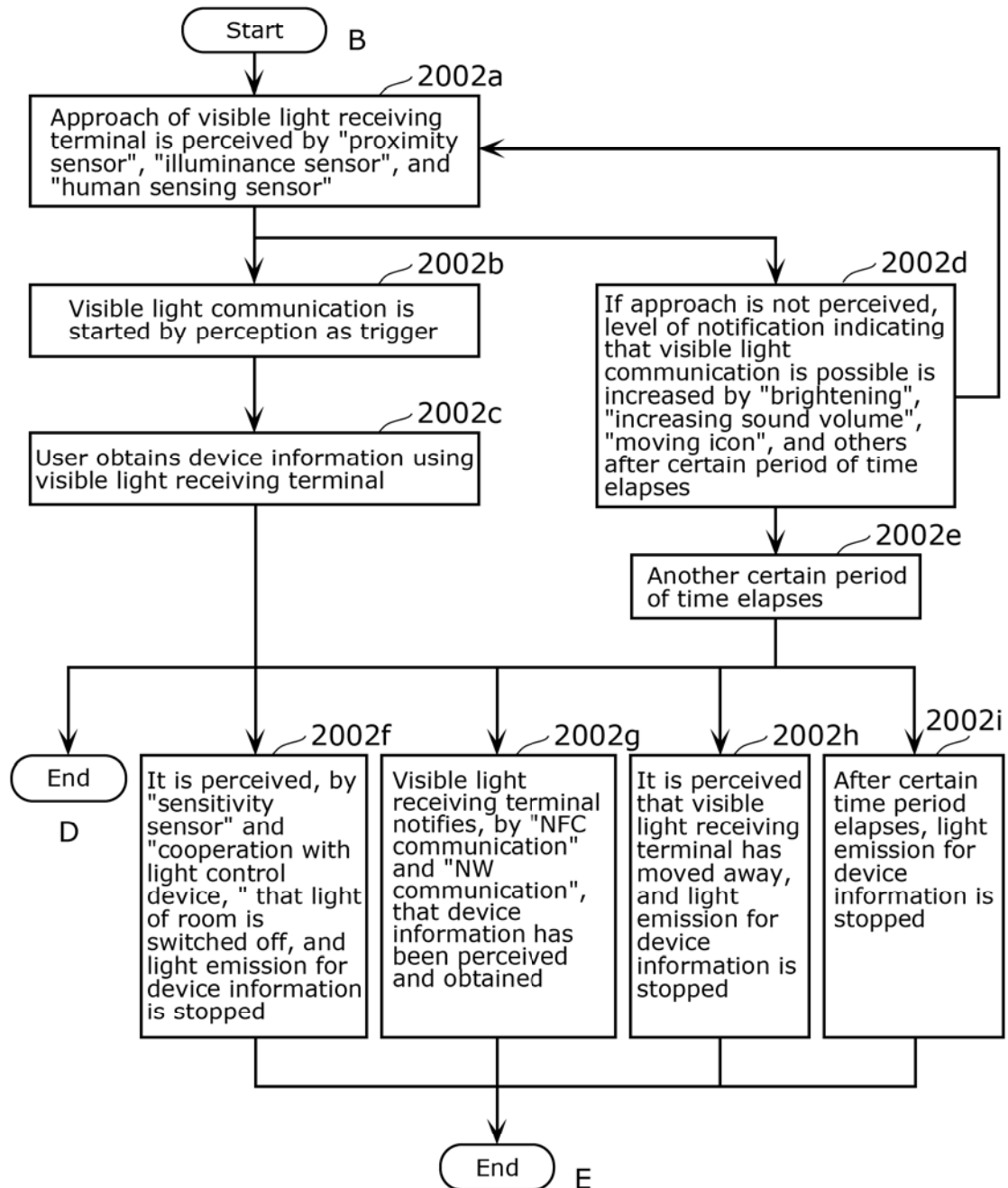


FIG. 135

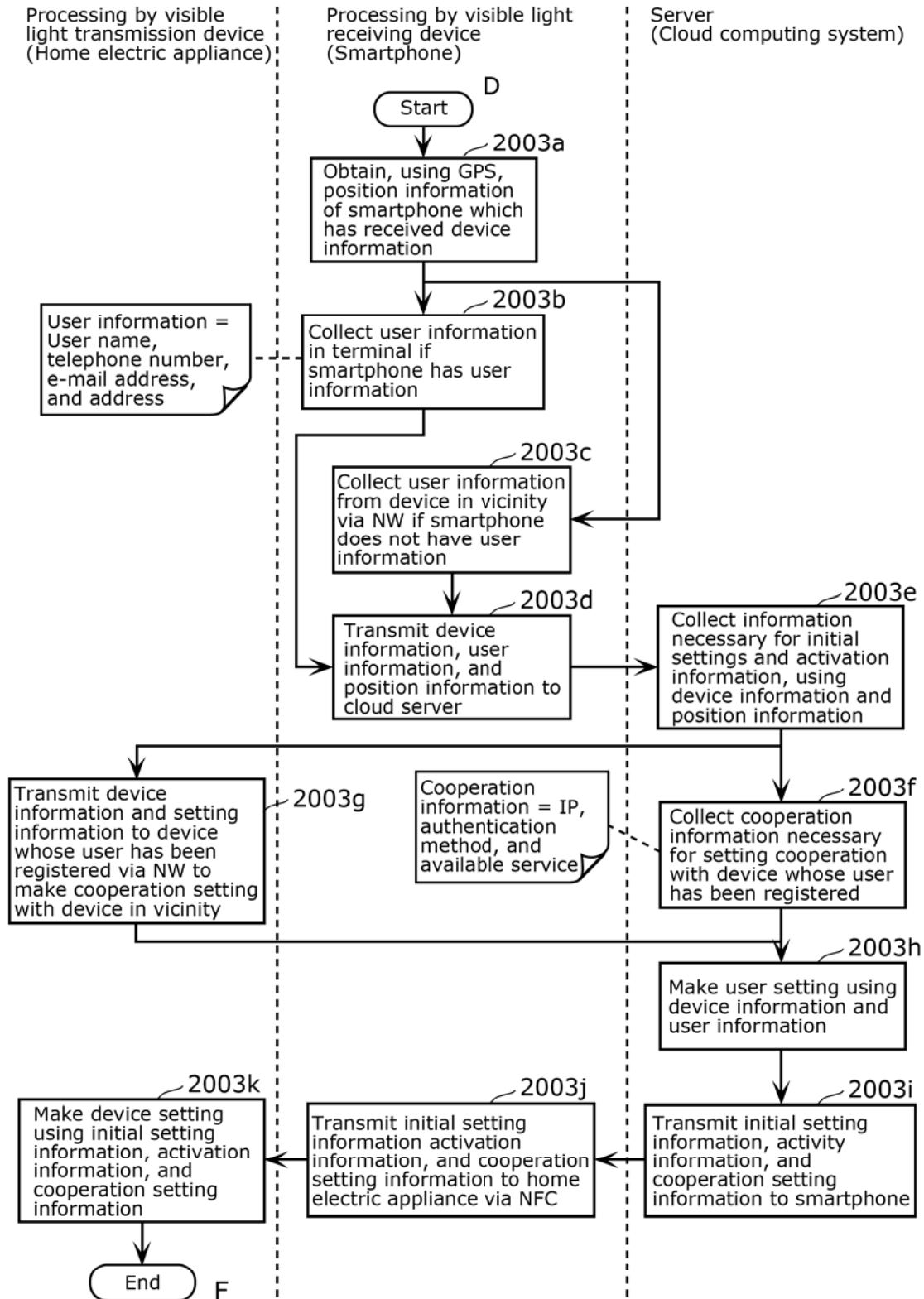


FIG. 136

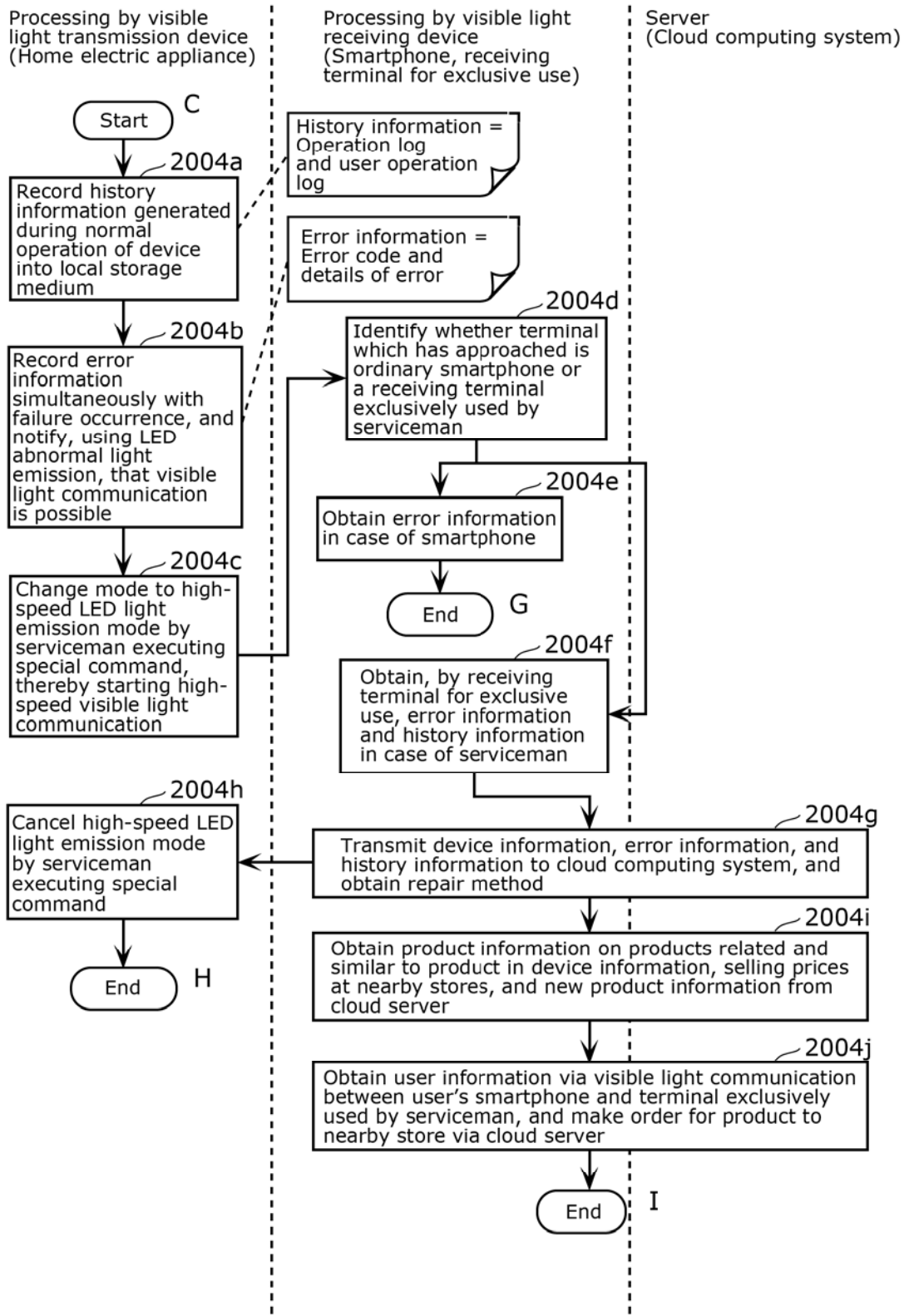


FIG. 137

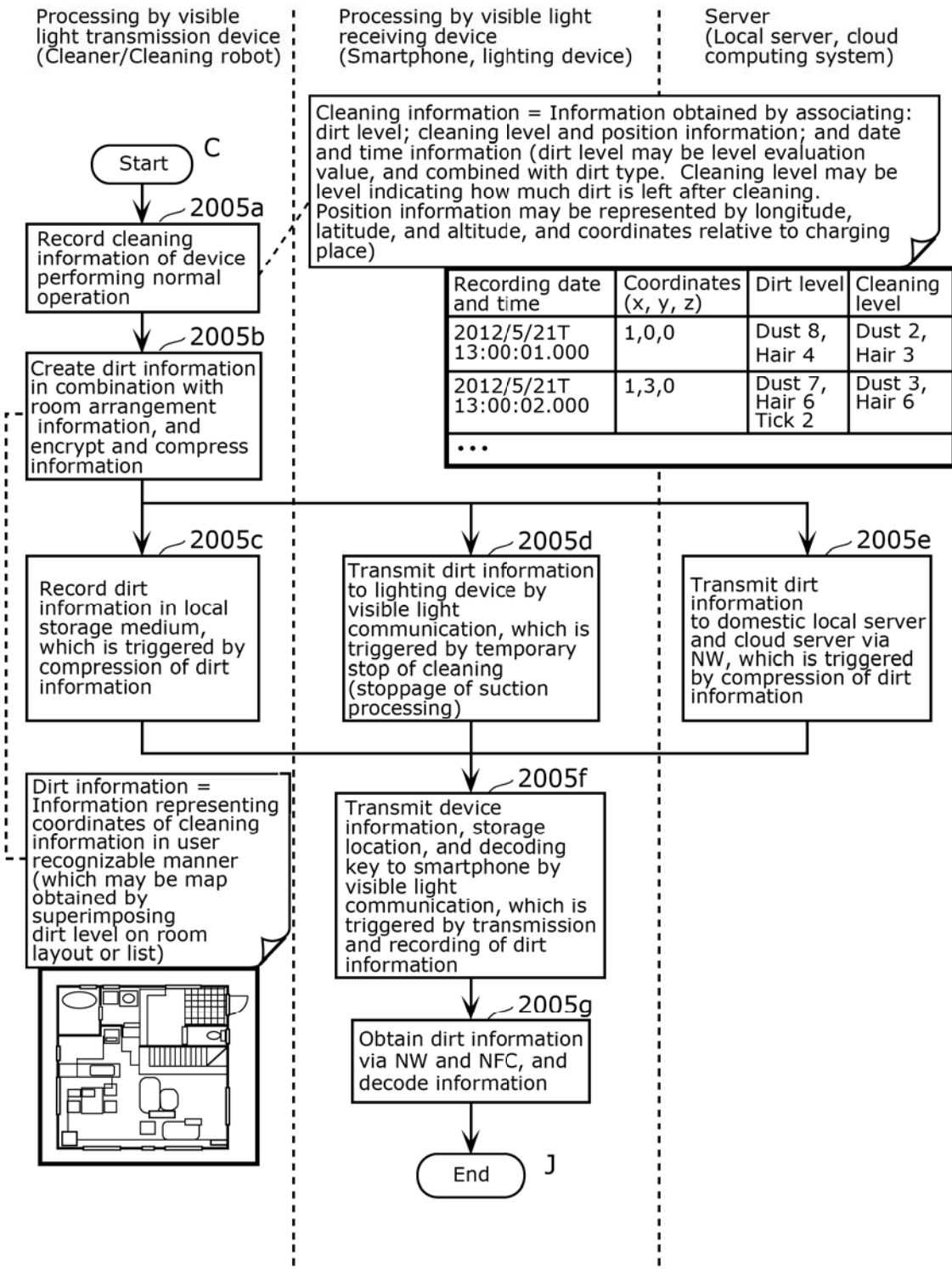


FIG. 138

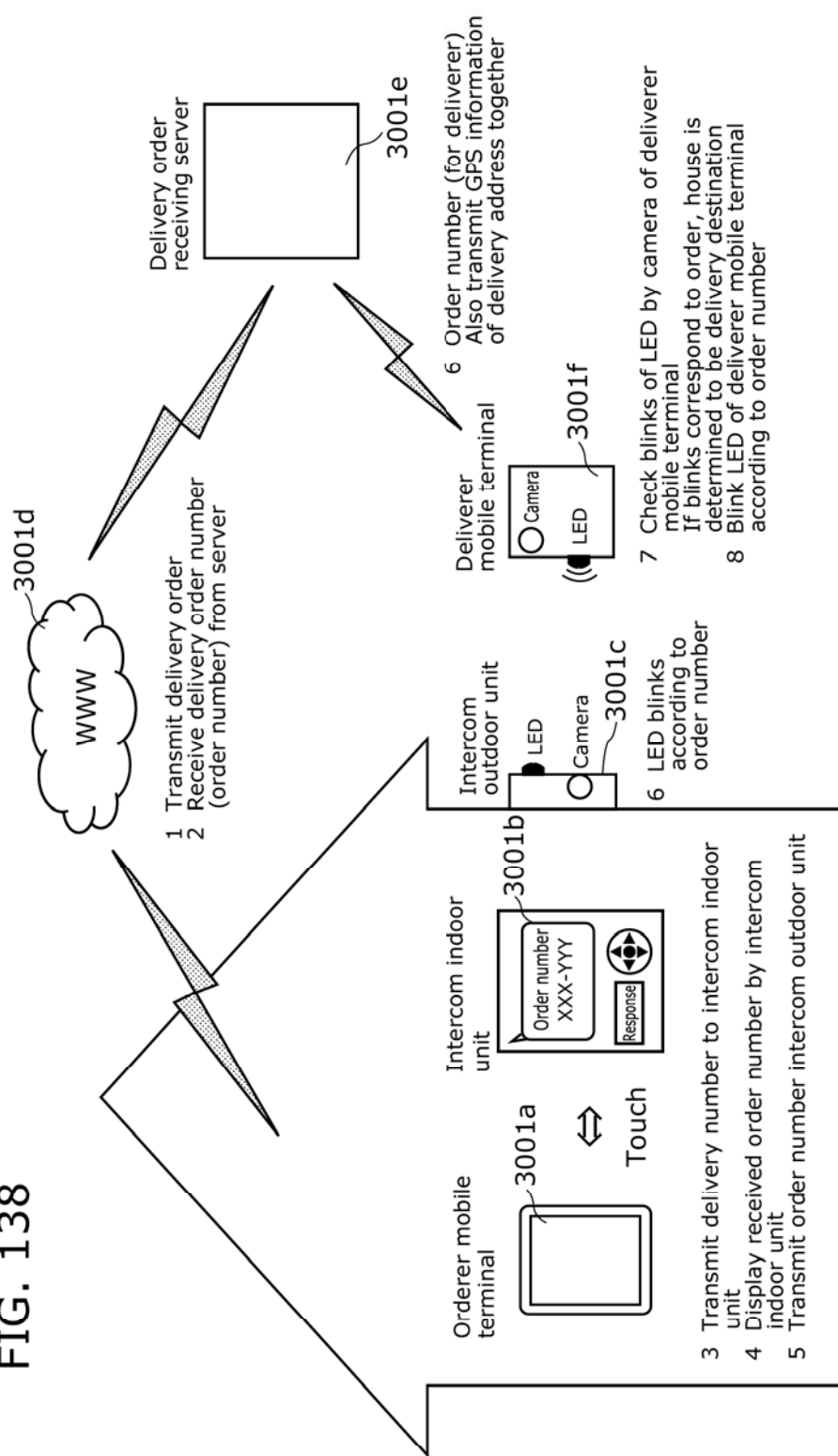




FIG. 139

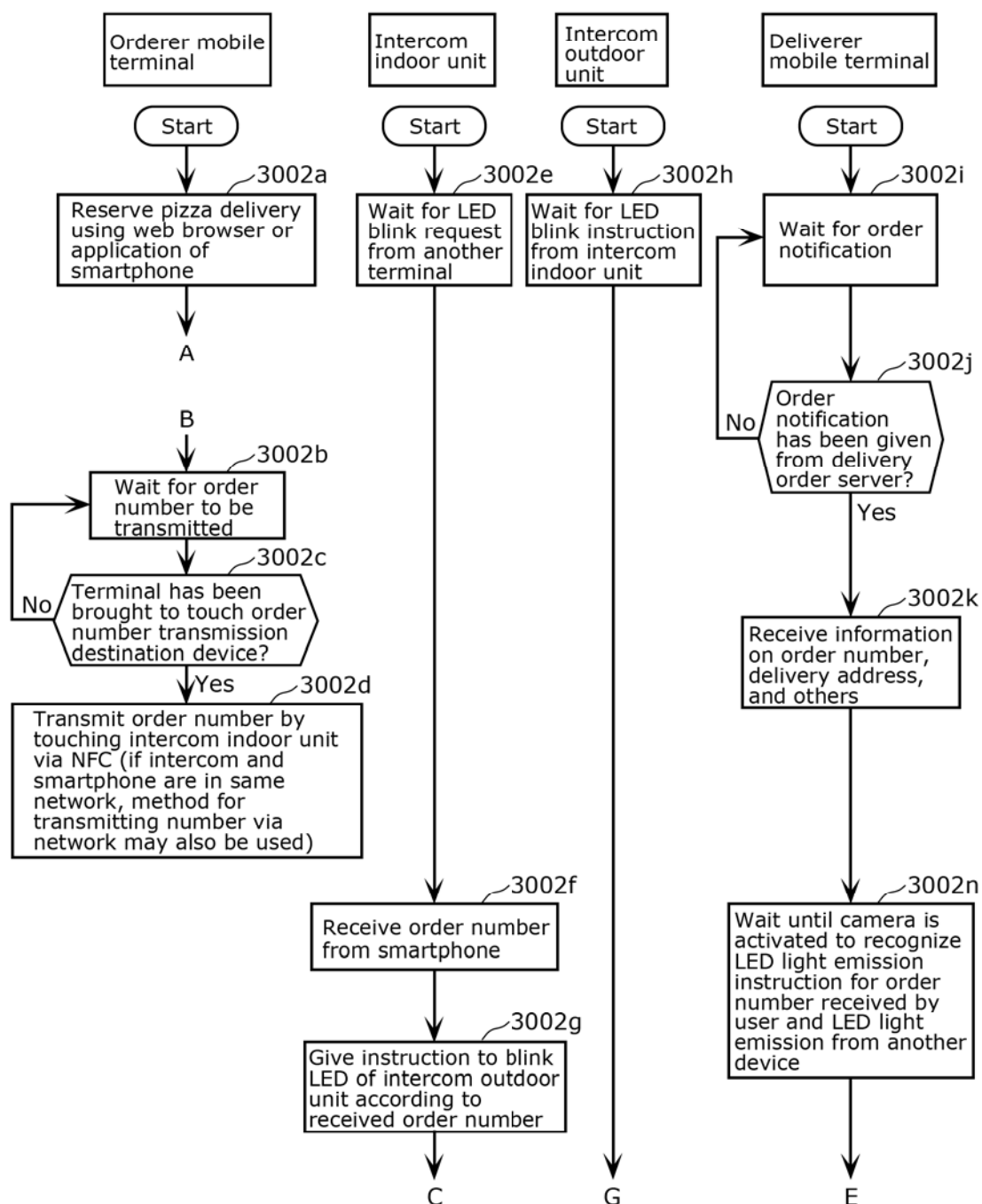


FIG. 140

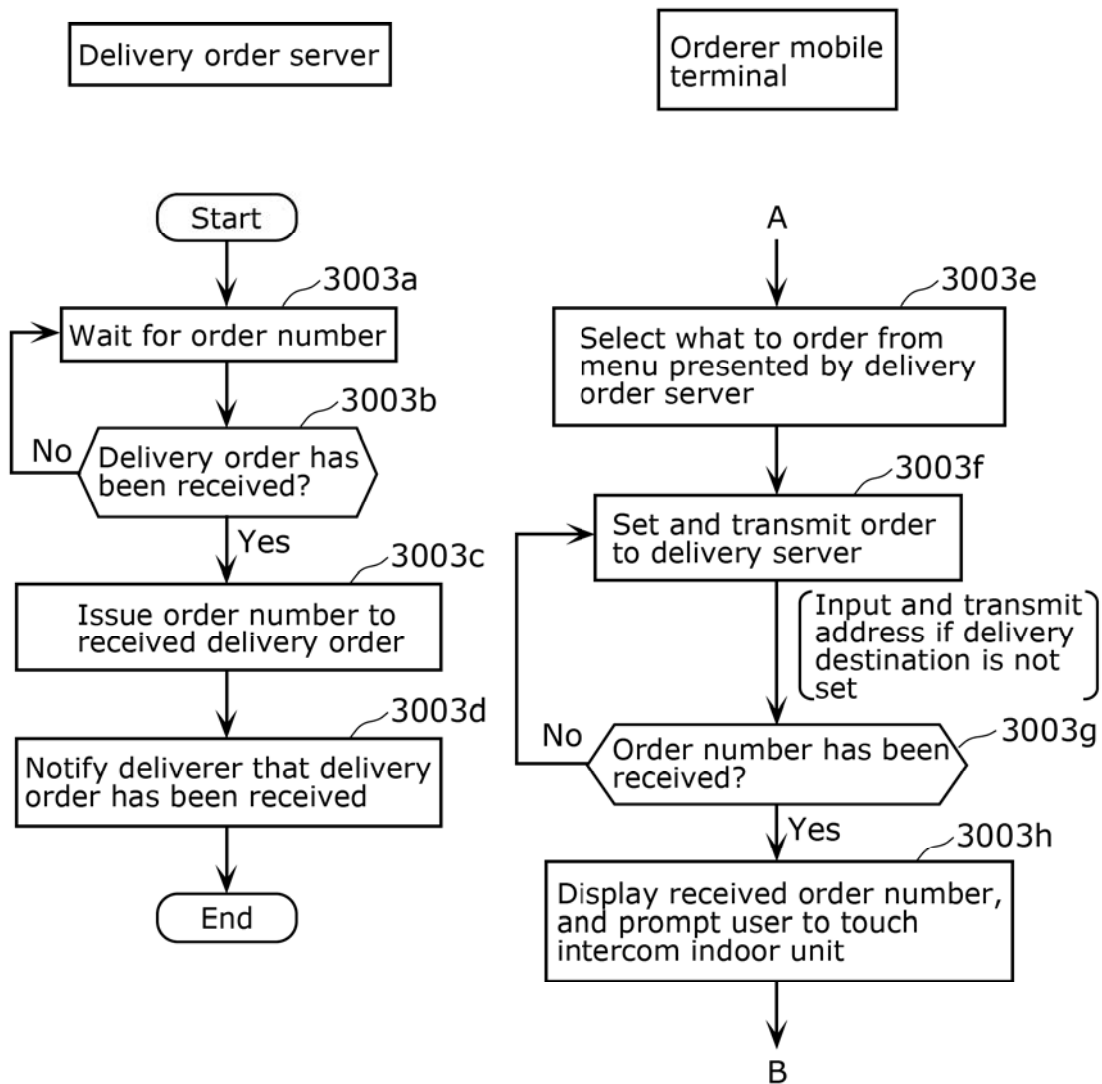


FIG. 141

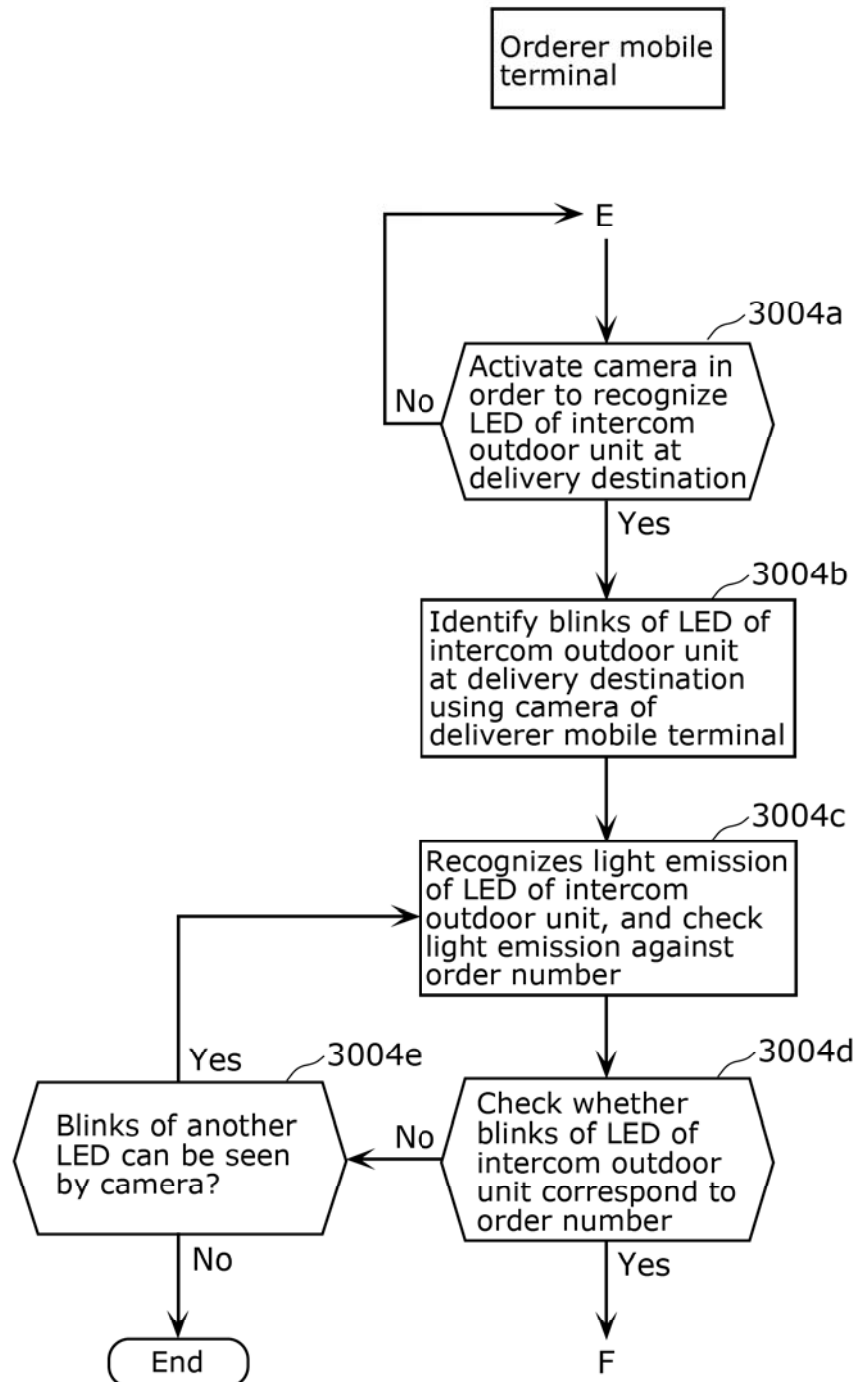


FIG. 142

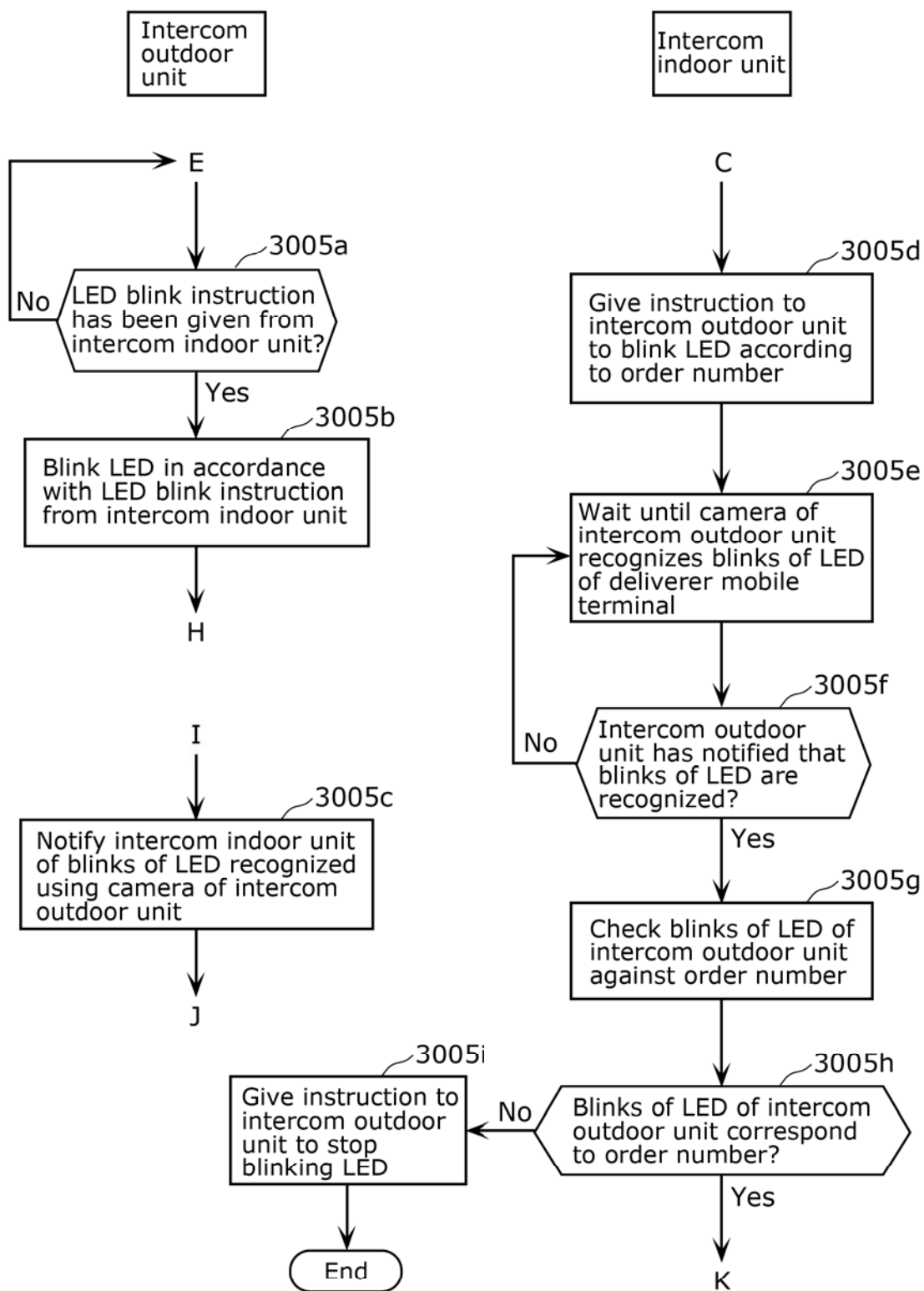


FIG. 143

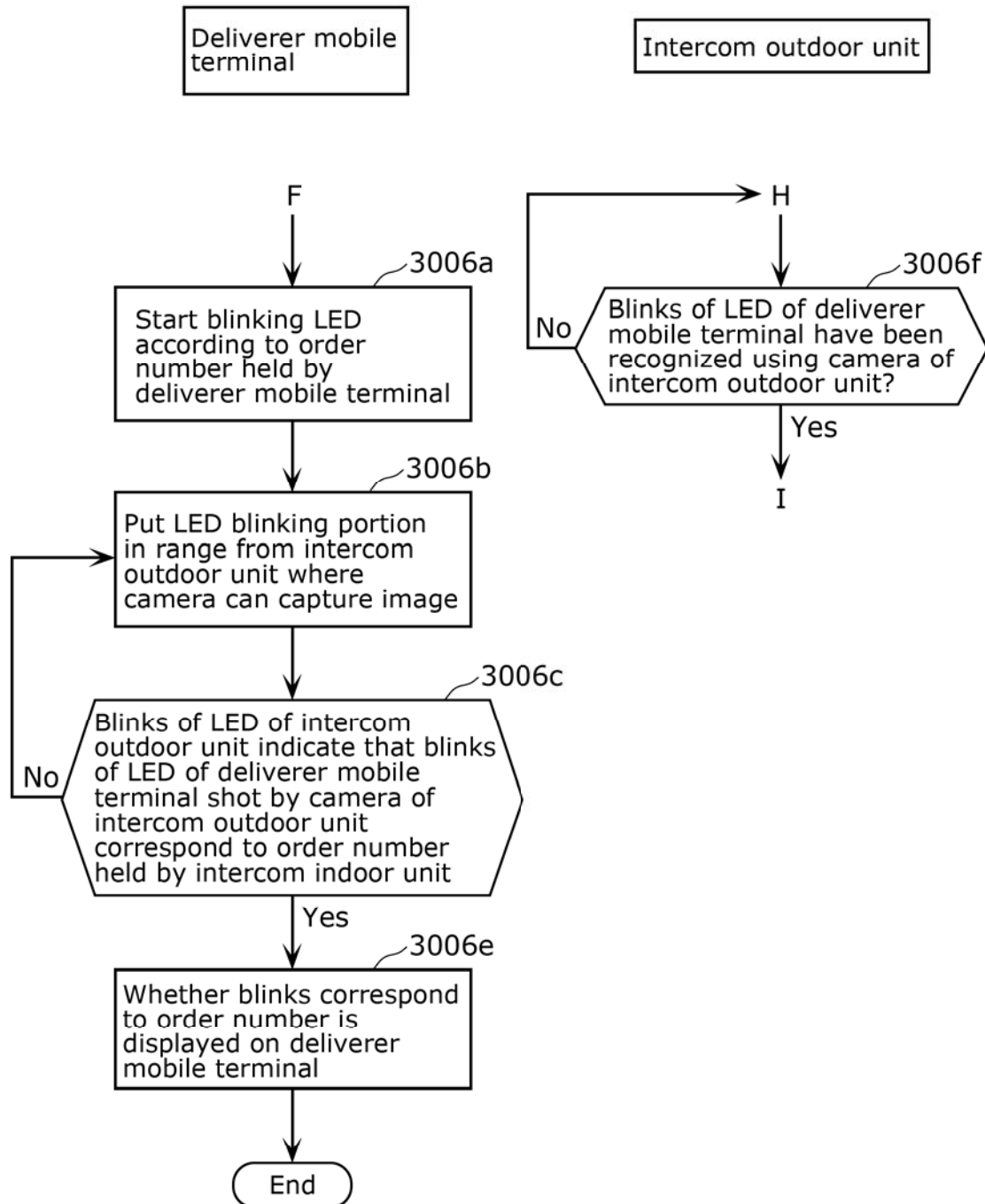


FIG. 144

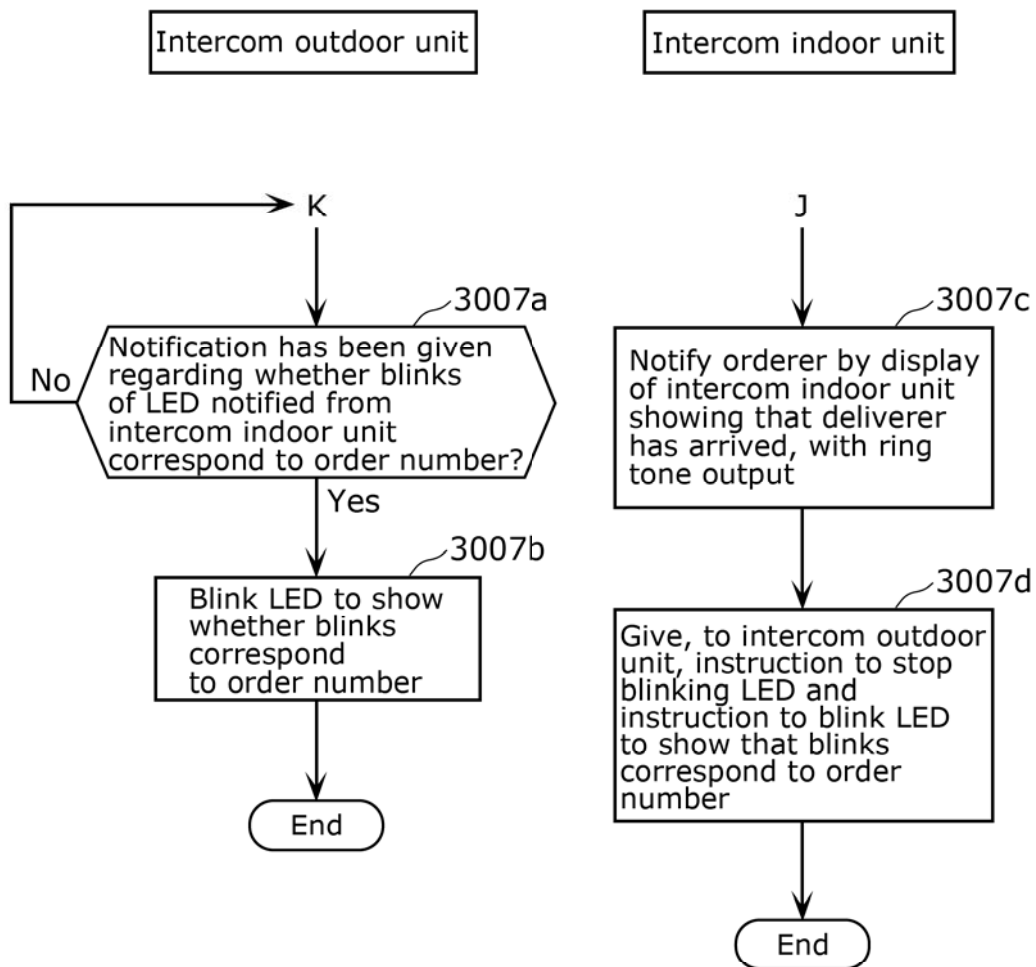


FIG. 145

Register user and mobile phone in use to server

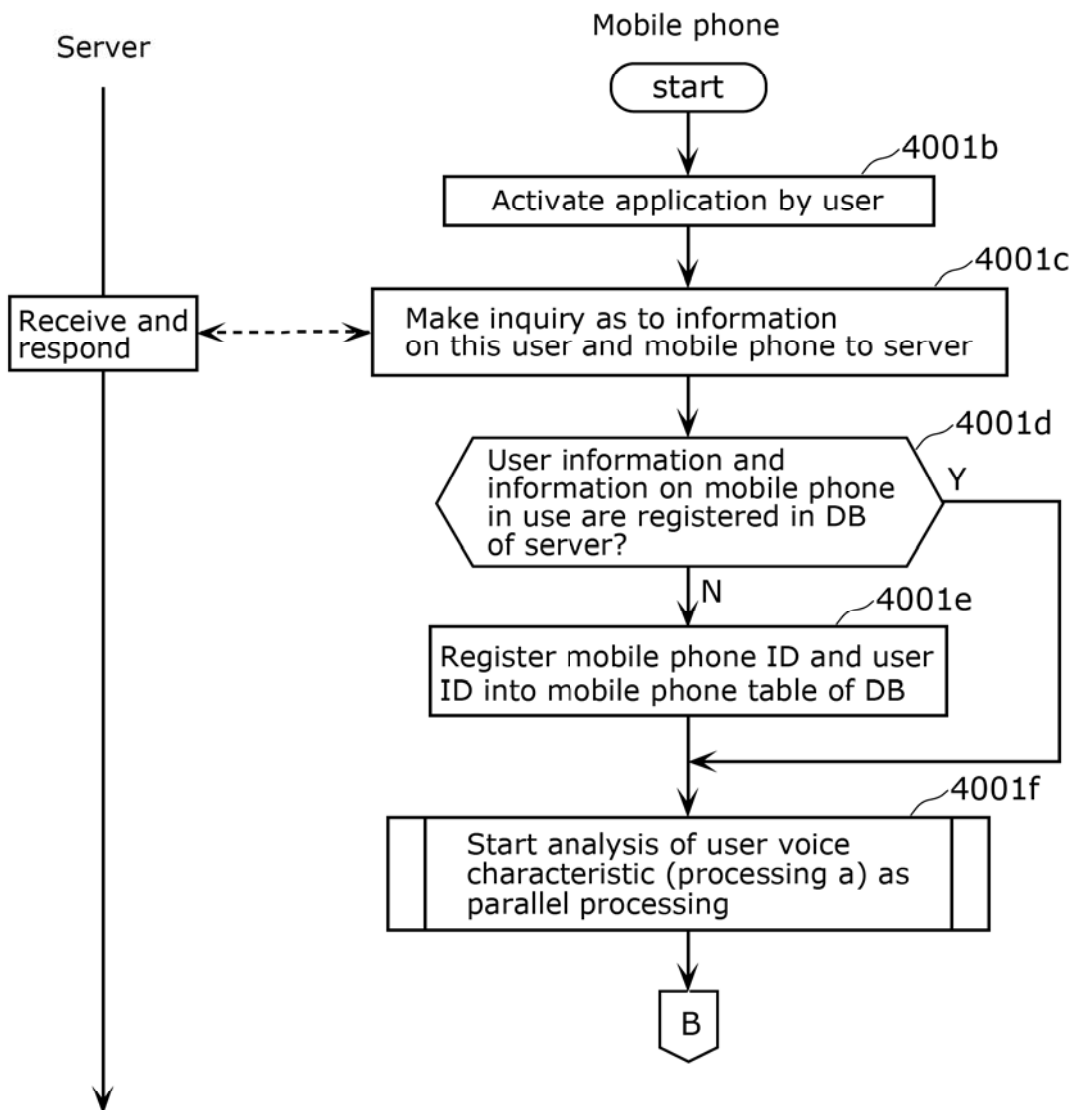
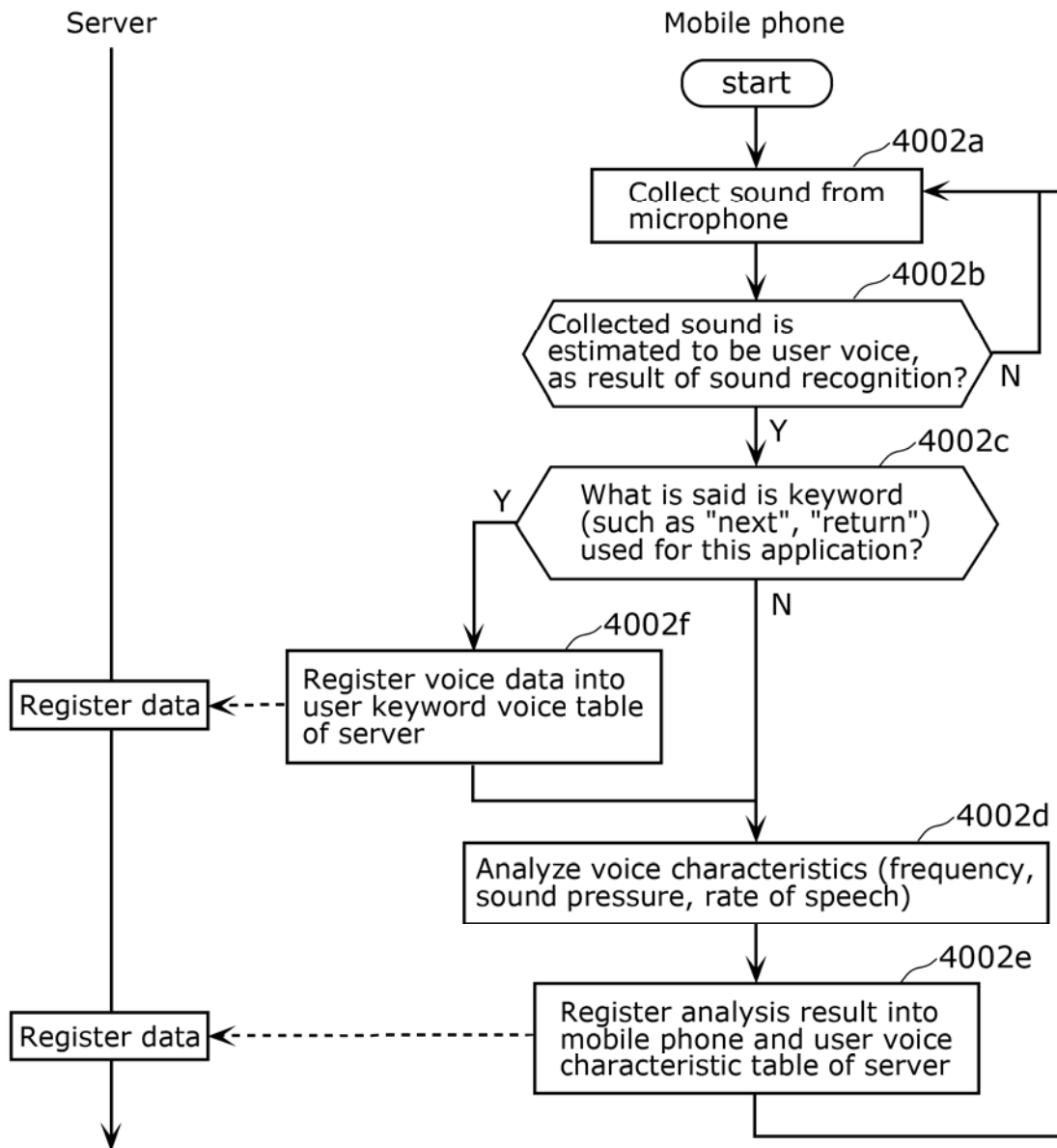


FIG. 146

(Processing a) Analyze user voice characteristics





# FIG. 147

## Prepare sound recognition processing

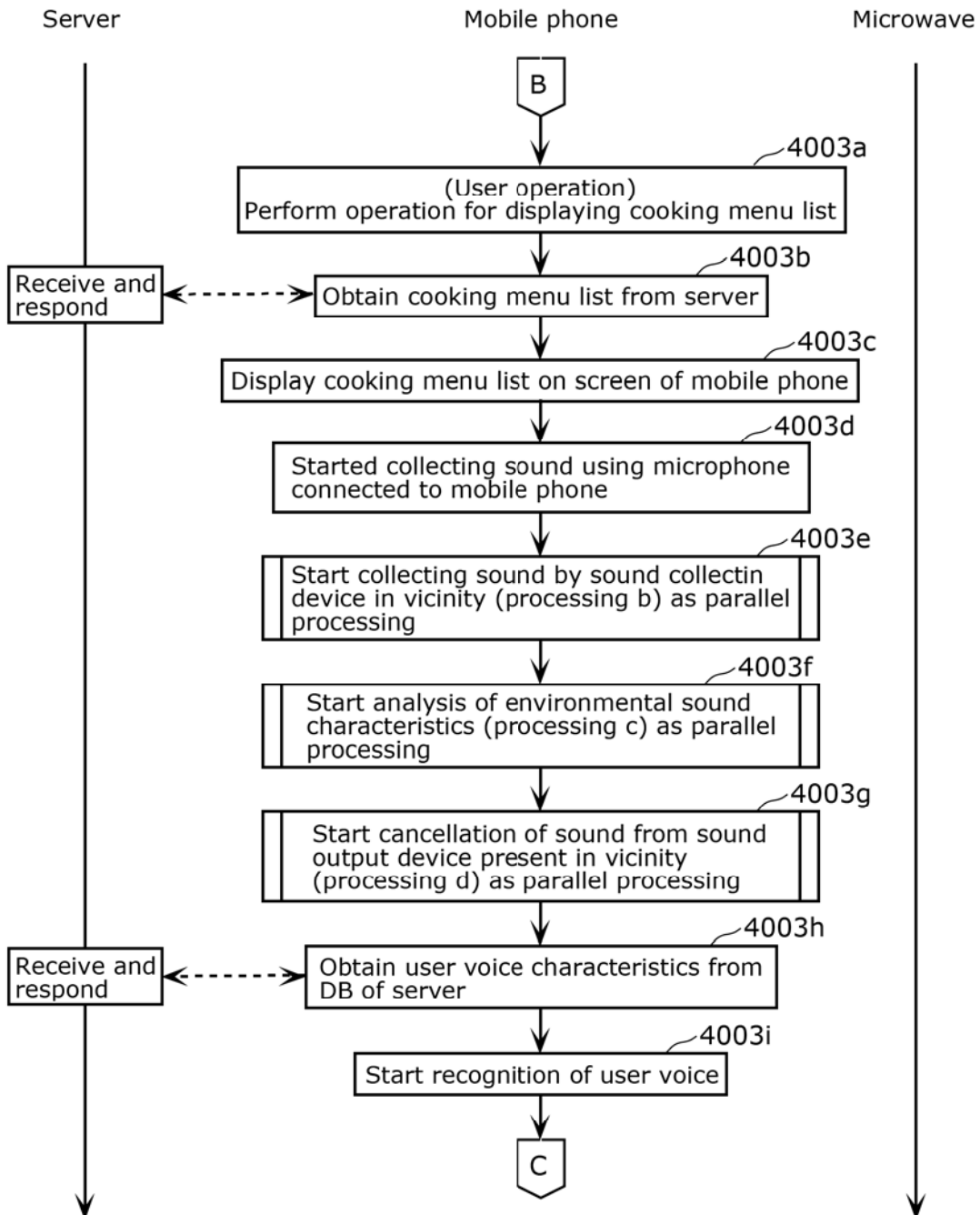


FIG. 148

(Processing b) Collect sound by sound collecting device in vicinity

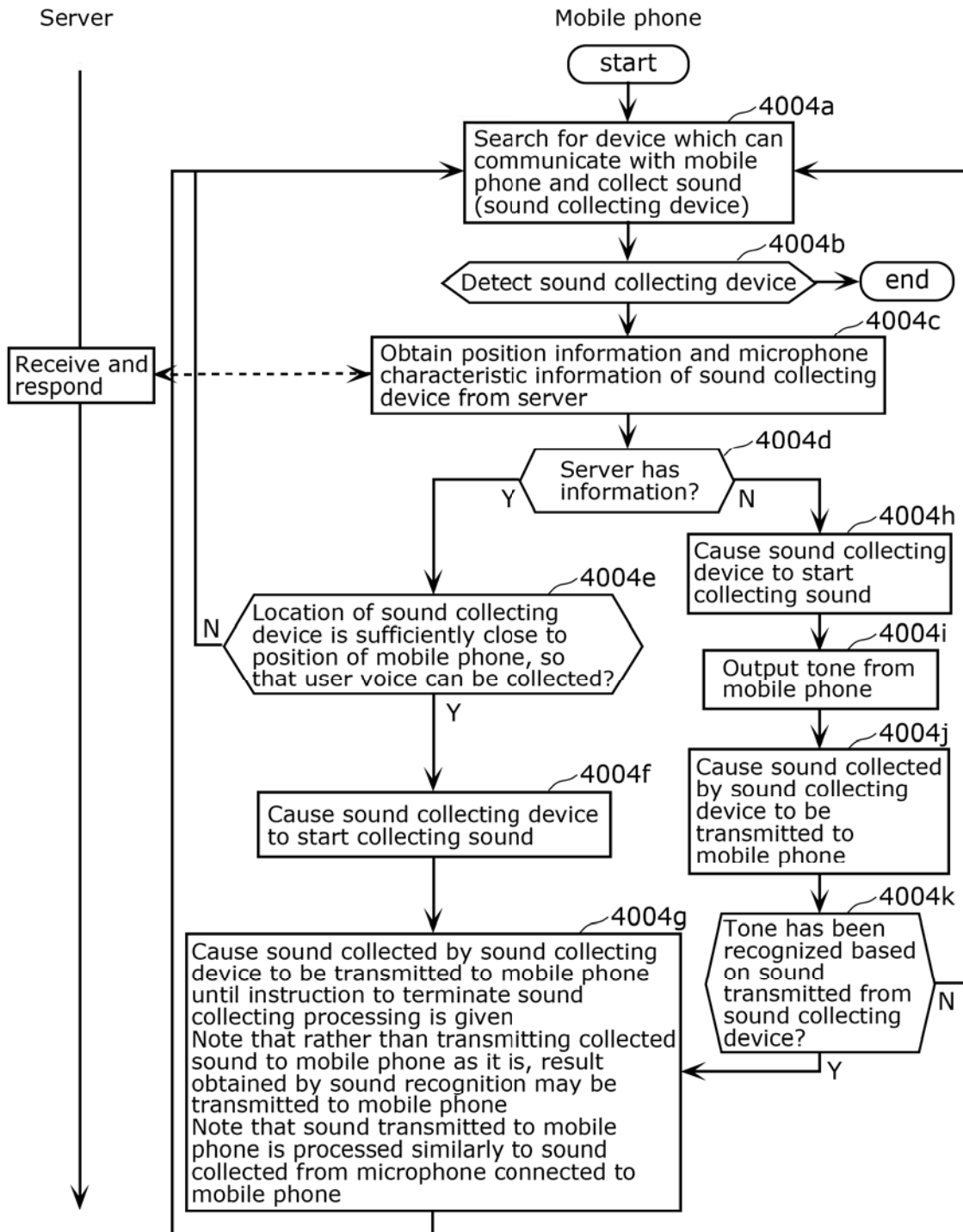


FIG. 149

(Processing c) Analyze environmental sound characteristics

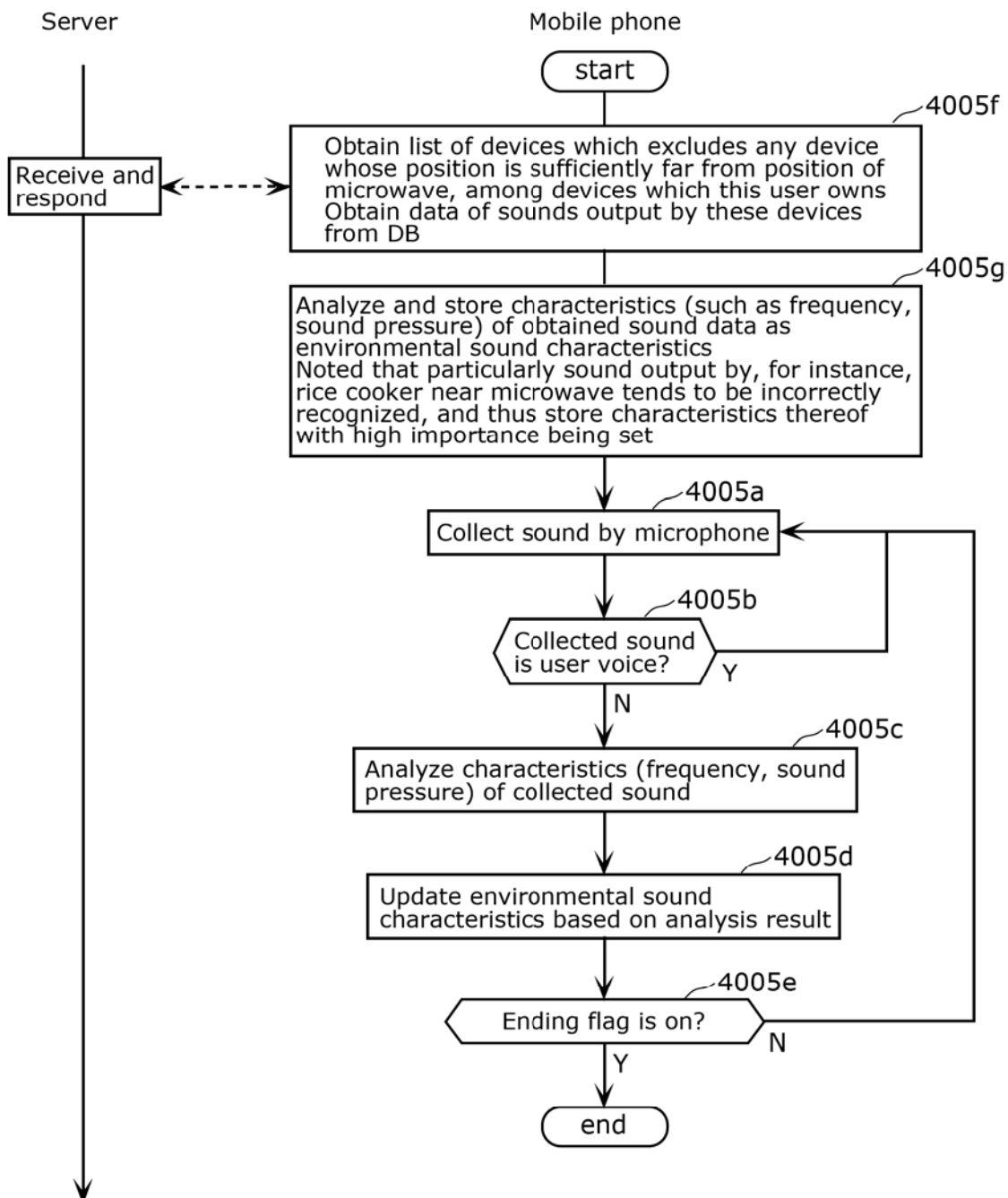


FIG. 150

(Processing d) Cancel sound from sound output device present in vicinity

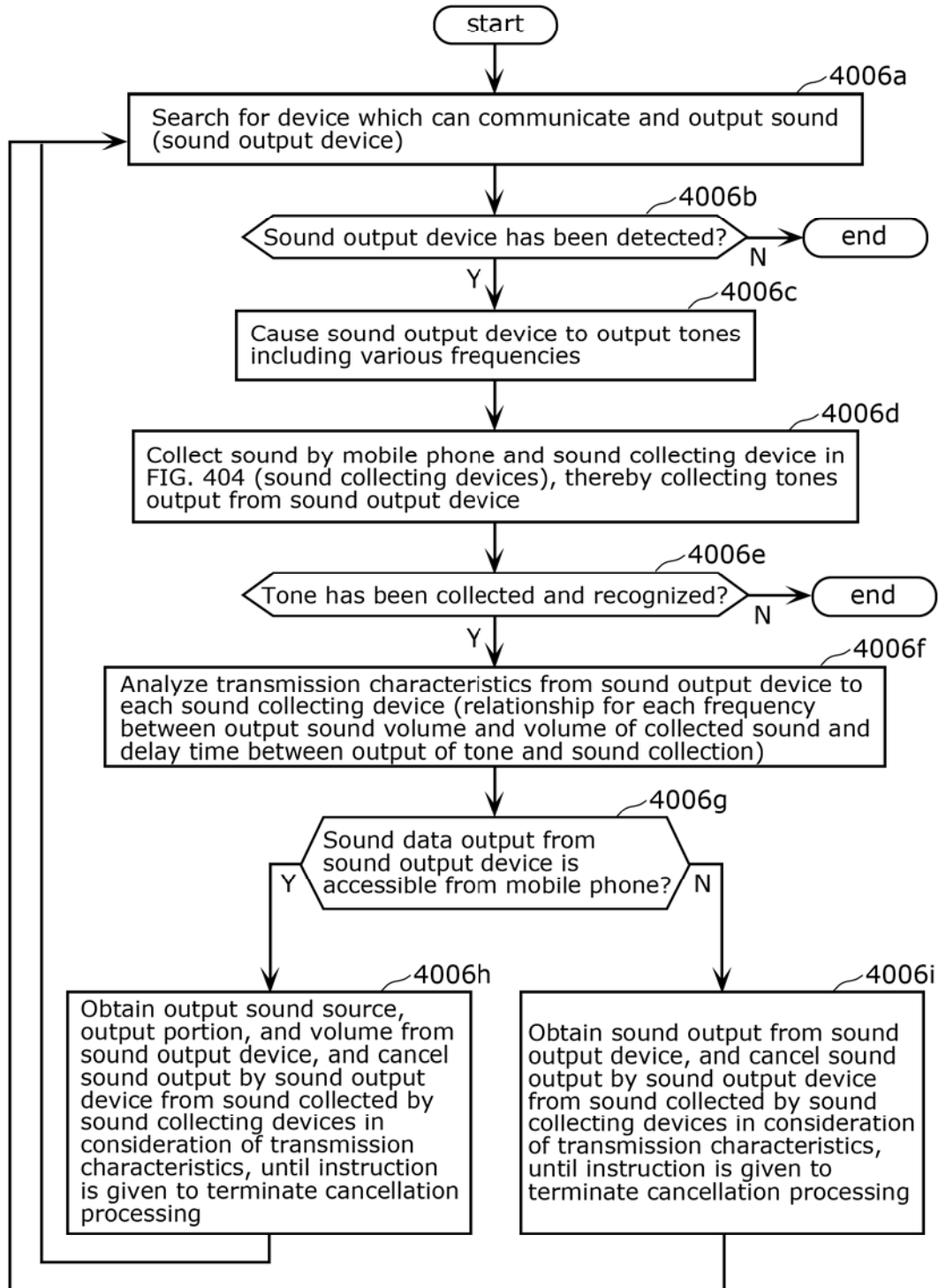


FIG. 151

Select what to cook, and set detailed operation in microwave

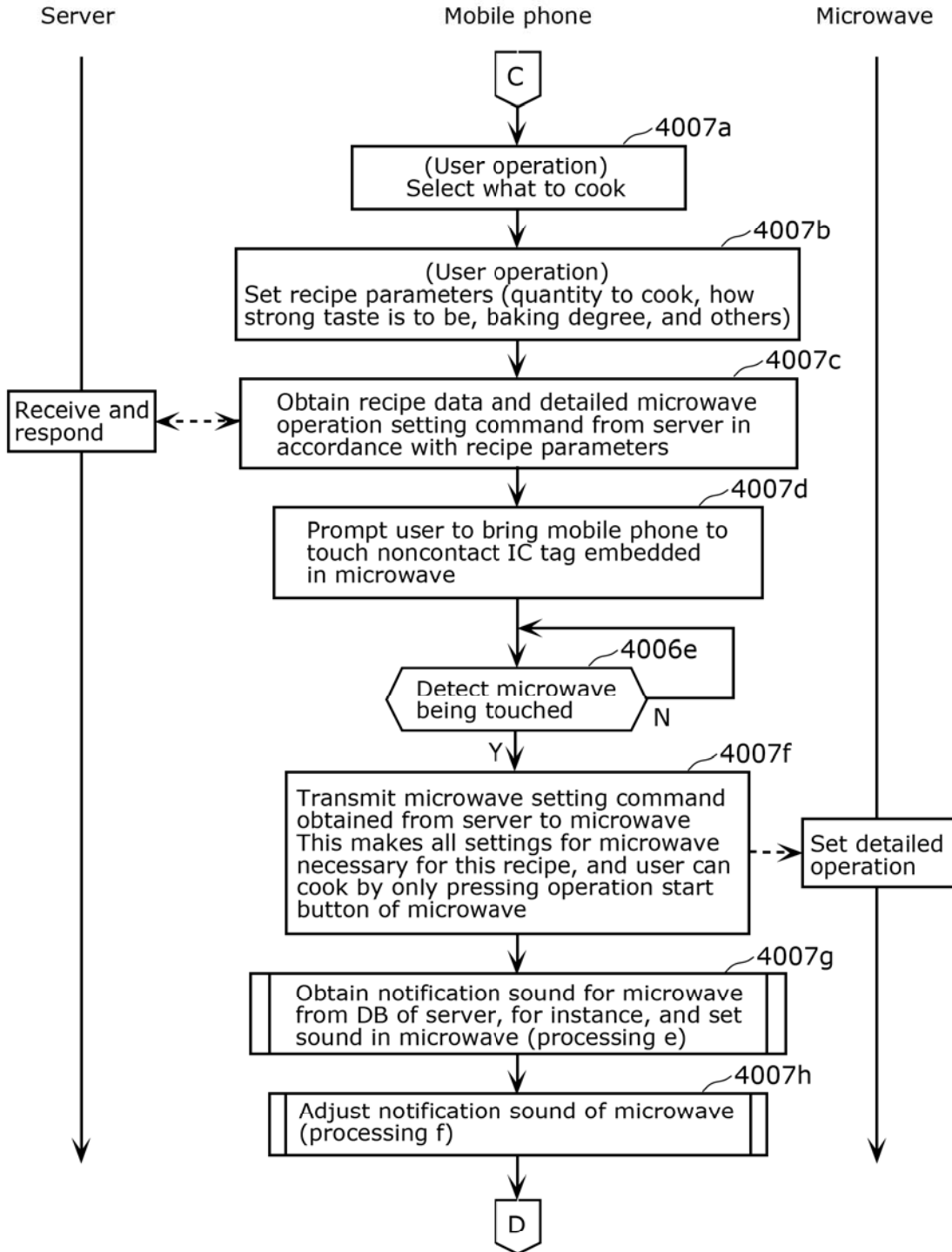
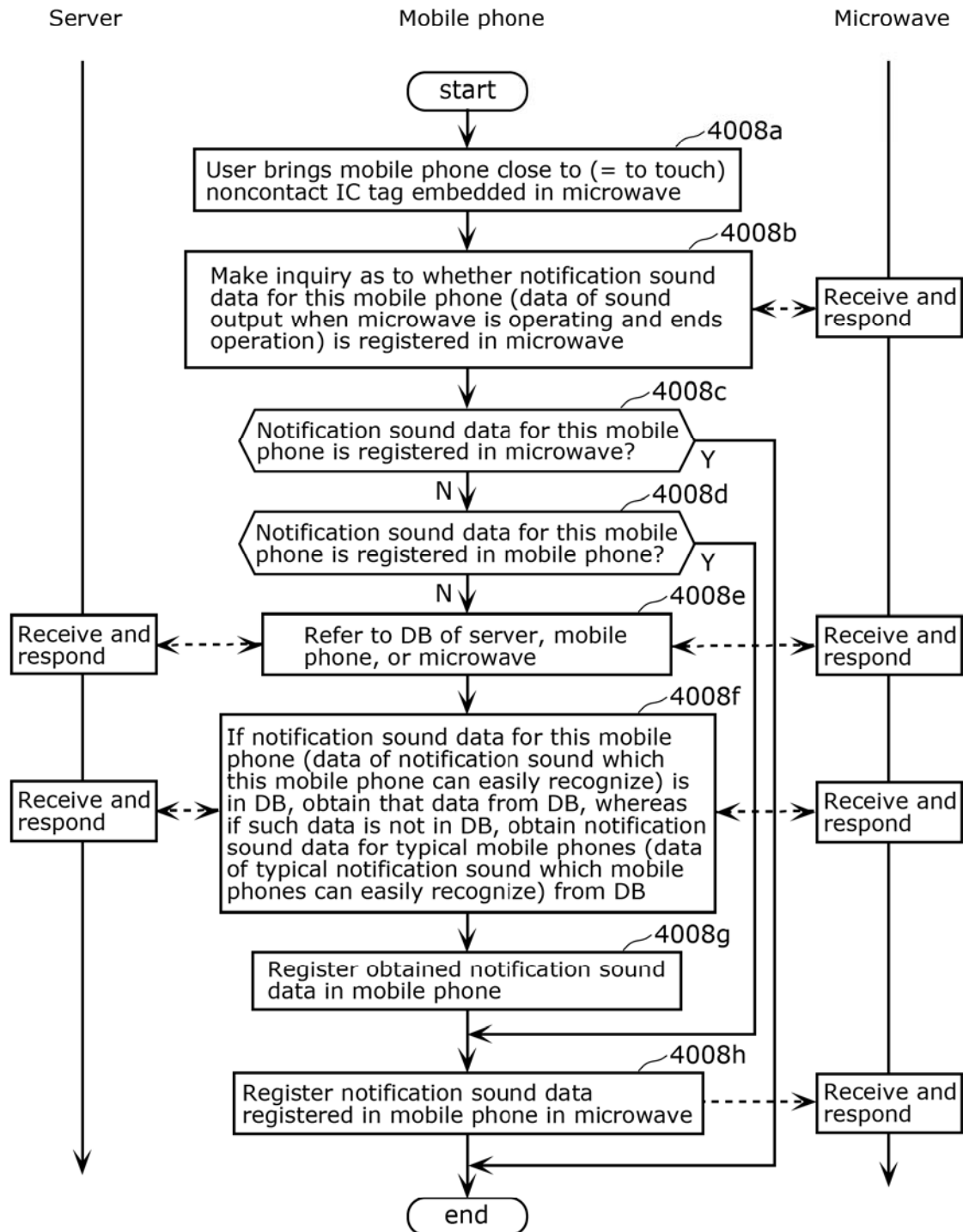


FIG. 152

(Processing e) Obtain notification sound for microwave from DB of server, for instance, and set sound in microwave



# FIG. 153

(Processing f) Adjust notification sound of microwave

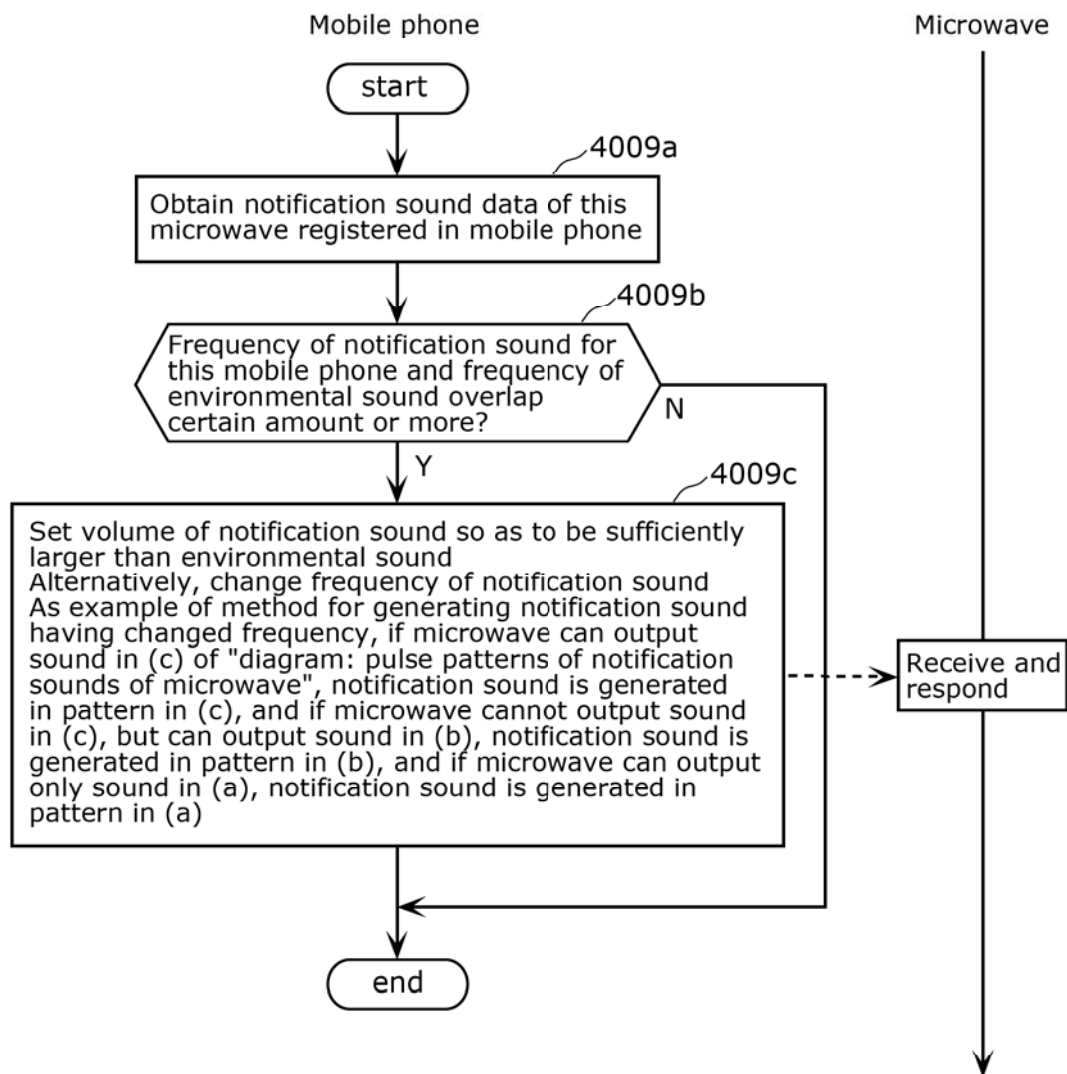


FIG. 154

Diagram: Pulse patterns of notification sounds of microwave

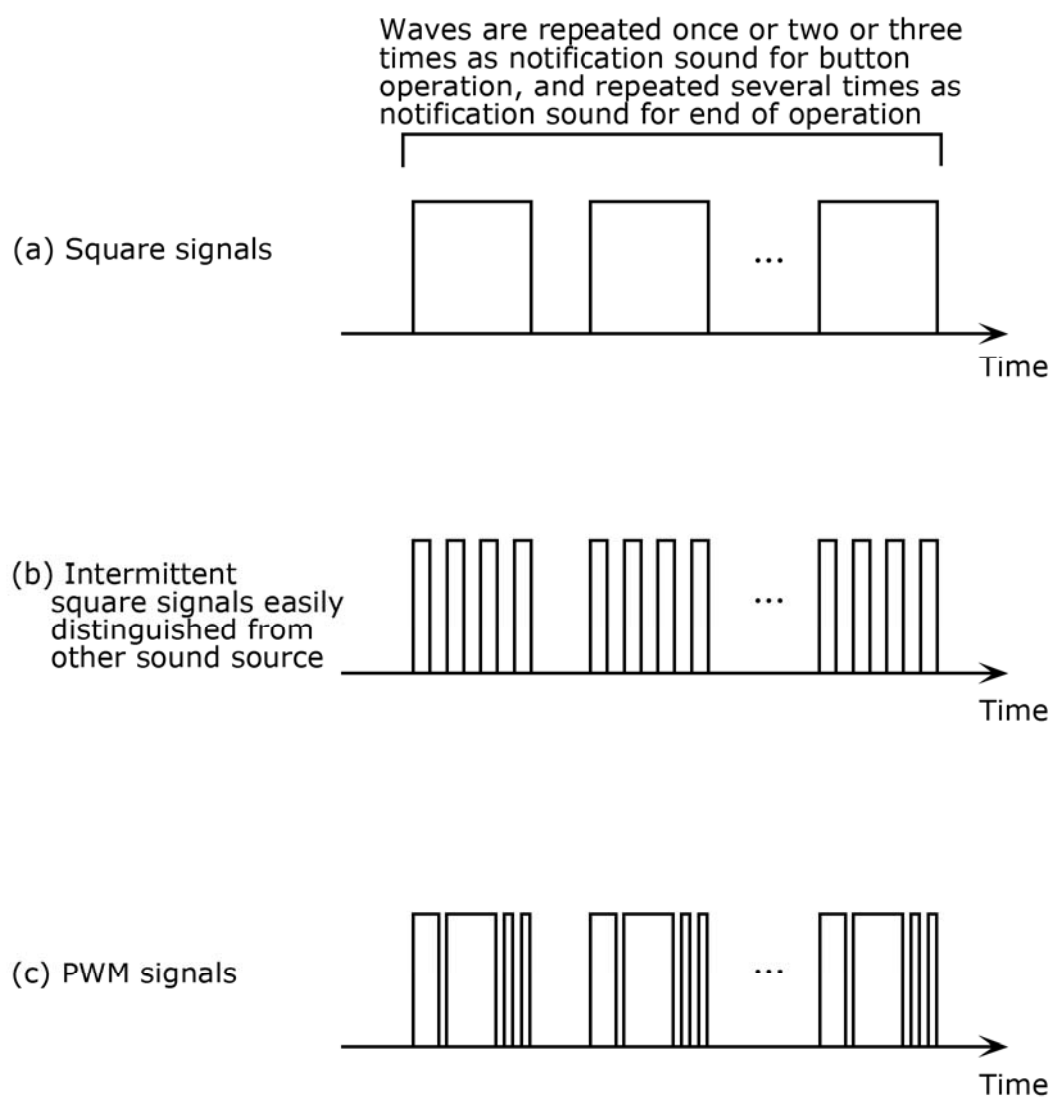




FIG. 155

Display details of cooking

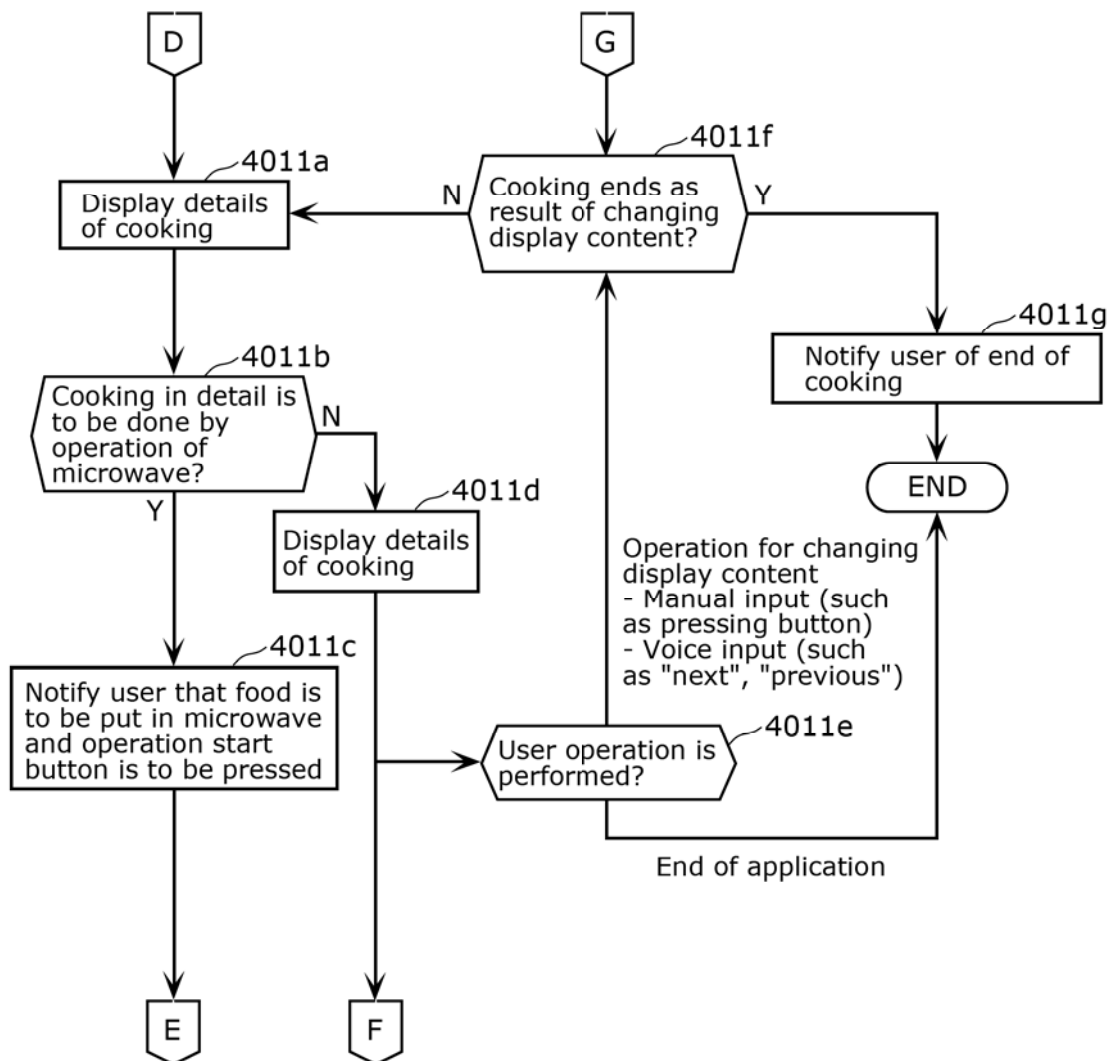


FIG. 156

Recognize notification sound of microwave

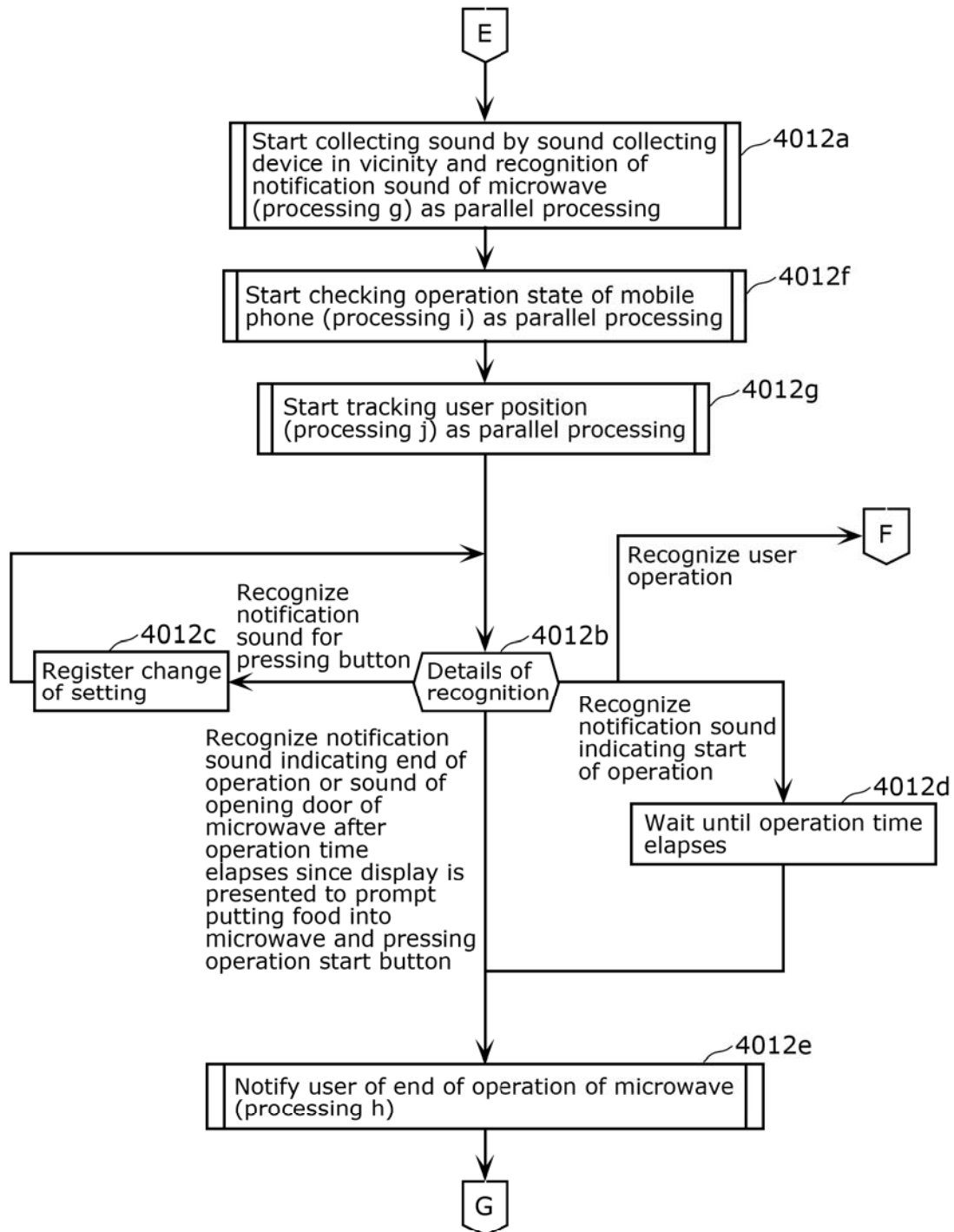


FIG. 157

(Processing g) Collect sound by sound collecting device in vicinity and recognize notification sound of microwave

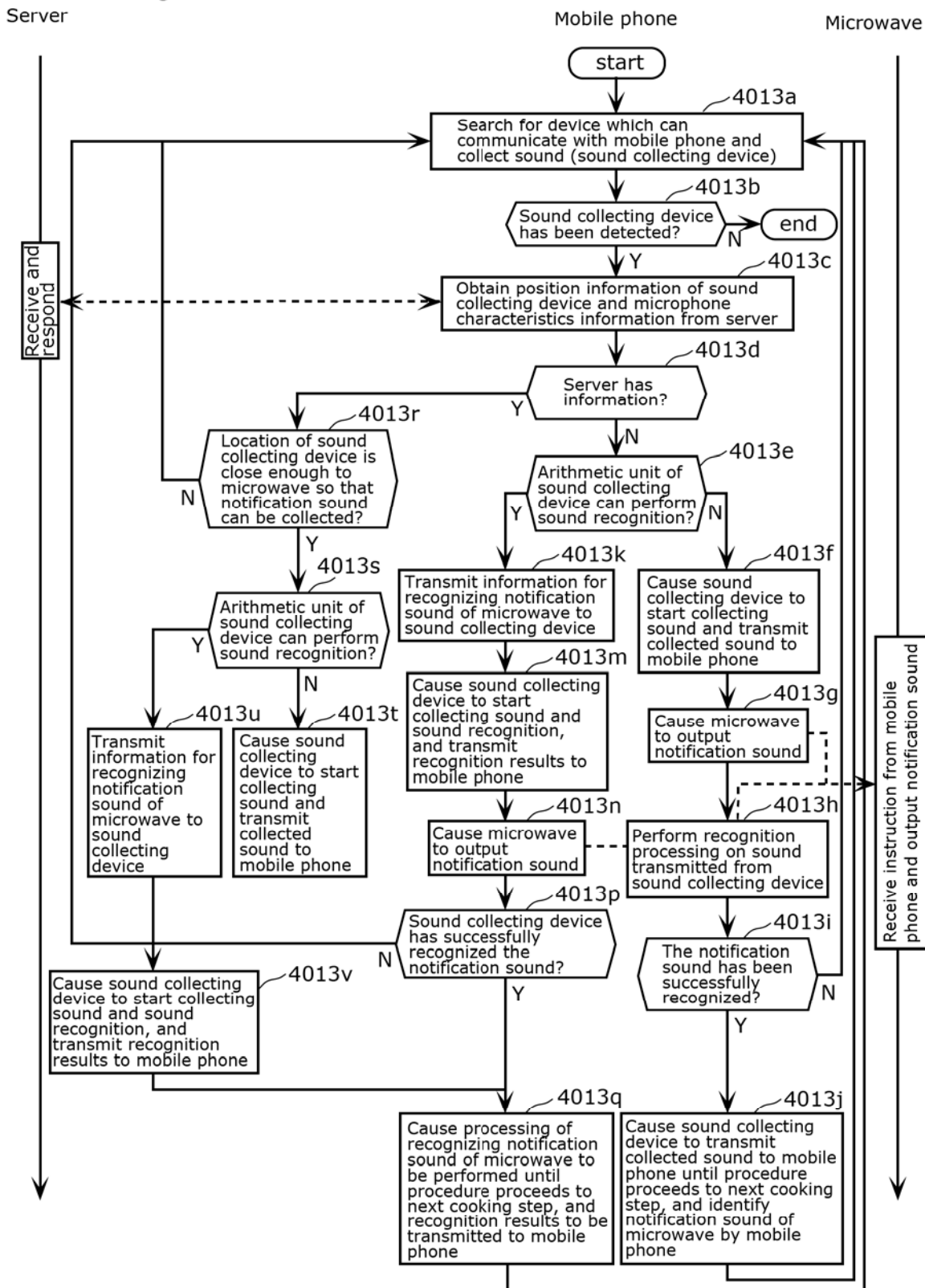


FIG. 158

(Processing h) Notify user of end of operation of microwave

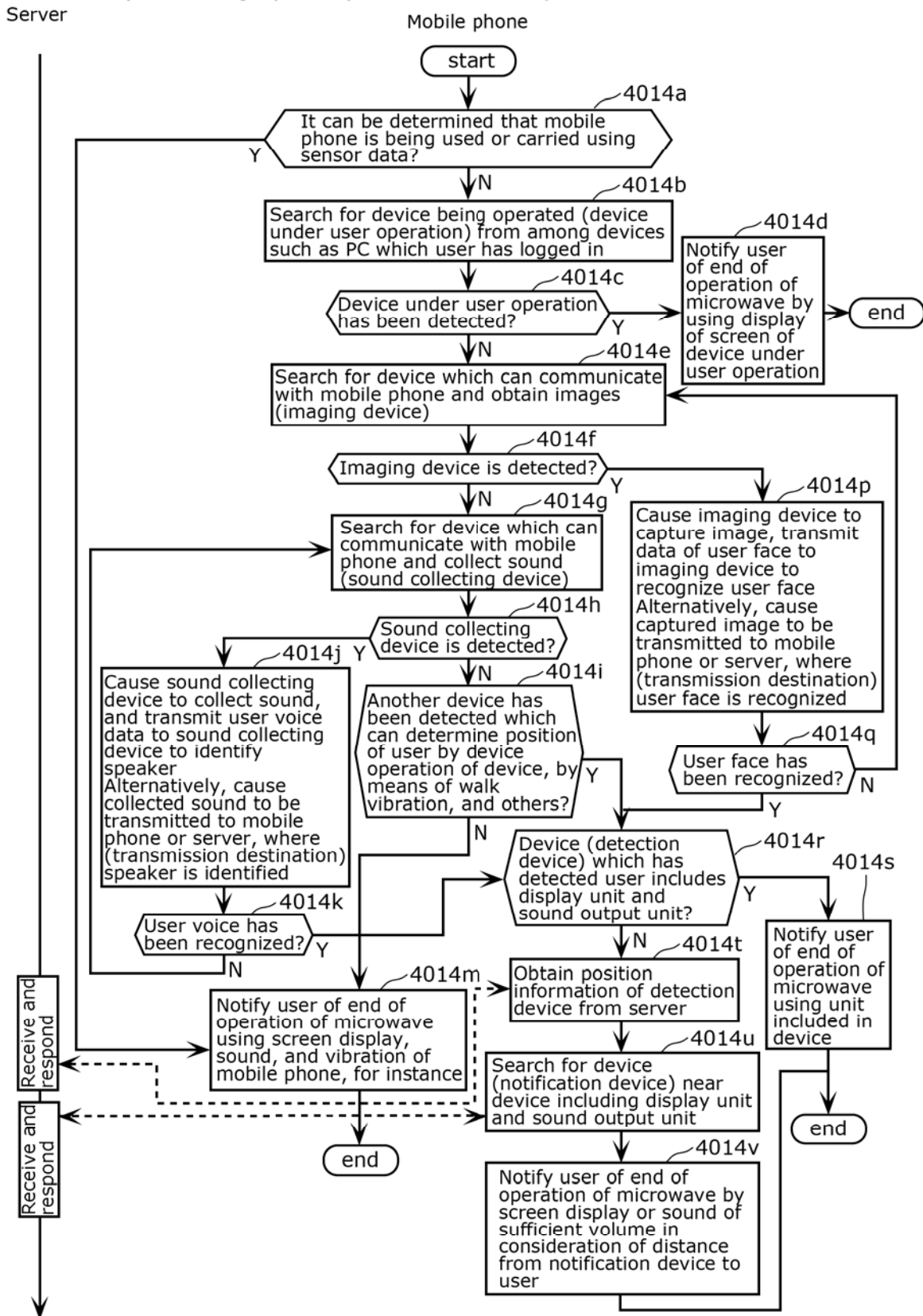
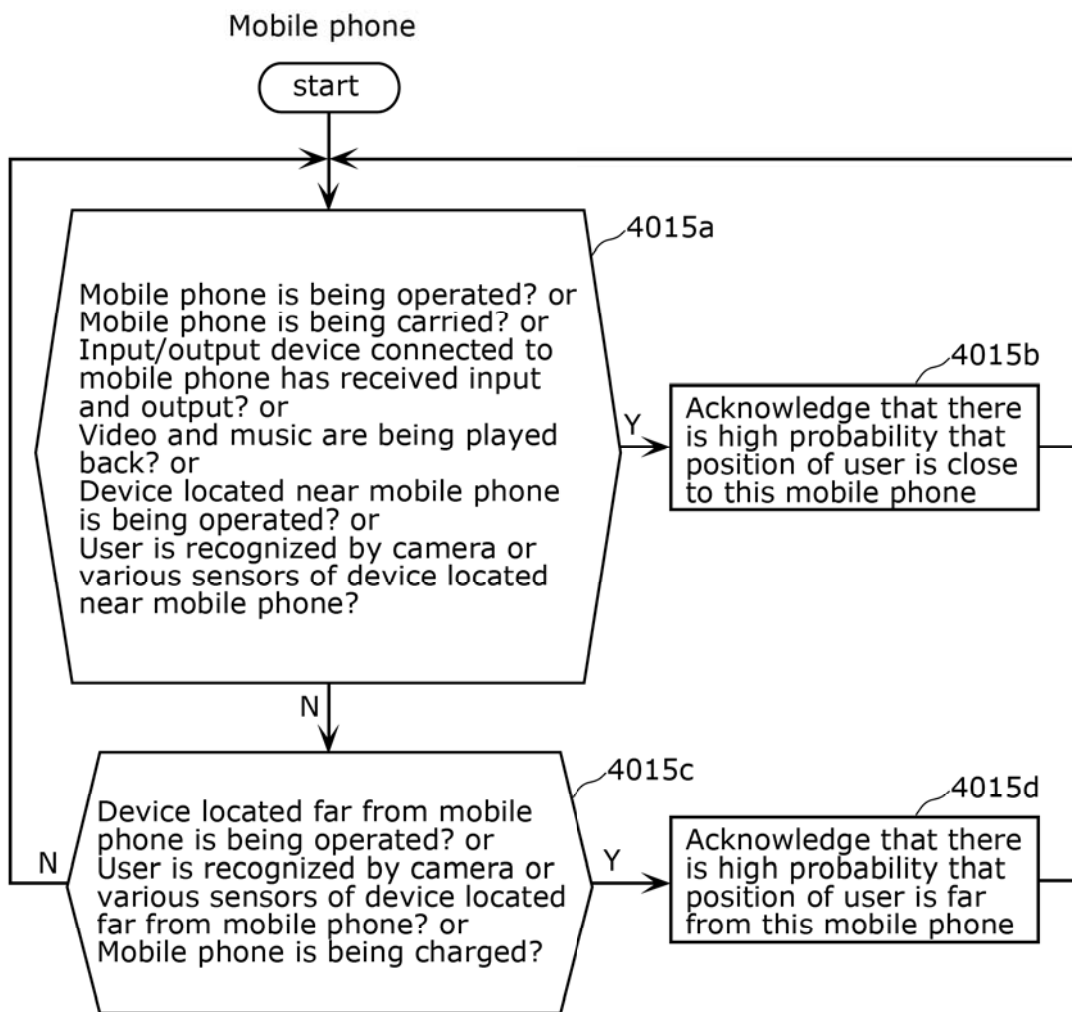


FIG. 159

(Processing i) Check operation state of mobile phone



# FIG. 160

(Processing j) Track user position

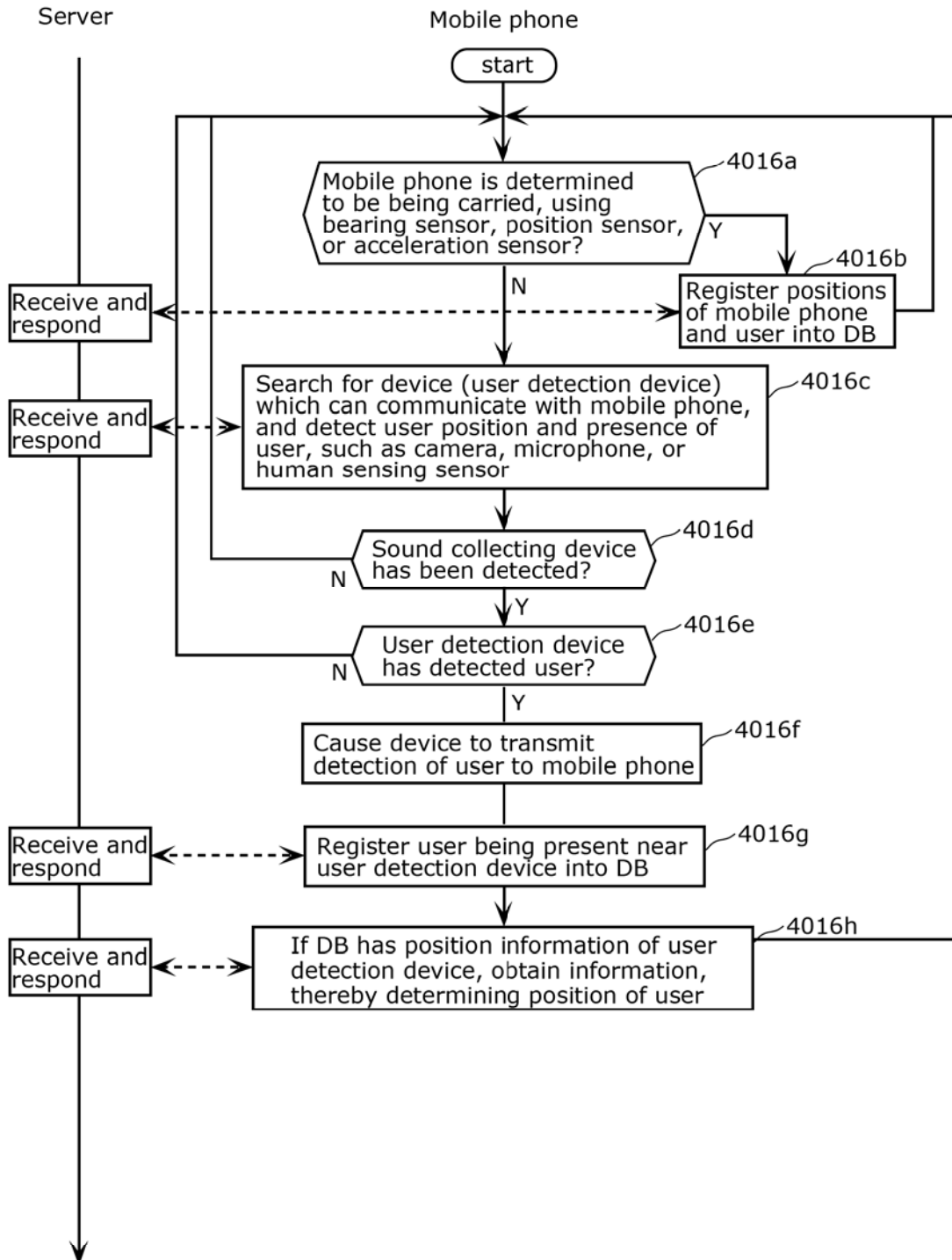
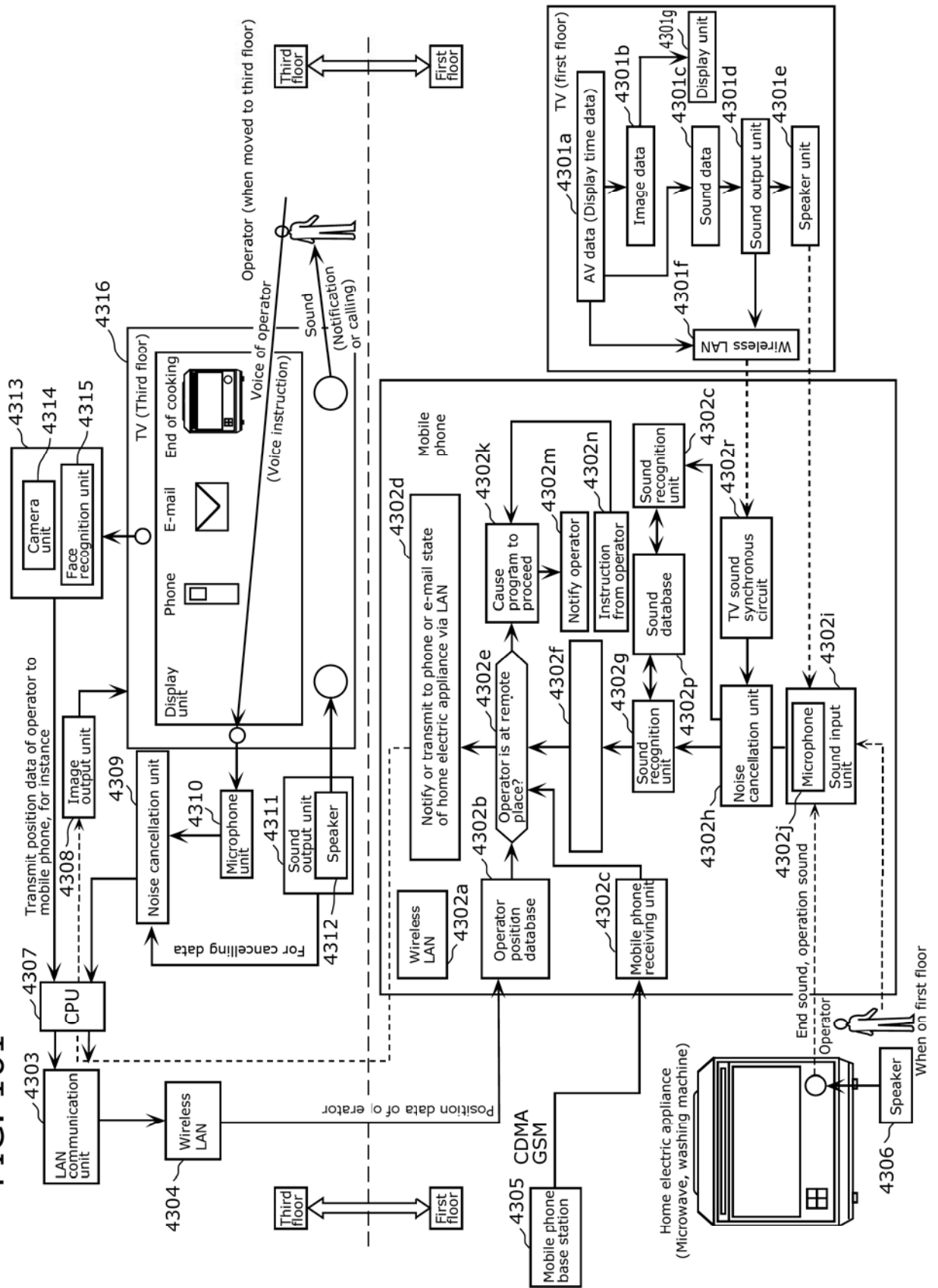


FIG. 161



# FIG. 162

## Database

| Microwave table 4040a |                                                                                                                           |                                                                                 |                                                                                 |     |                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------|
| Model ID of microwave | Data for identifying sound which can be output by microwave (speaker characteristics and modulation method, for instance) | Notification sound data for mobile phone model A (sound easily recognized by A) | Notification sound data for mobile phone model B (sound easily recognized by B) | ... | Notification sound data for typical mobile phone (sound easily recognized on average) |
|                       |                                                                                                                           |                                                                                 |                                                                                 |     |                                                                                       |
|                       |                                                                                                                           |                                                                                 |                                                                                 |     |                                                                                       |

| Mobile phone table 4040a |                       |         |                            |
|--------------------------|-----------------------|---------|----------------------------|
| Mobile phone ID          | Mobile phone model ID | User ID | Mobile phone position data |
|                          |                       |         |                            |
|                          |                       |         |                            |

| Mobile phone model table 4040c |                                  |
|--------------------------------|----------------------------------|
| Mobile phone model ID          | Sound-collecting characteristics |
|                                |                                  |
|                                |                                  |

| User voice characteristic table 4040d |                             |
|---------------------------------------|-----------------------------|
| User ID                               | User voice acoustic feature |
|                                       |                             |
|                                       |                             |

| User keyword voice table 4040e |                                                     |
|--------------------------------|-----------------------------------------------------|
| User ID                        | Voice waveform data obtained when user says keyword |
|                                |                                                     |
|                                |                                                     |

| User owned device position table 4040f |                 |                            |
|----------------------------------------|-----------------|----------------------------|
| User ID                                | Owned device ID | Owned device position data |
|                                        |                 |                            |
|                                        |                 |                            |

| User owned device sound data table 4040g |                 |                                   |
|------------------------------------------|-----------------|-----------------------------------|
| User ID                                  | Owned device ID | Sound data output by owned device |
|                                          |                 |                                   |
|                                          |                 |                                   |

| User position table 4040h |                    |
|---------------------------|--------------------|
| User ID                   | User position data |
|                           |                    |
|                           |                    |



FIG. 163

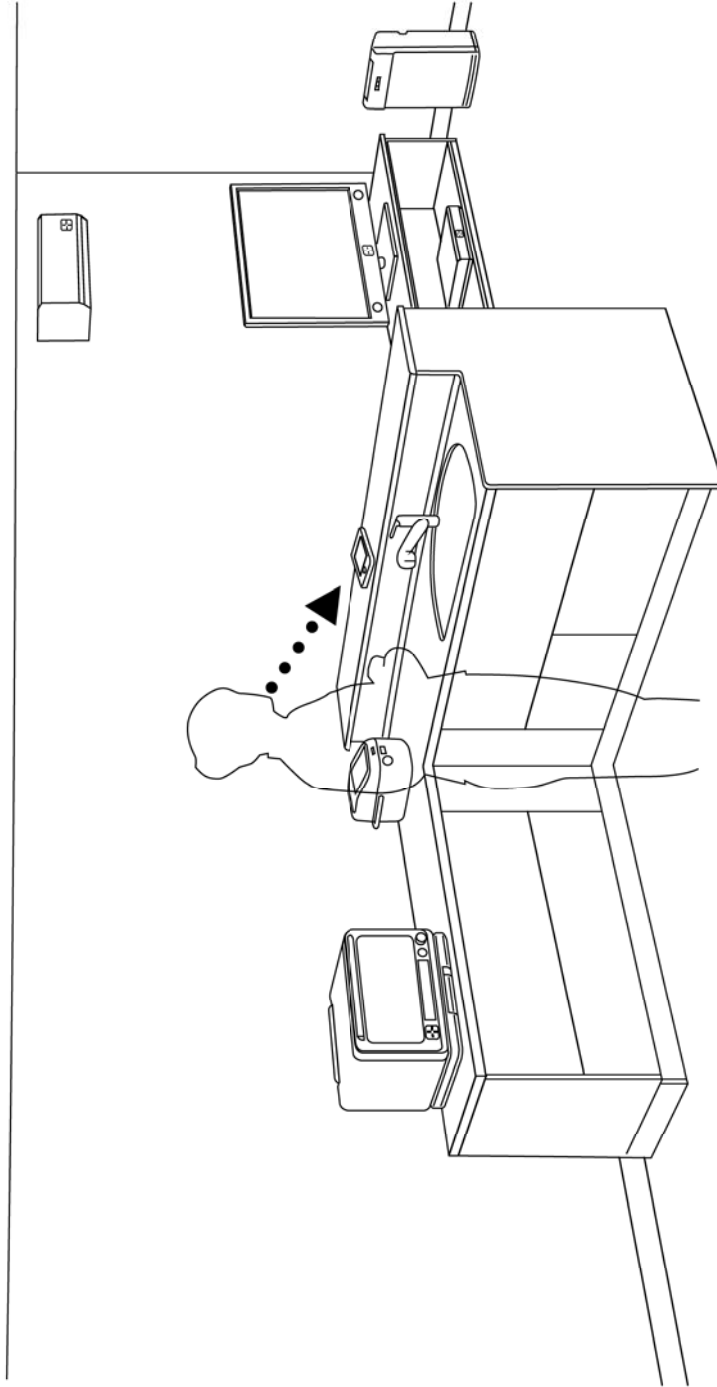


FIG. 164

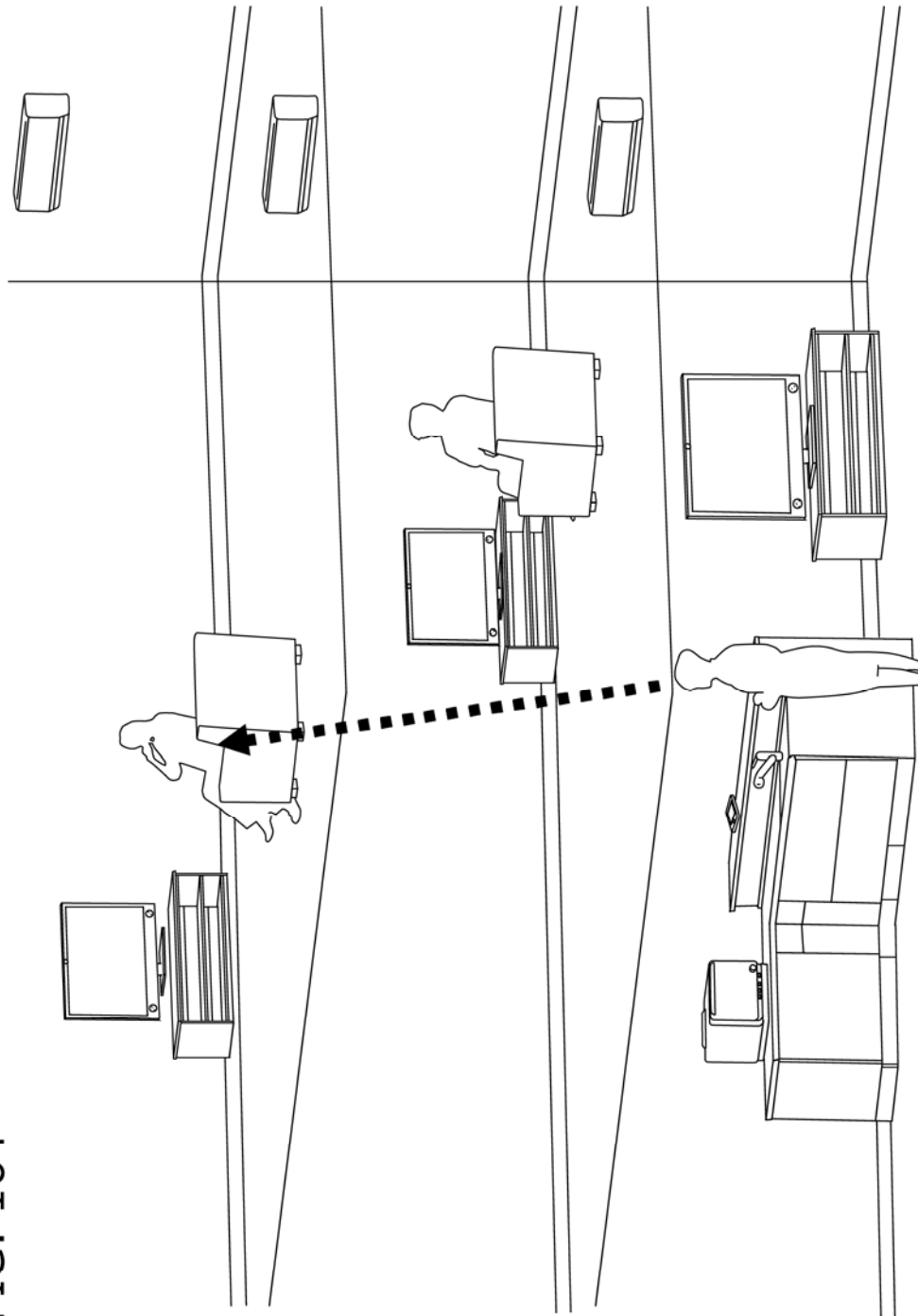


FIG. 165

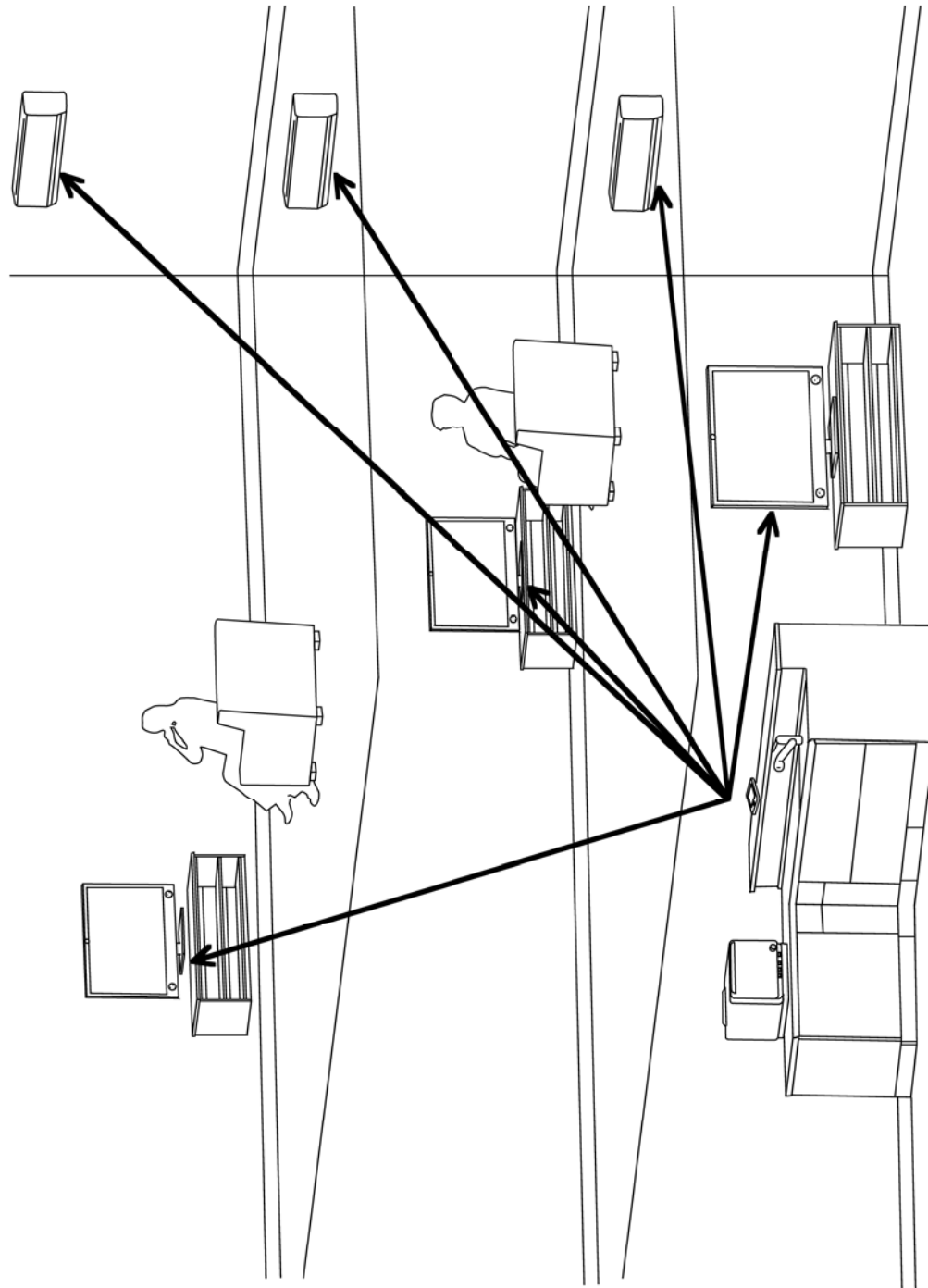


FIG. 166

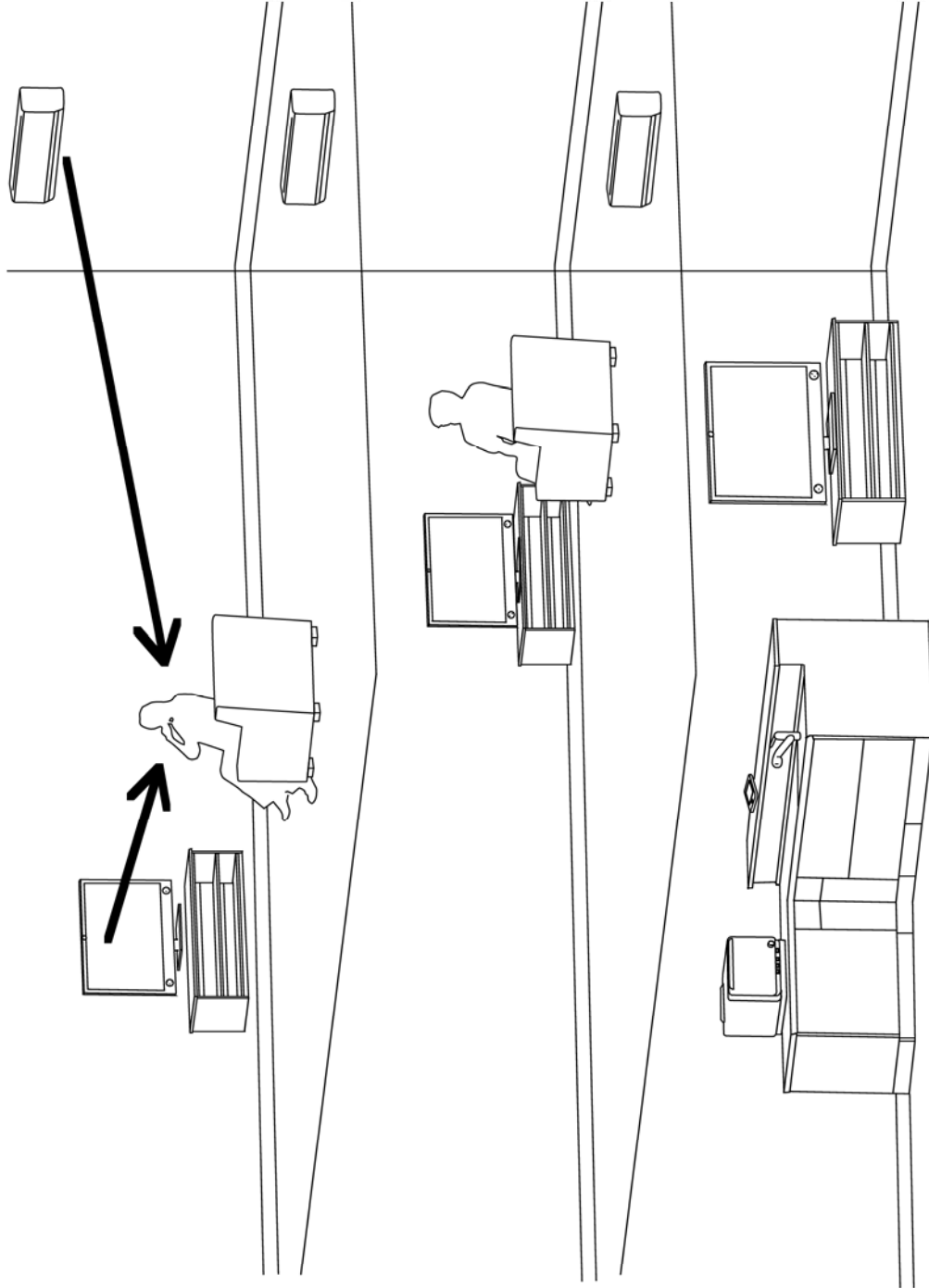


FIG. 167

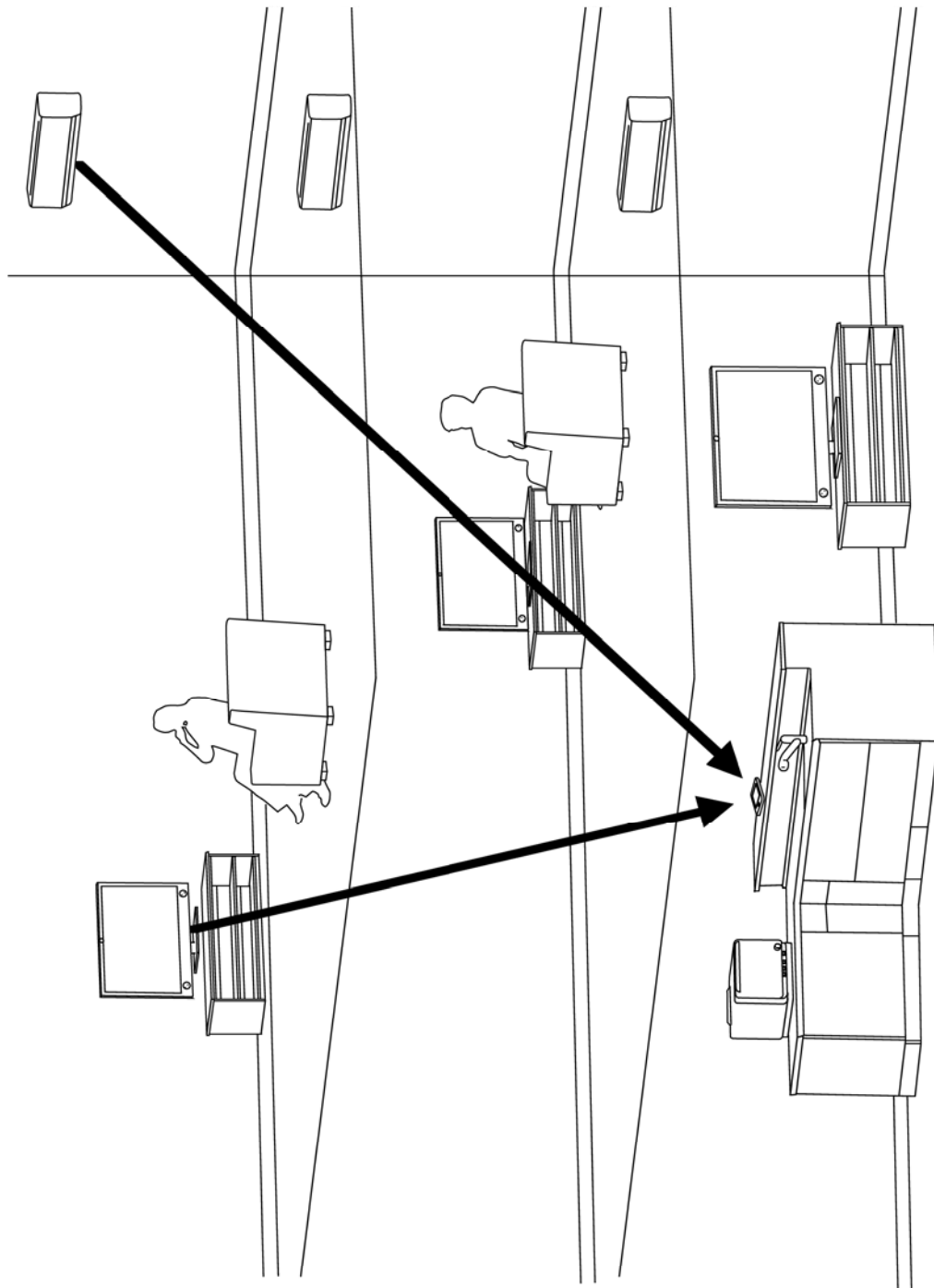


FIG. 168

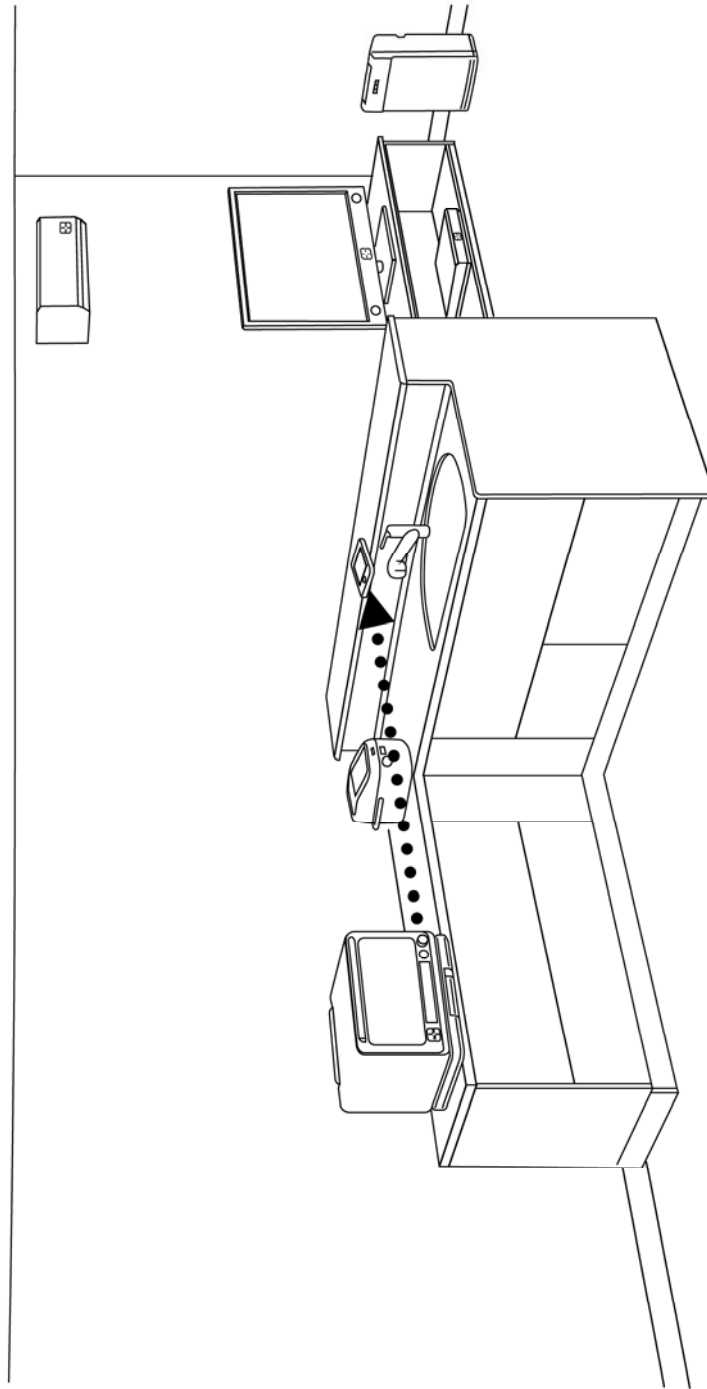


FIG. 169

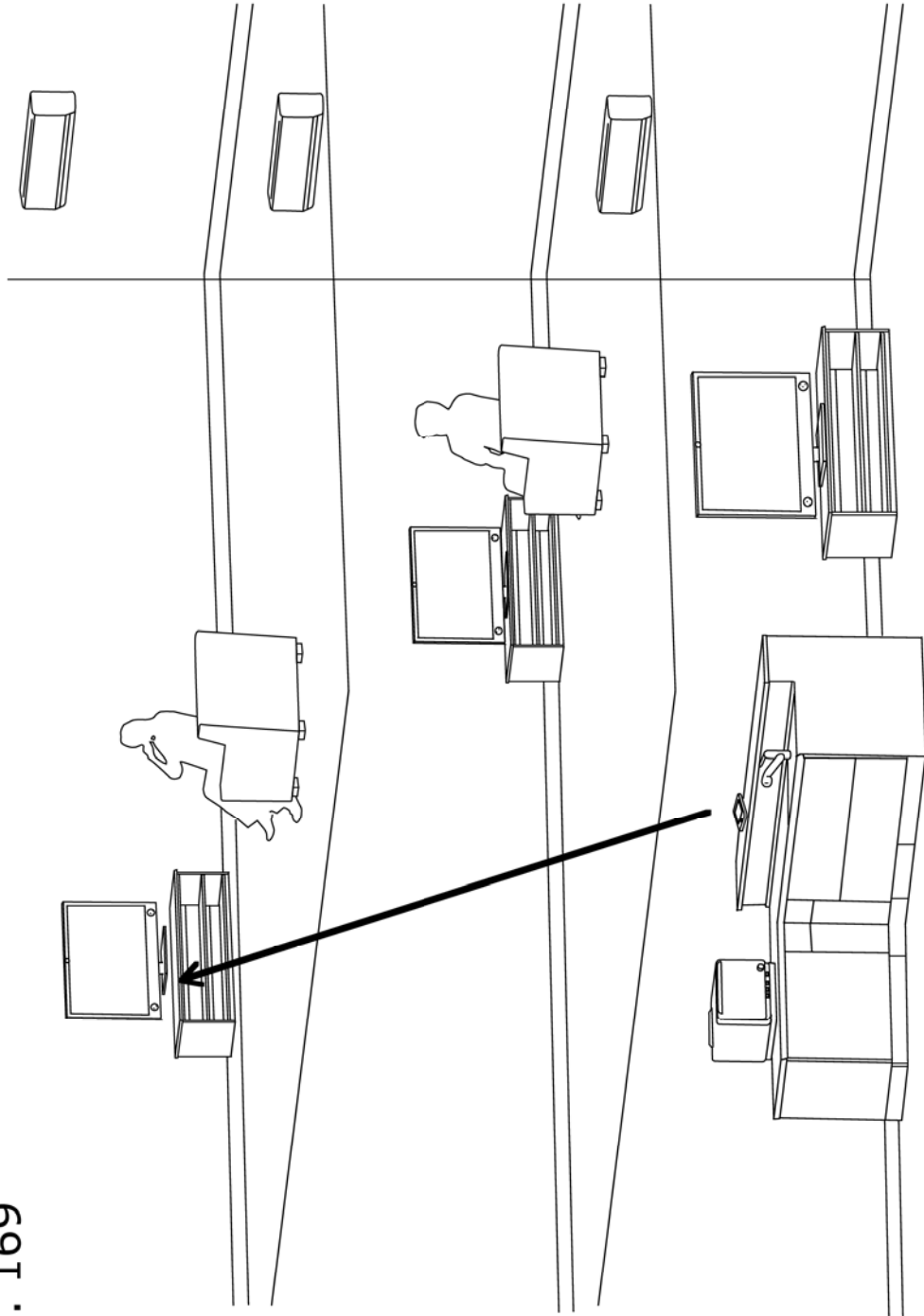


FIG. 170

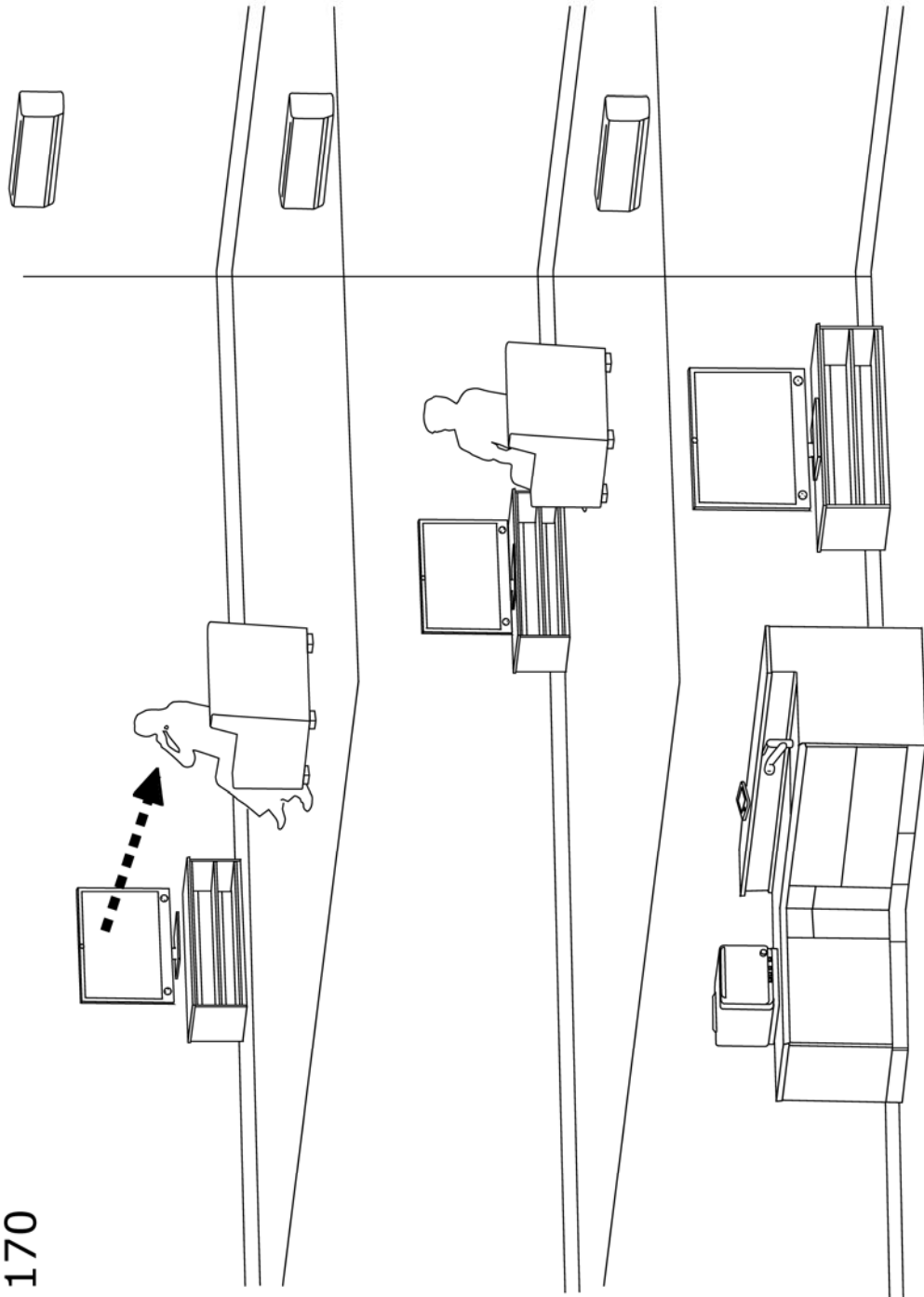




FIG. 171

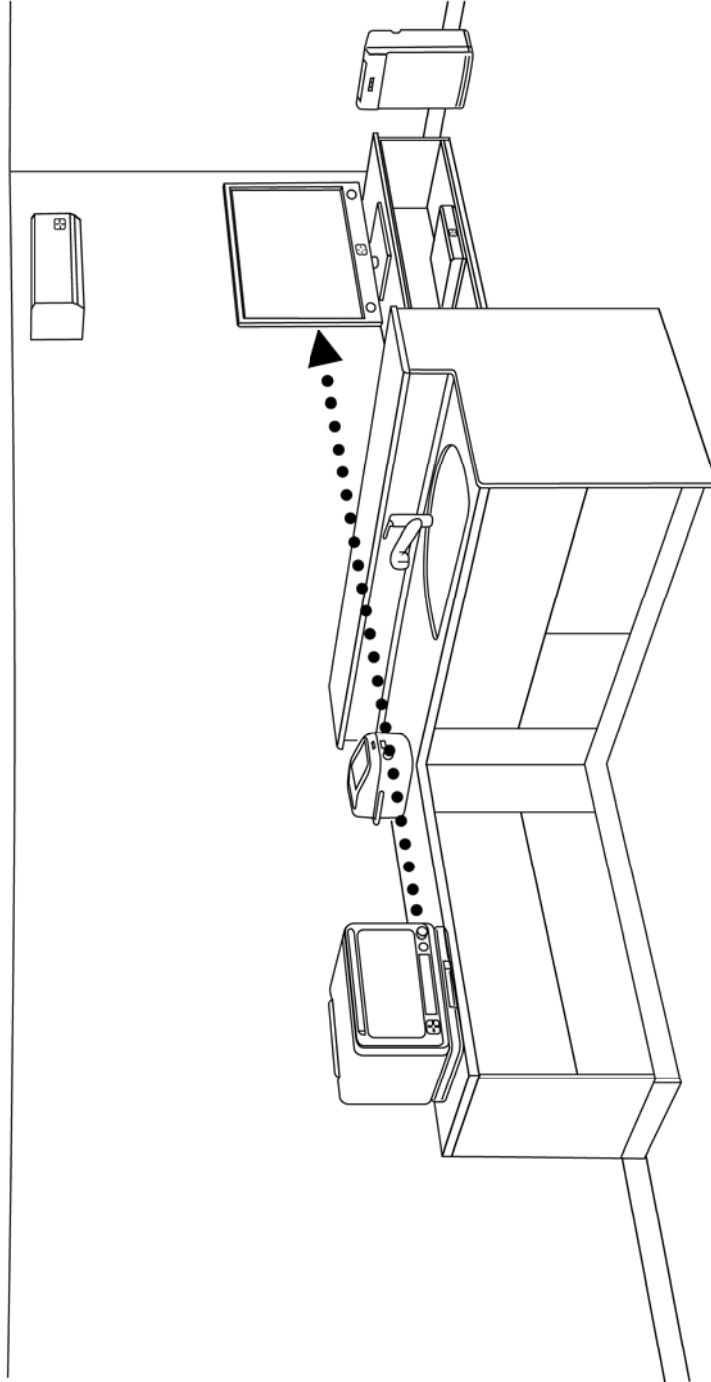


FIG. 172

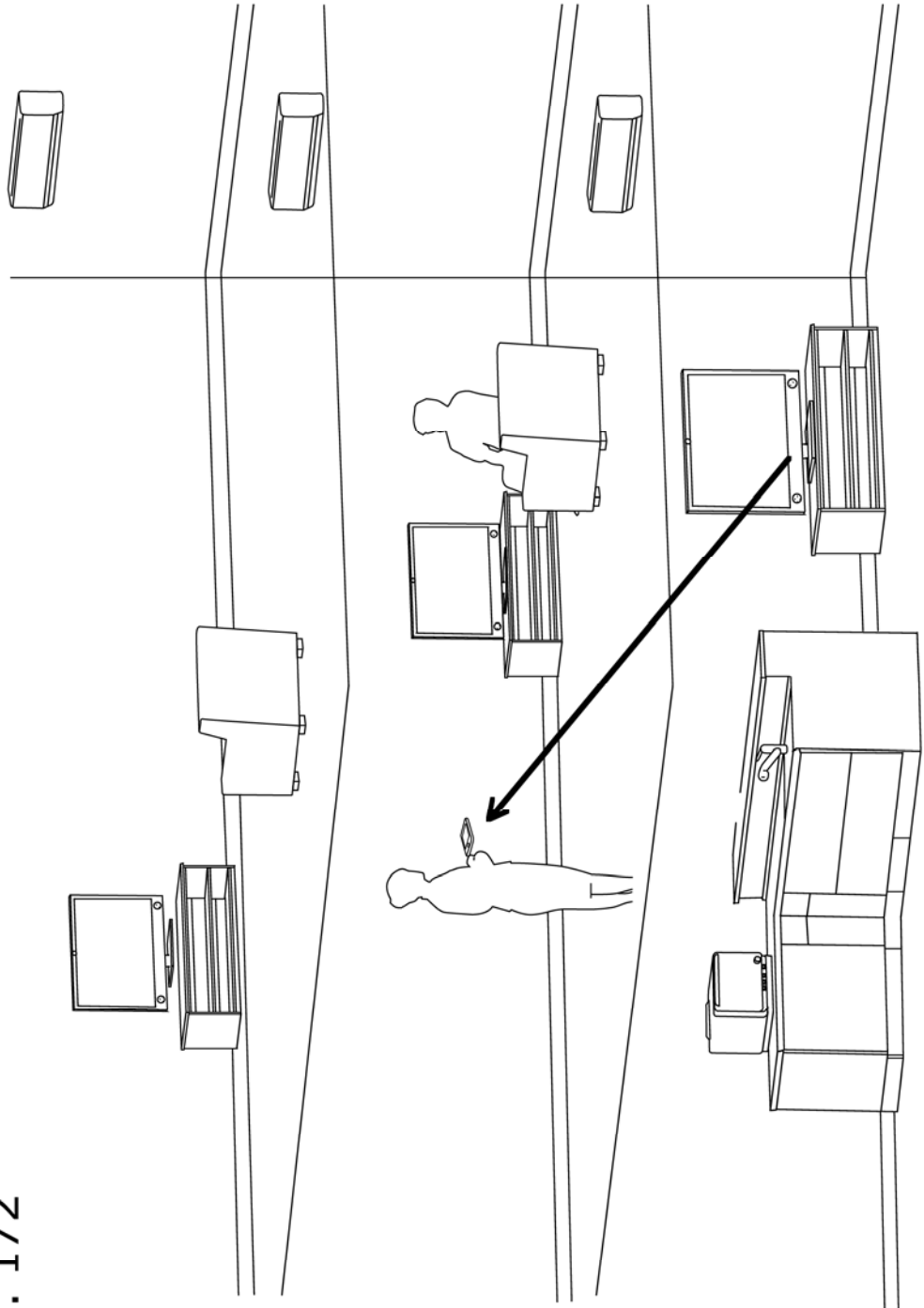


FIG. 173

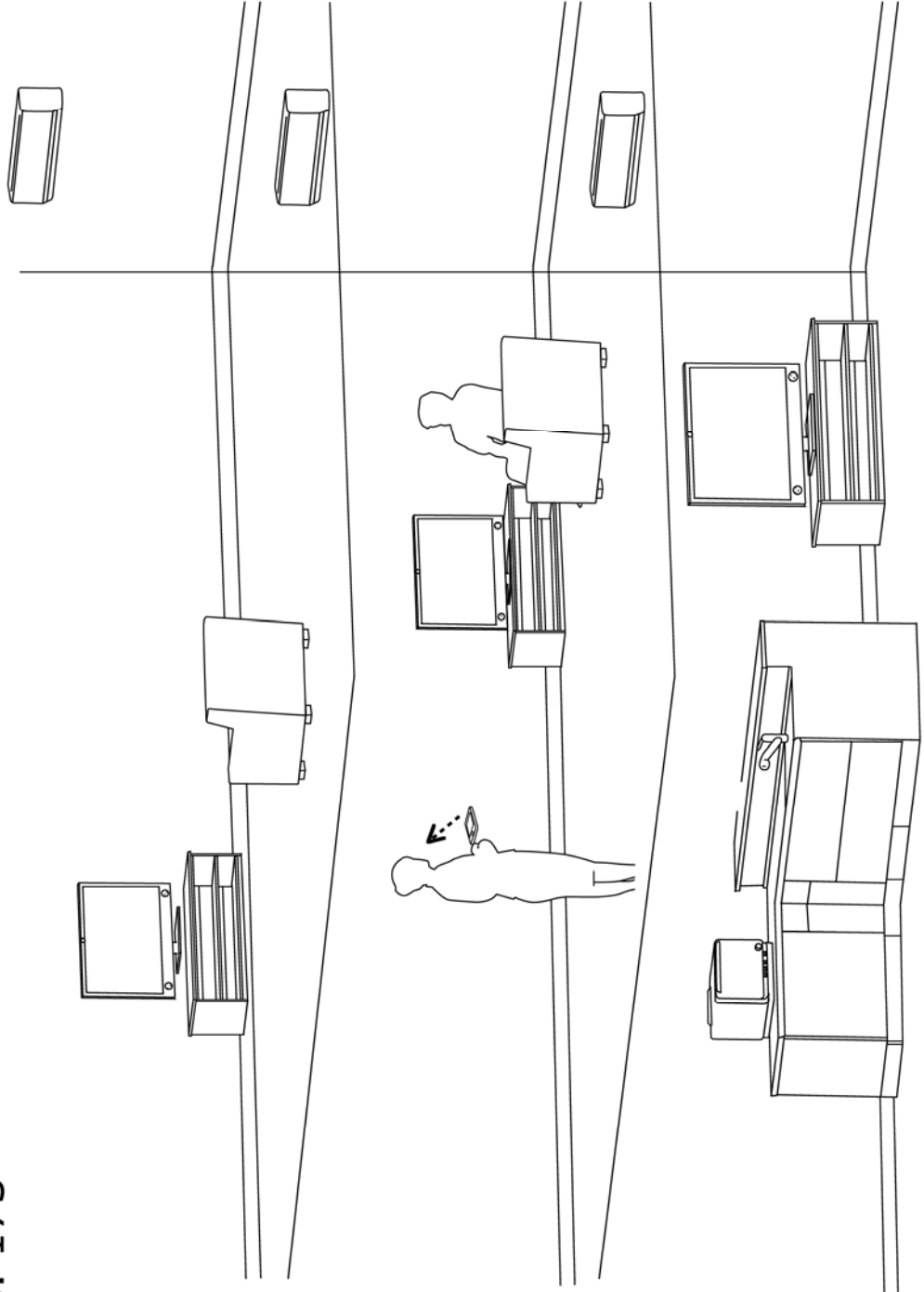


FIG. 174

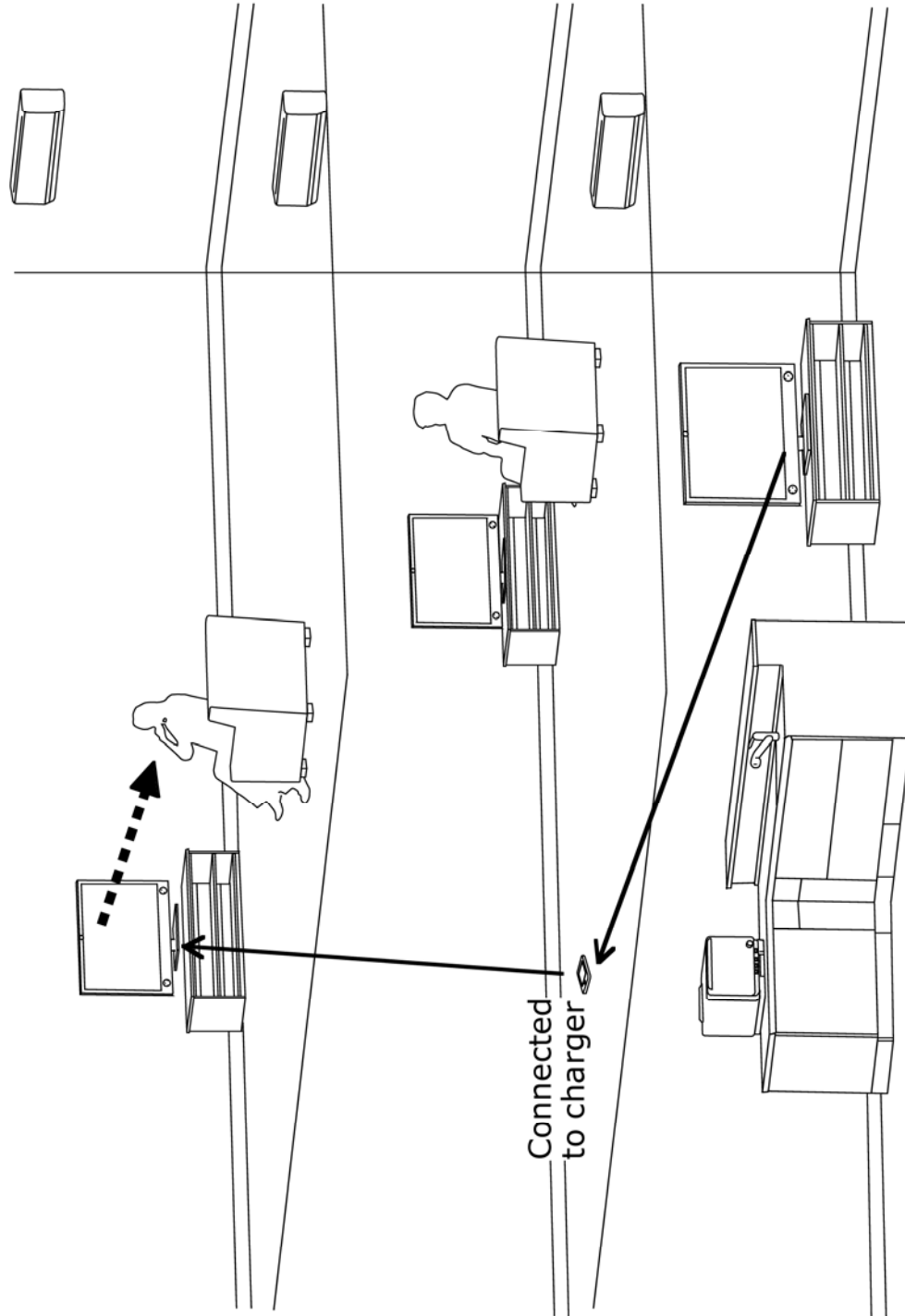


FIG. 175

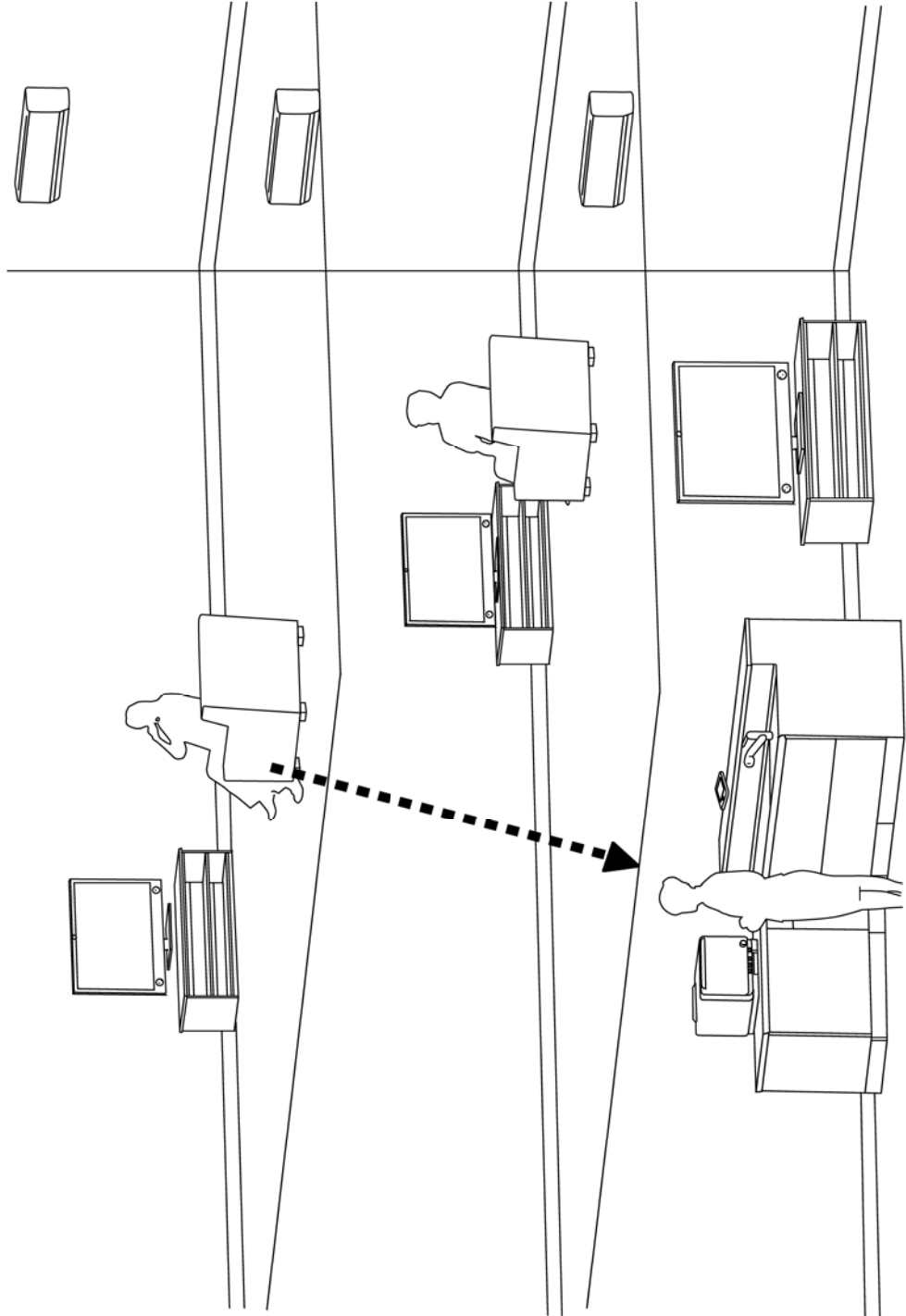


FIG. 176

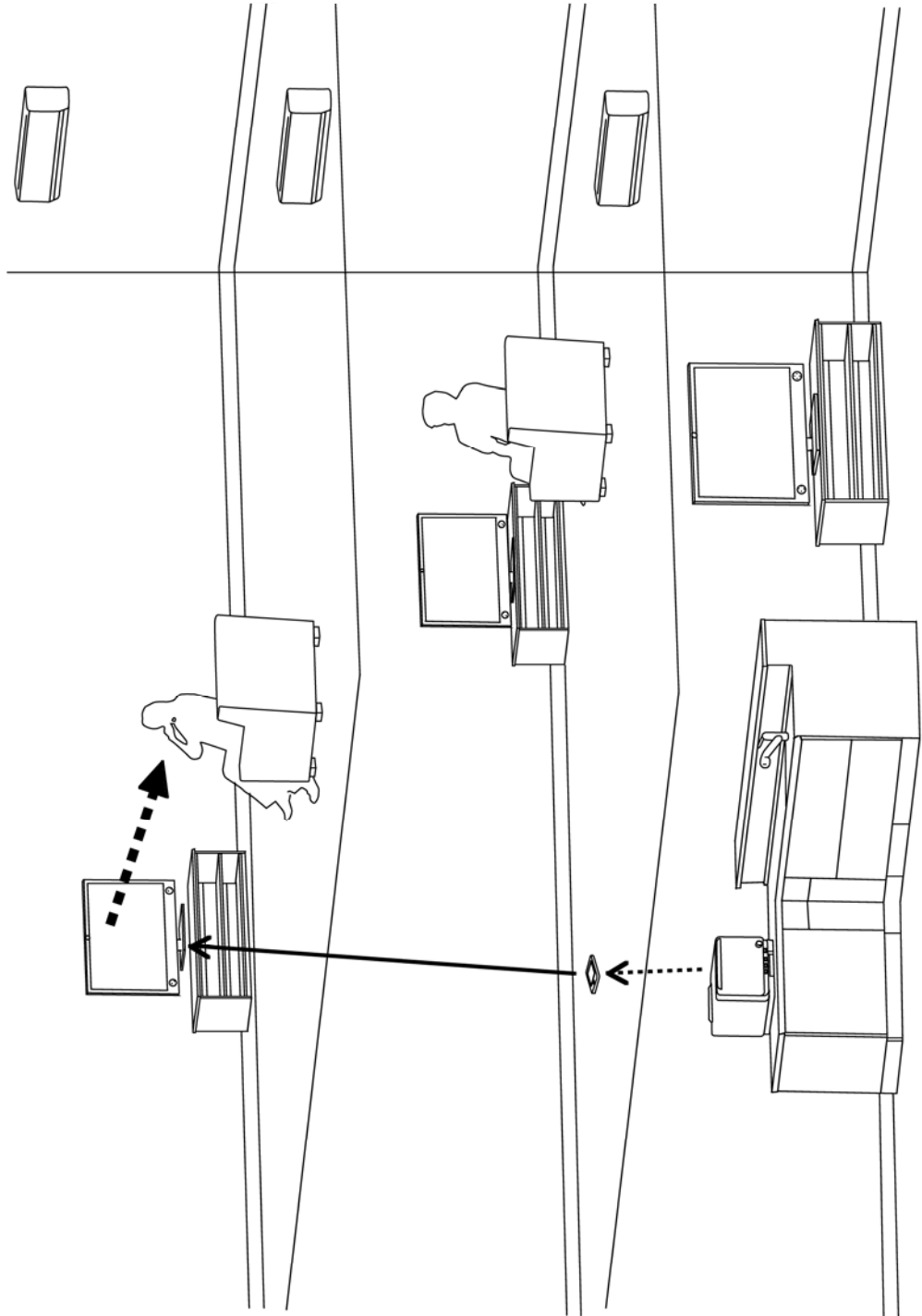


FIG. 177

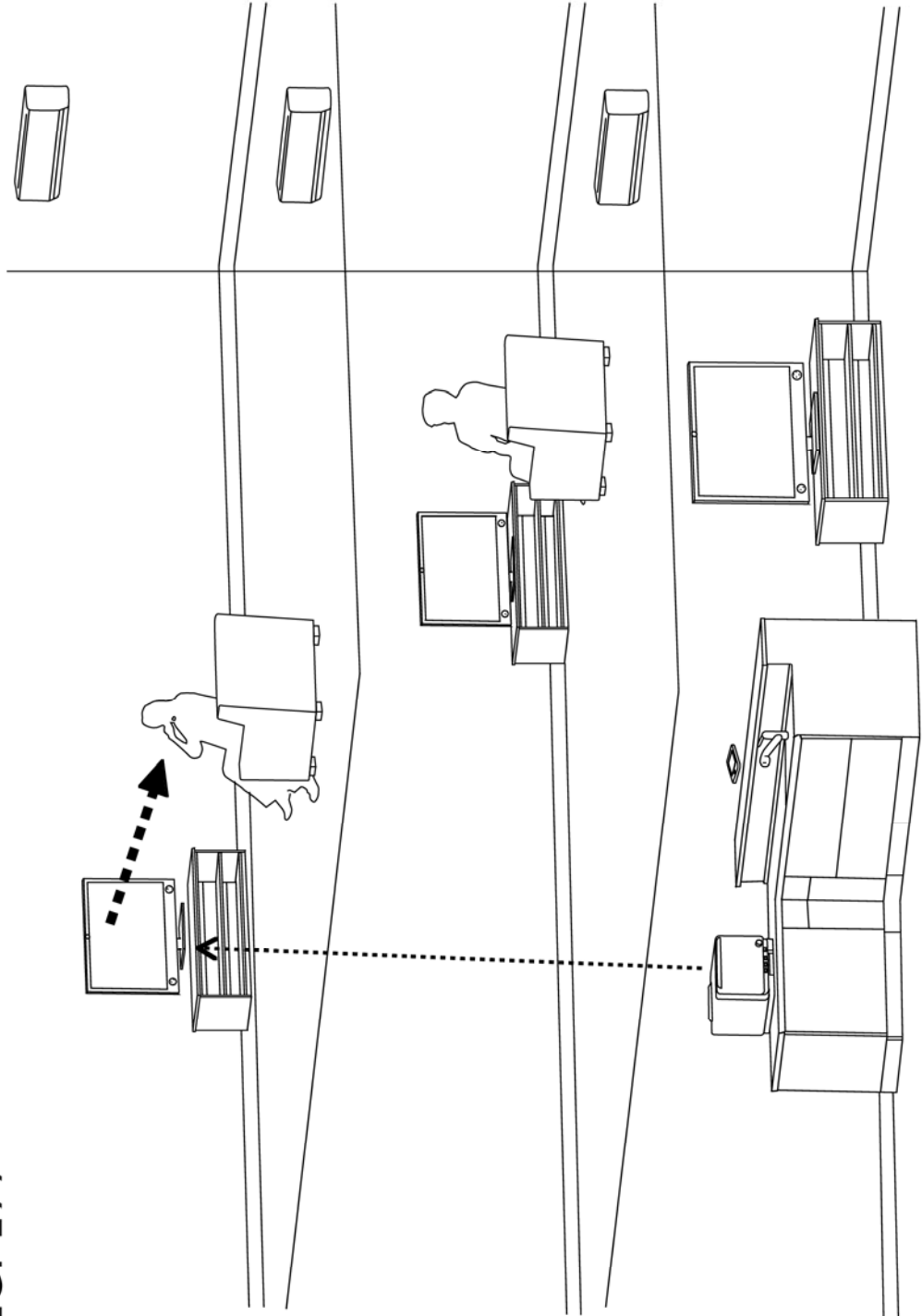


FIG. 178

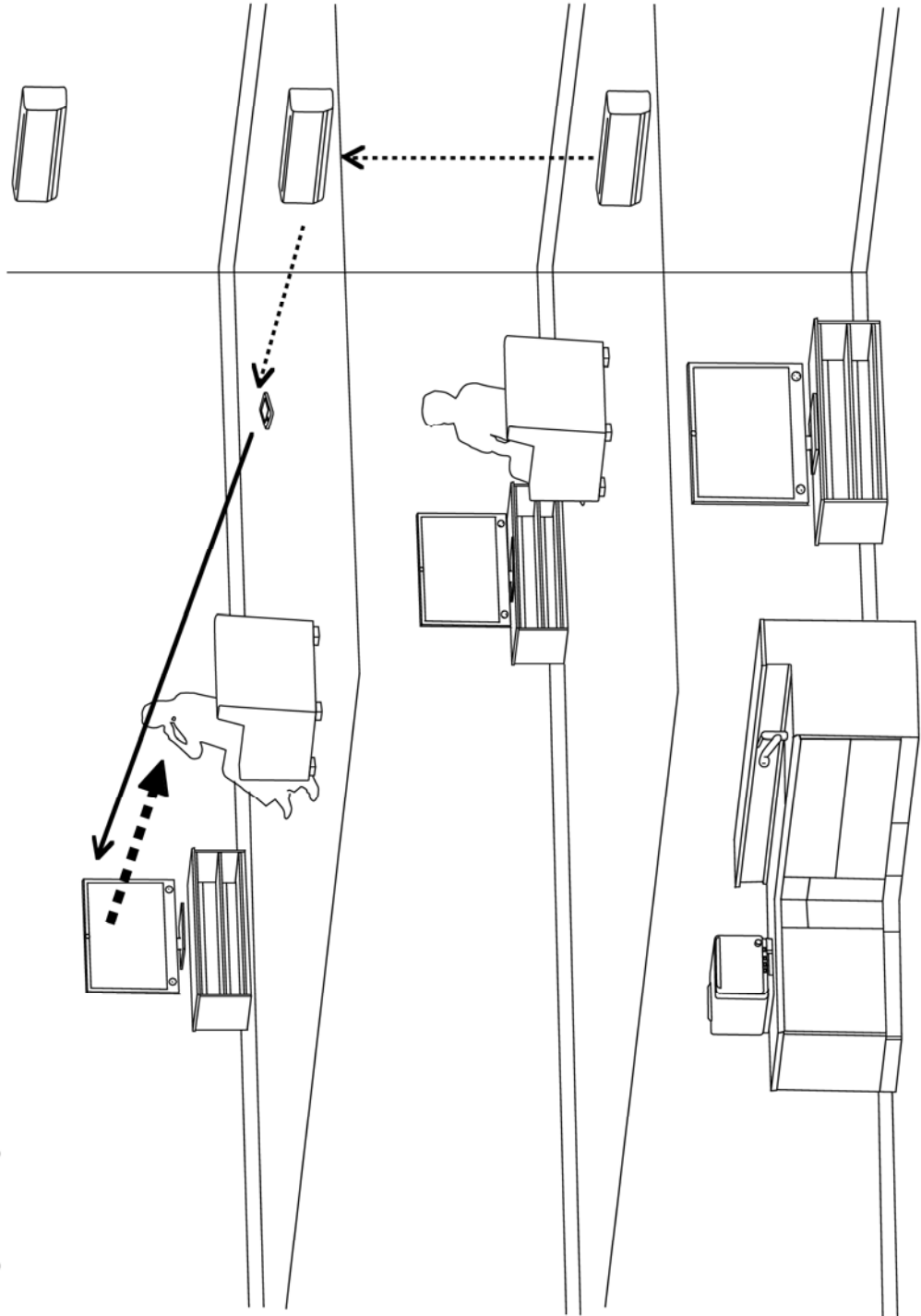




FIG. 179

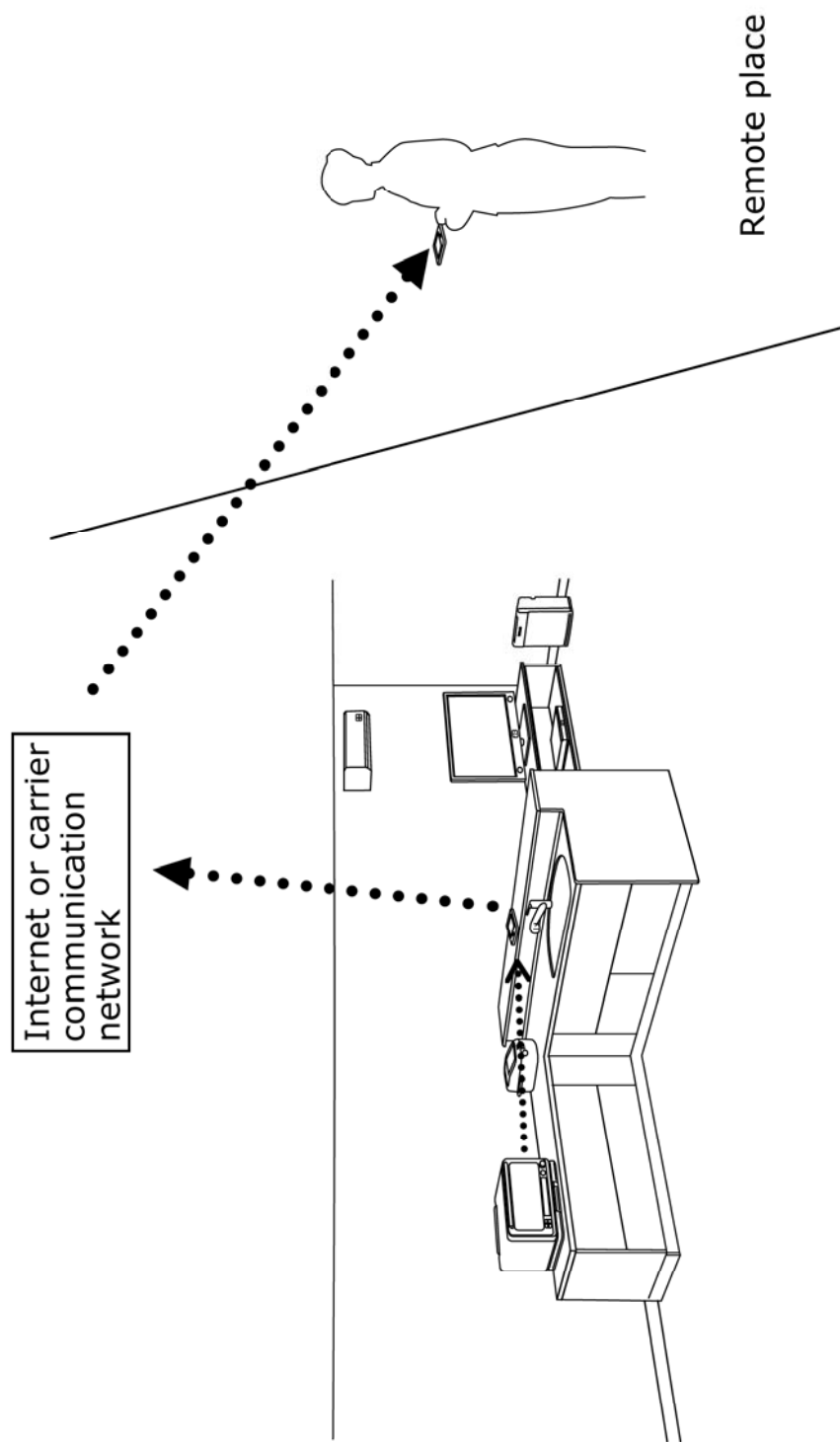


FIG. 180

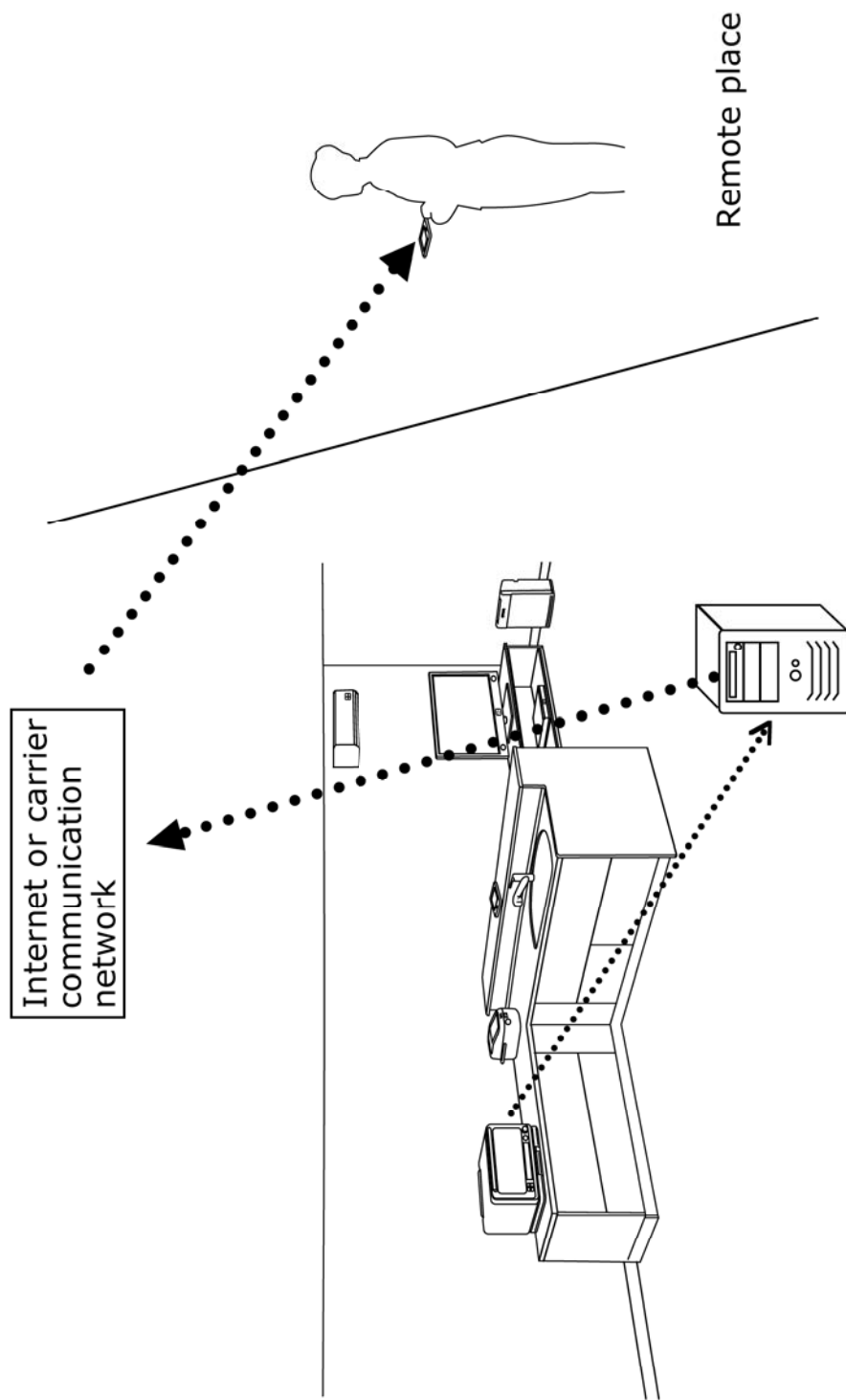


FIG. 181

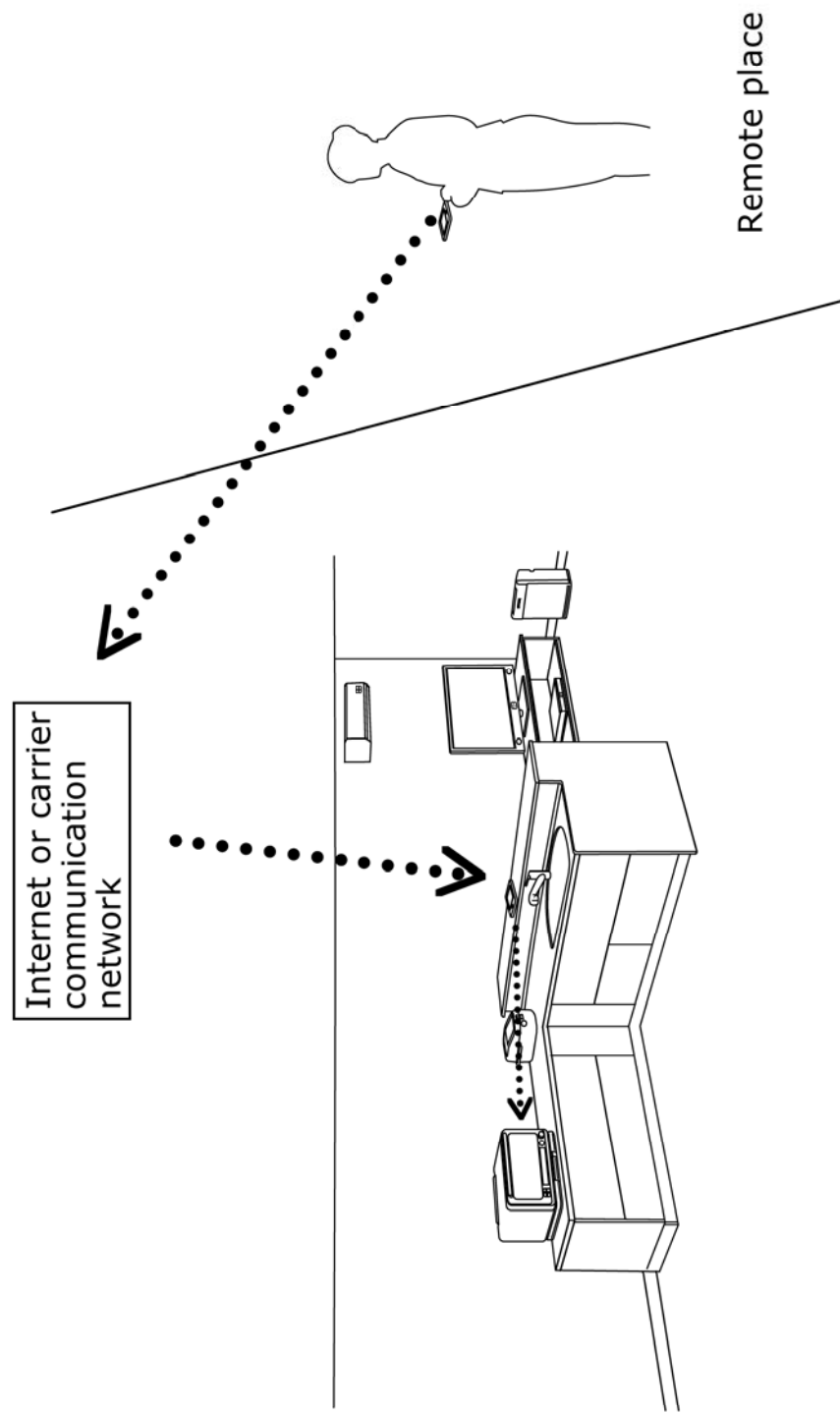


FIG. 182

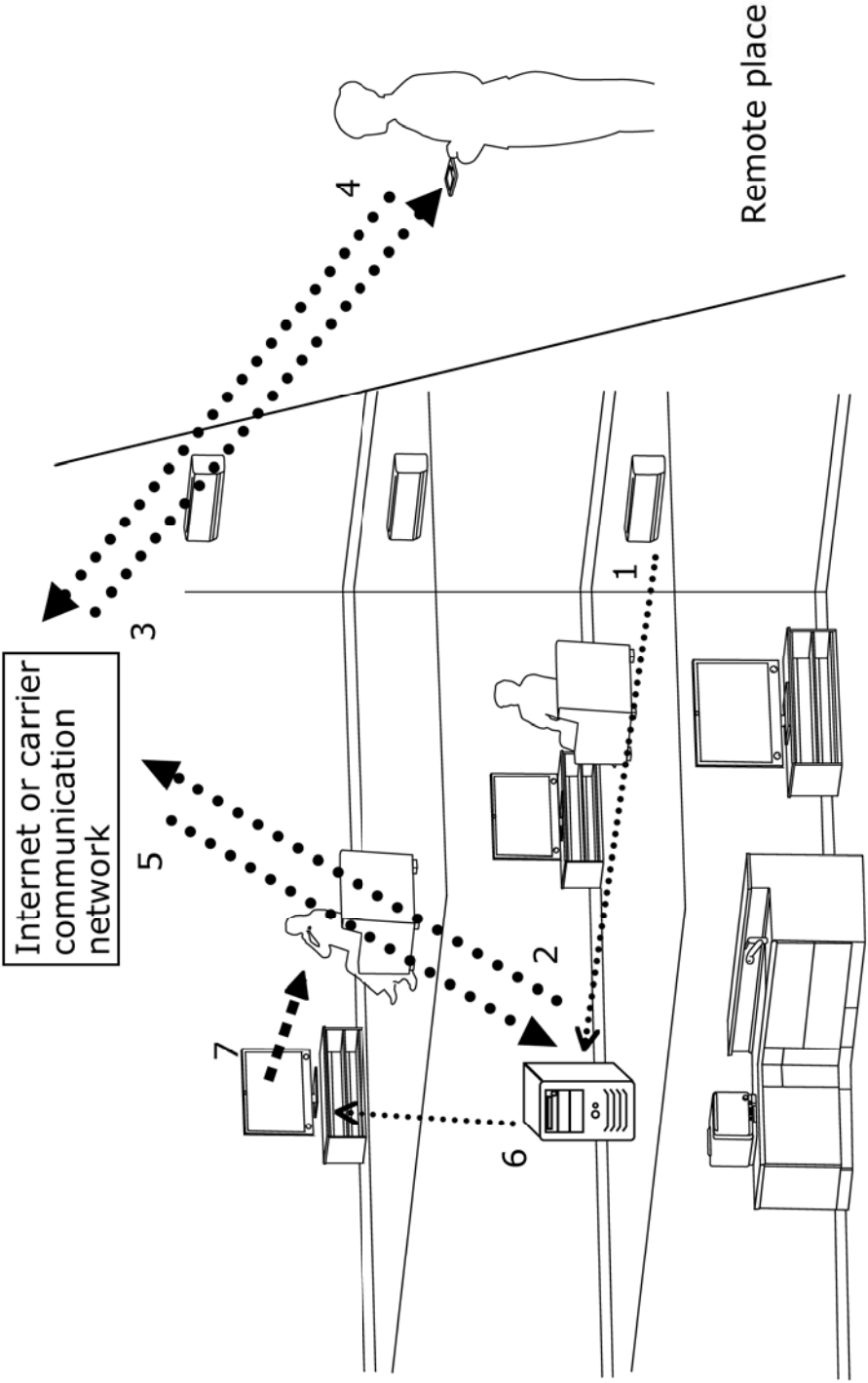


FIG. 183

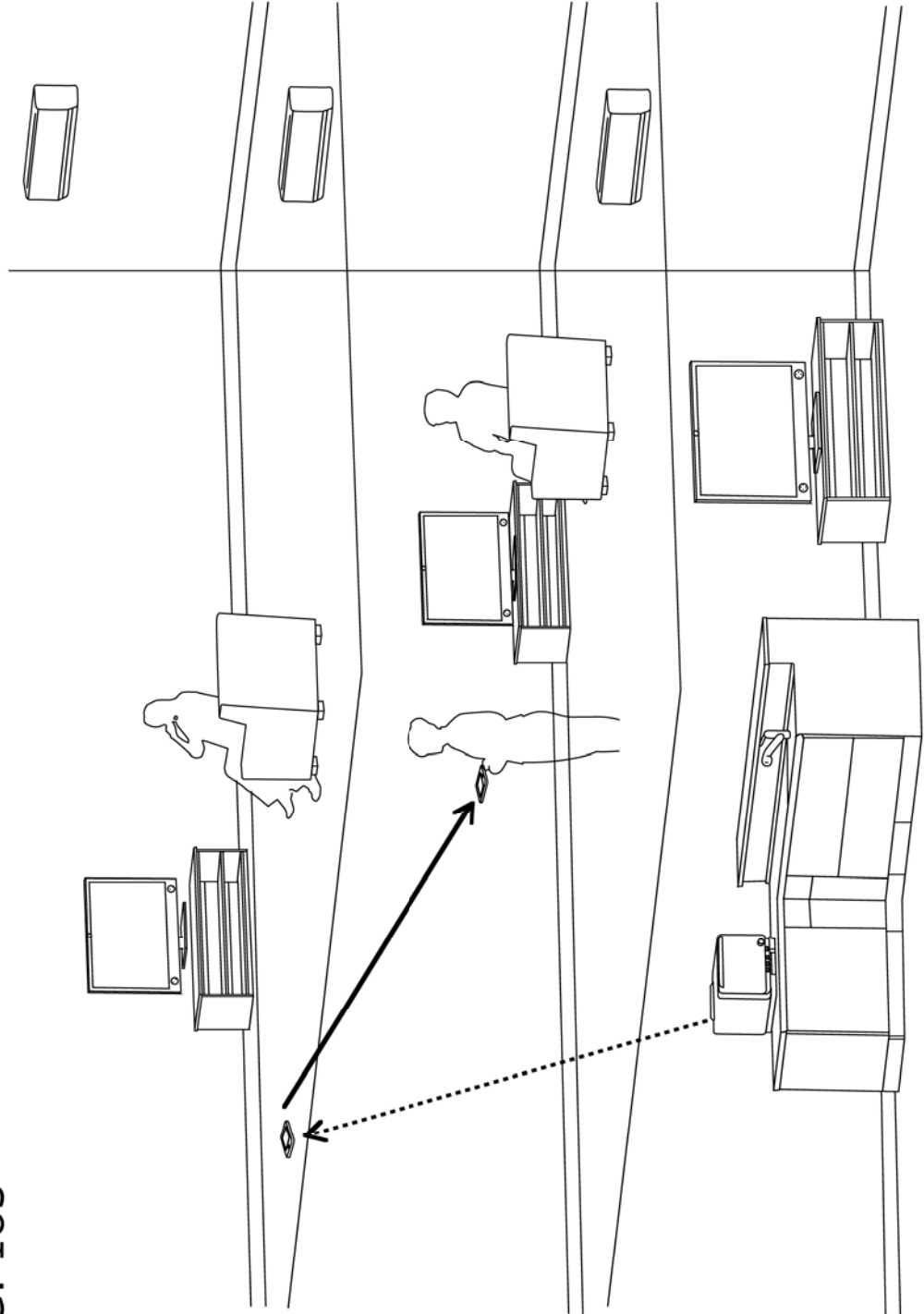


FIG. 184

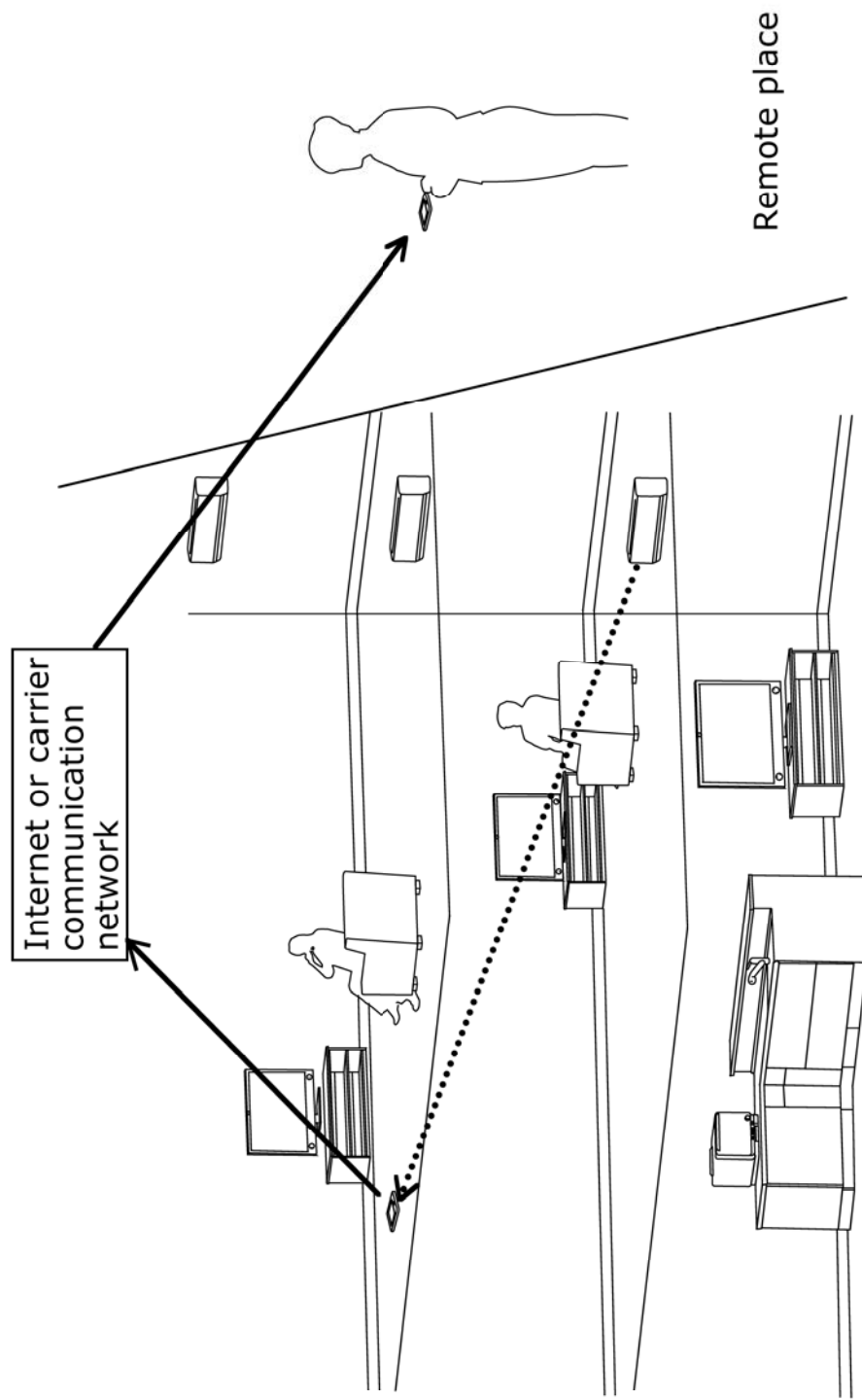


FIG. 185

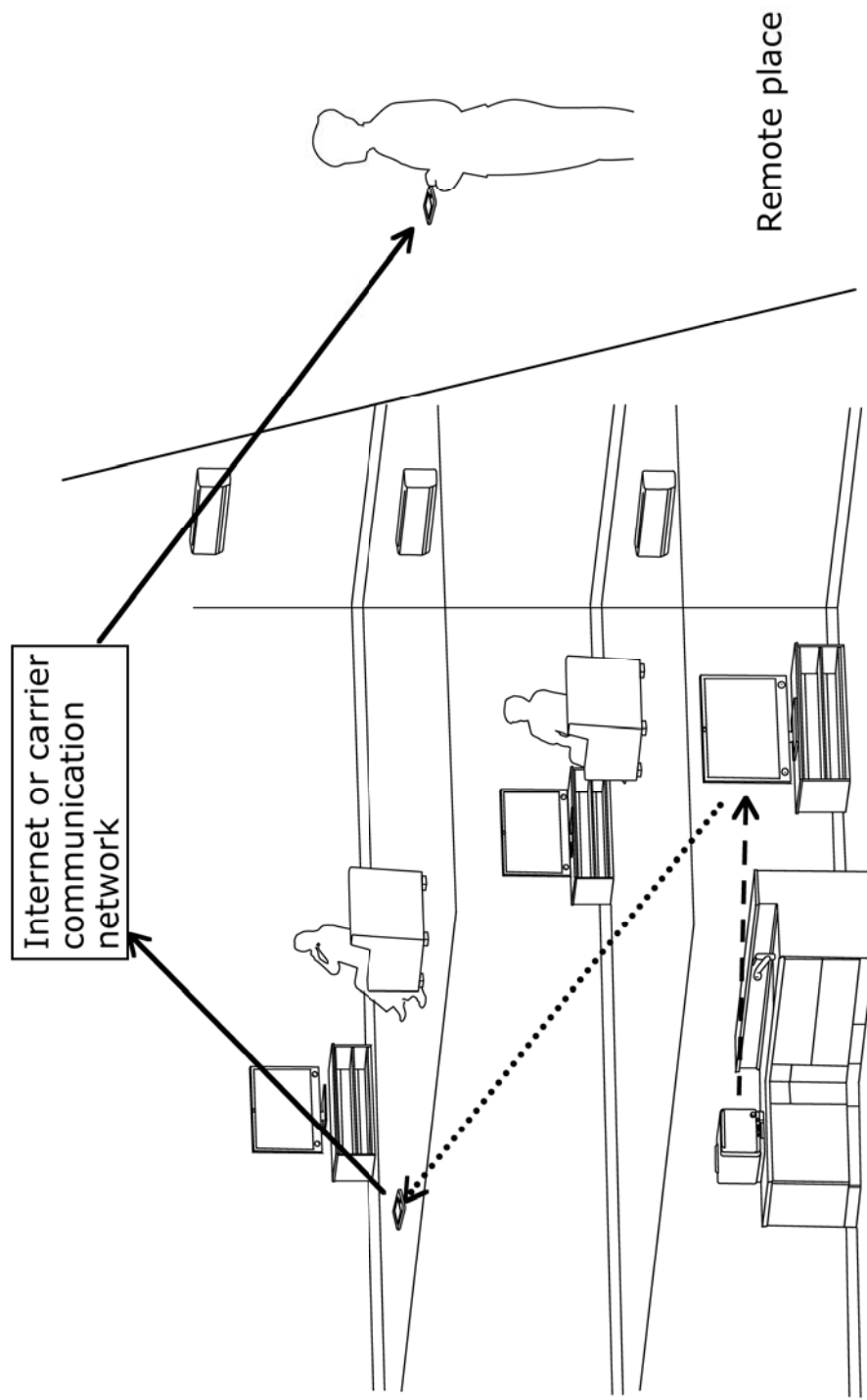


FIG. 186

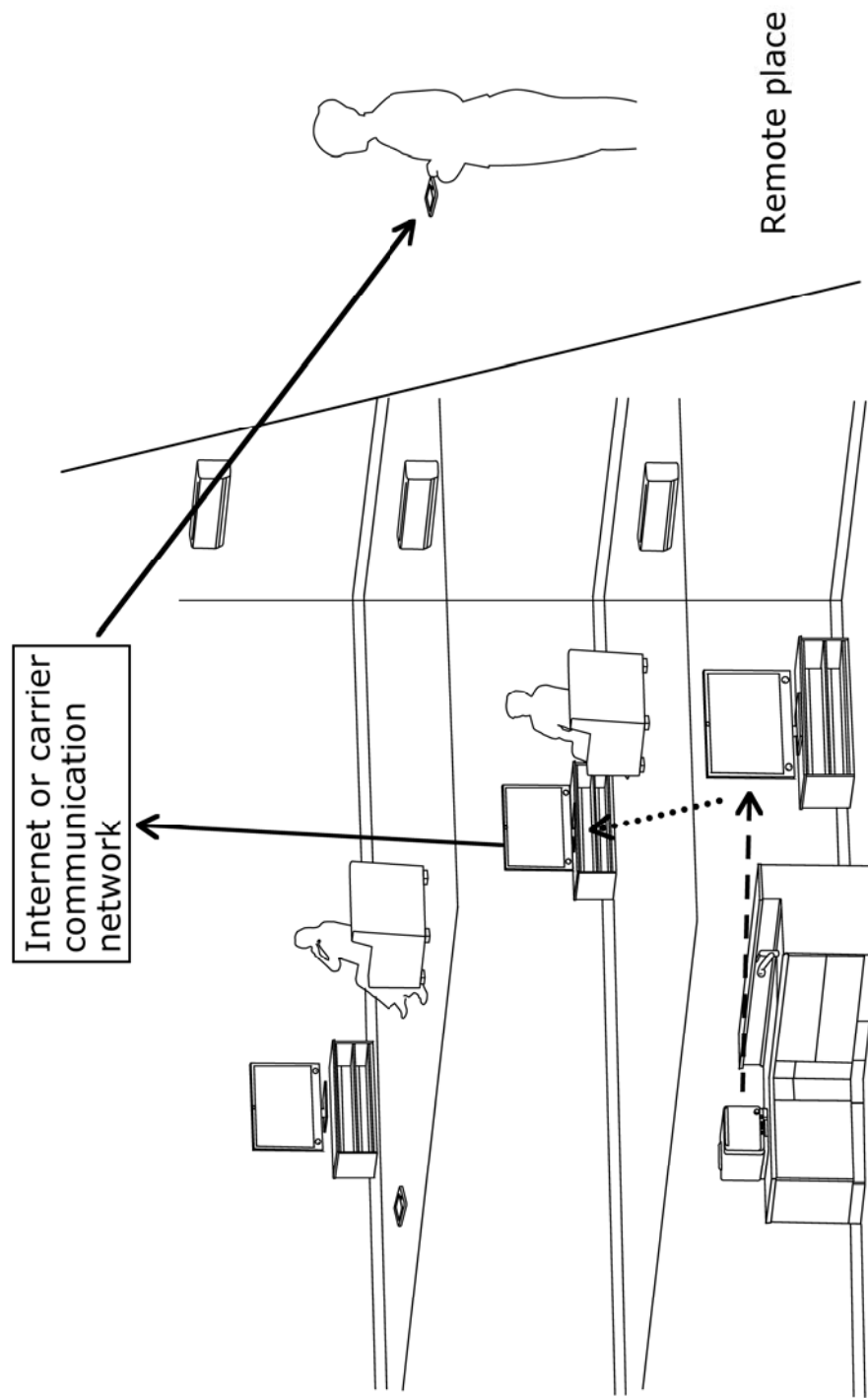




FIG. 187

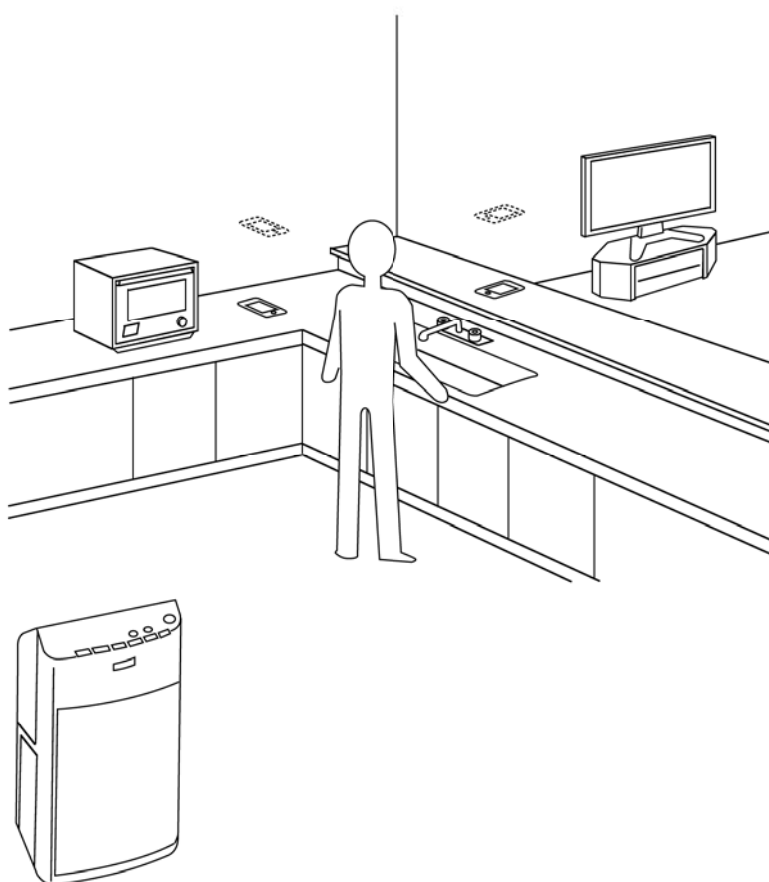


FIG. 188

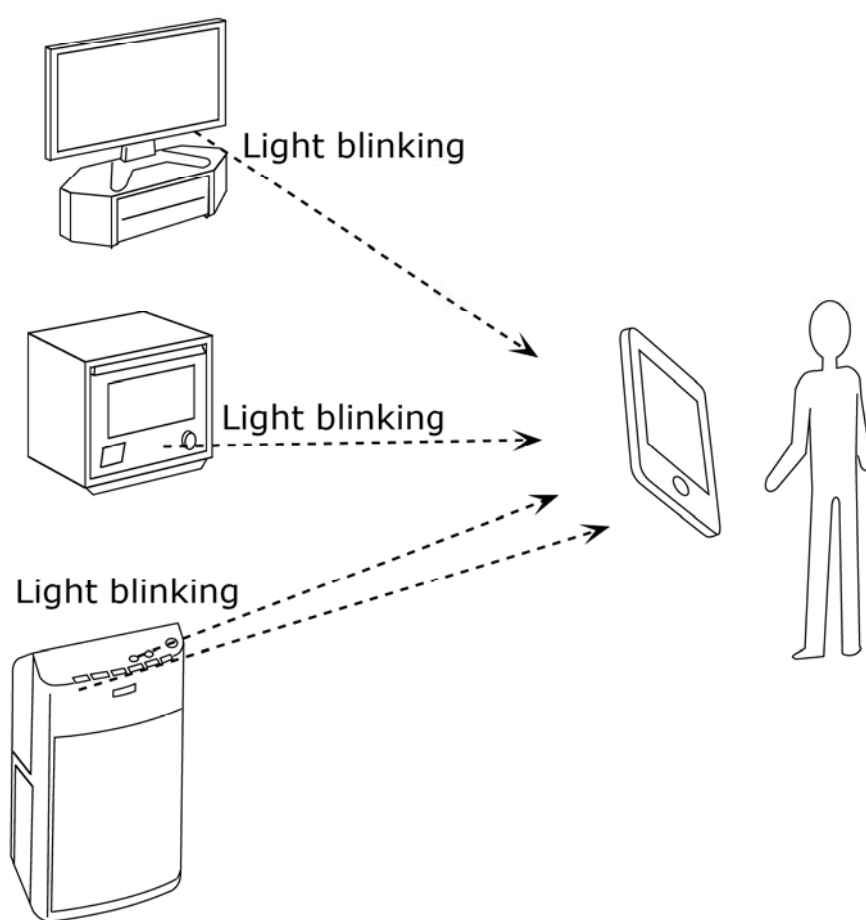


FIG. 189

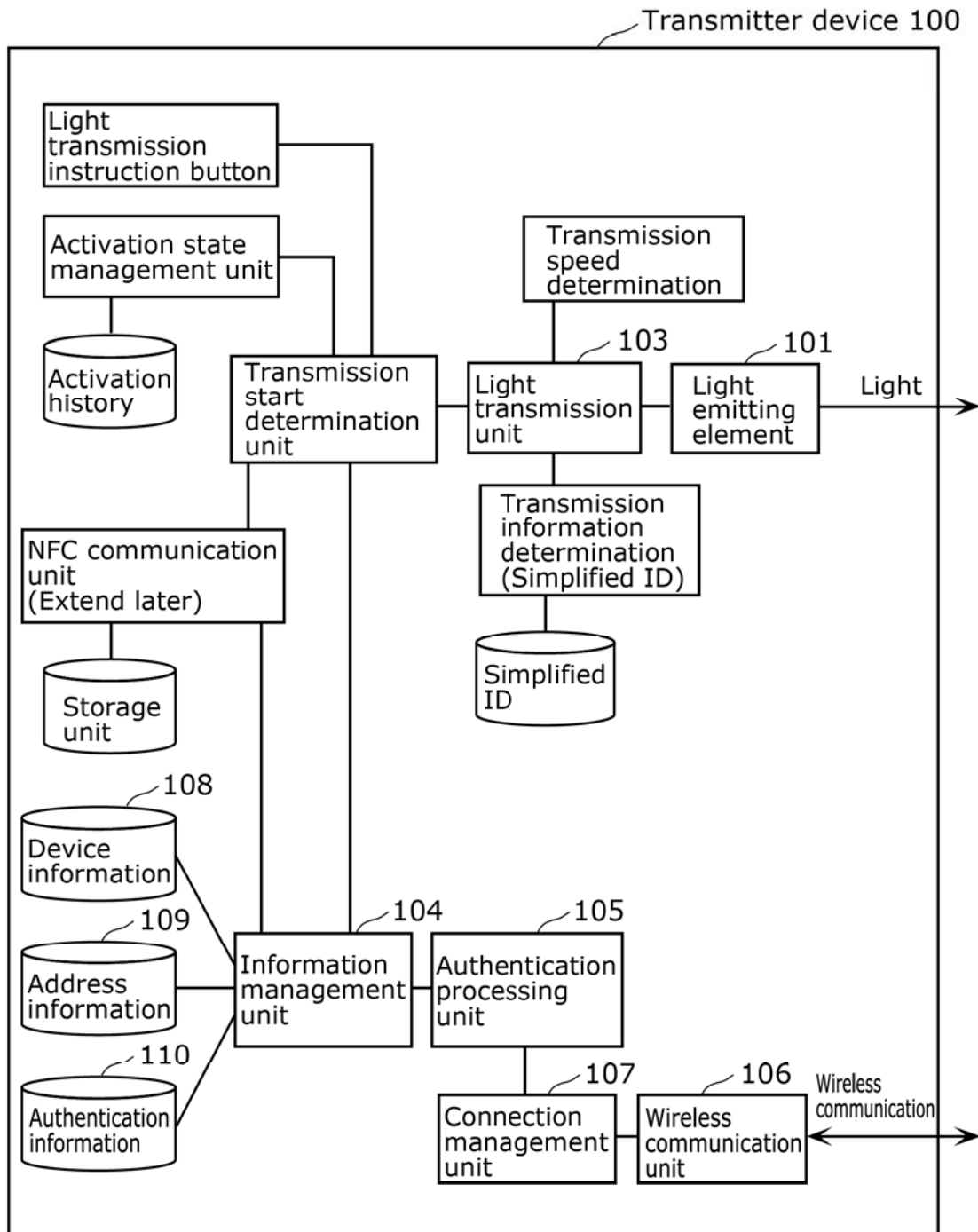


FIG. 190

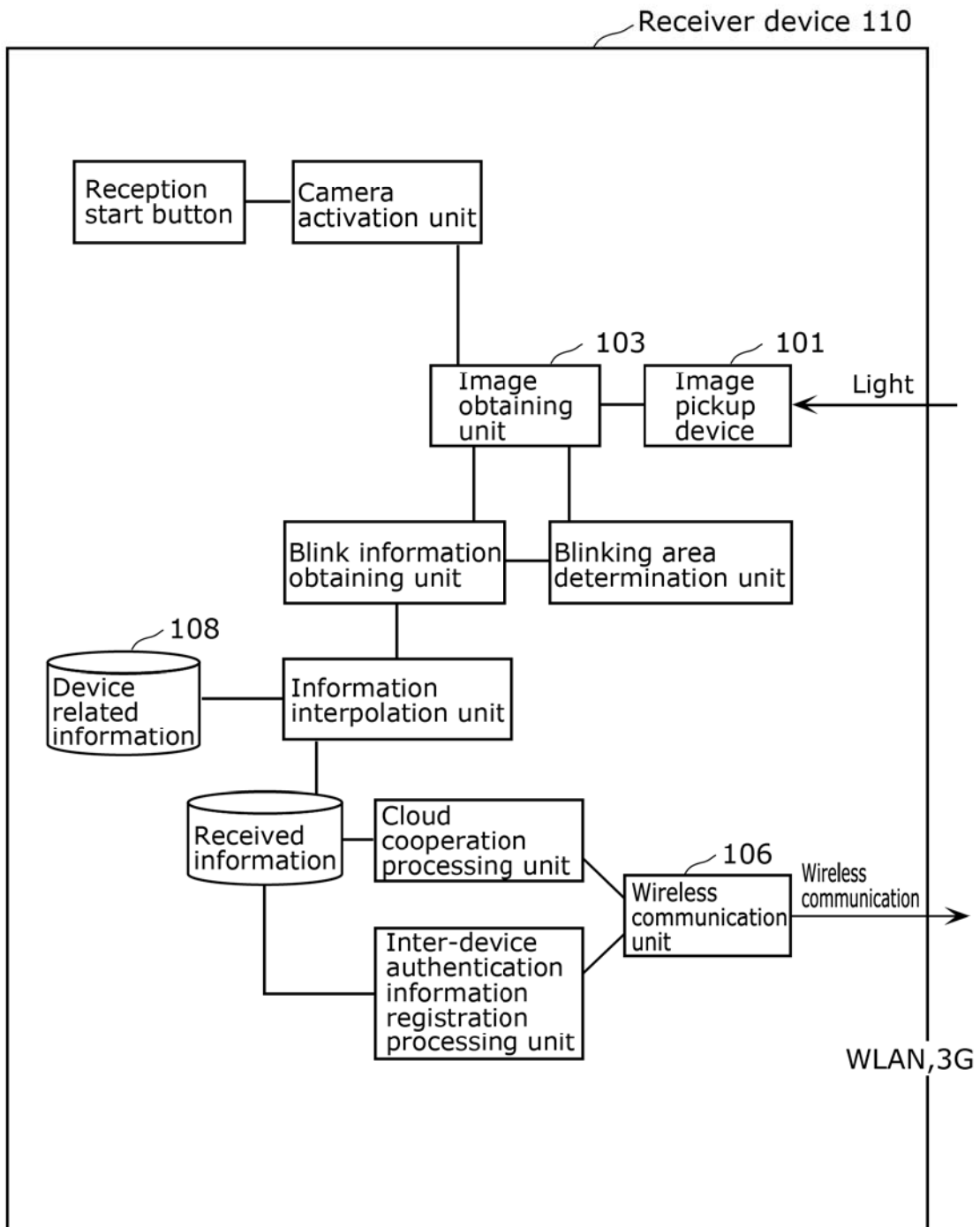


FIG. 191

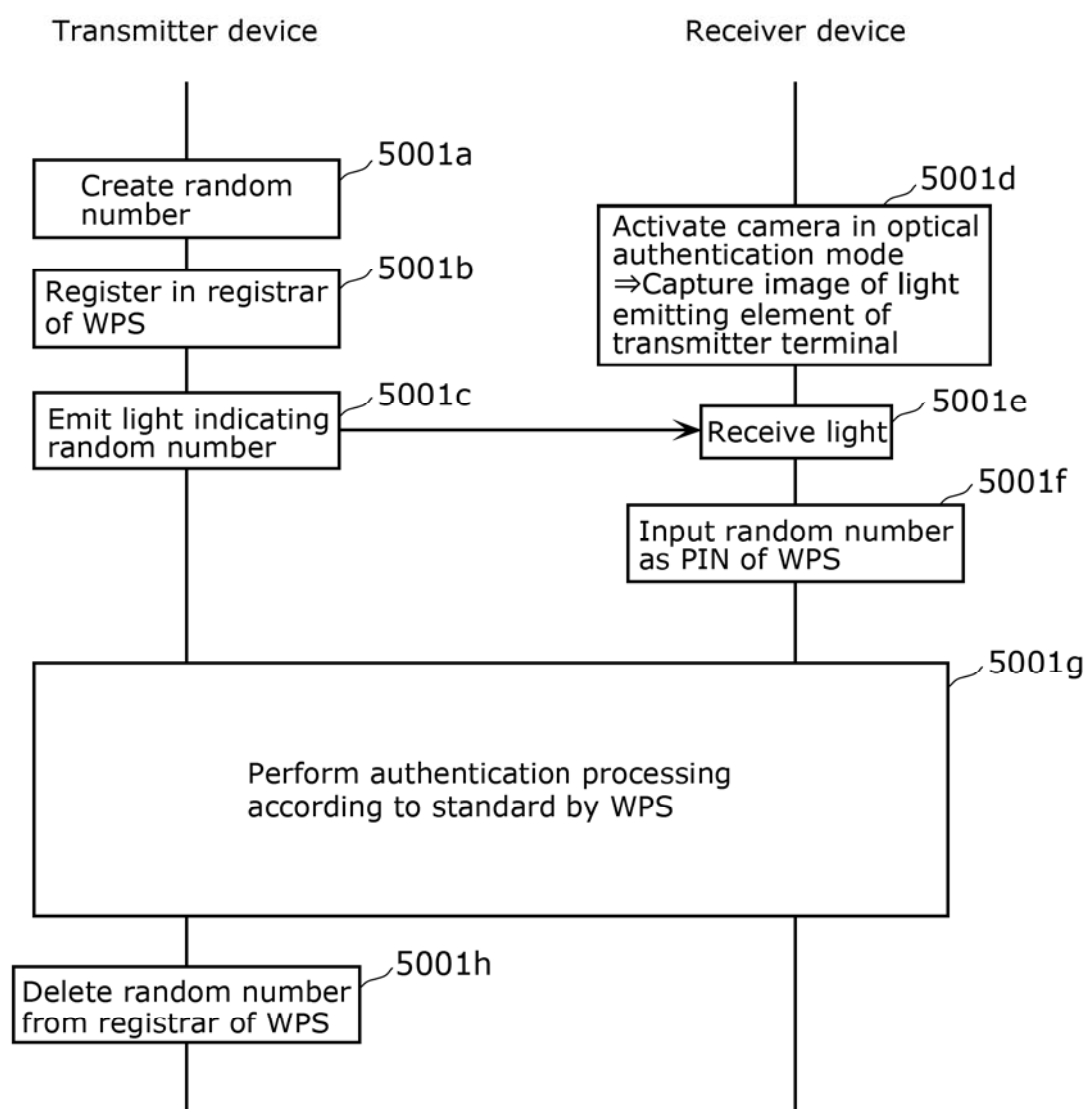


FIG. 192

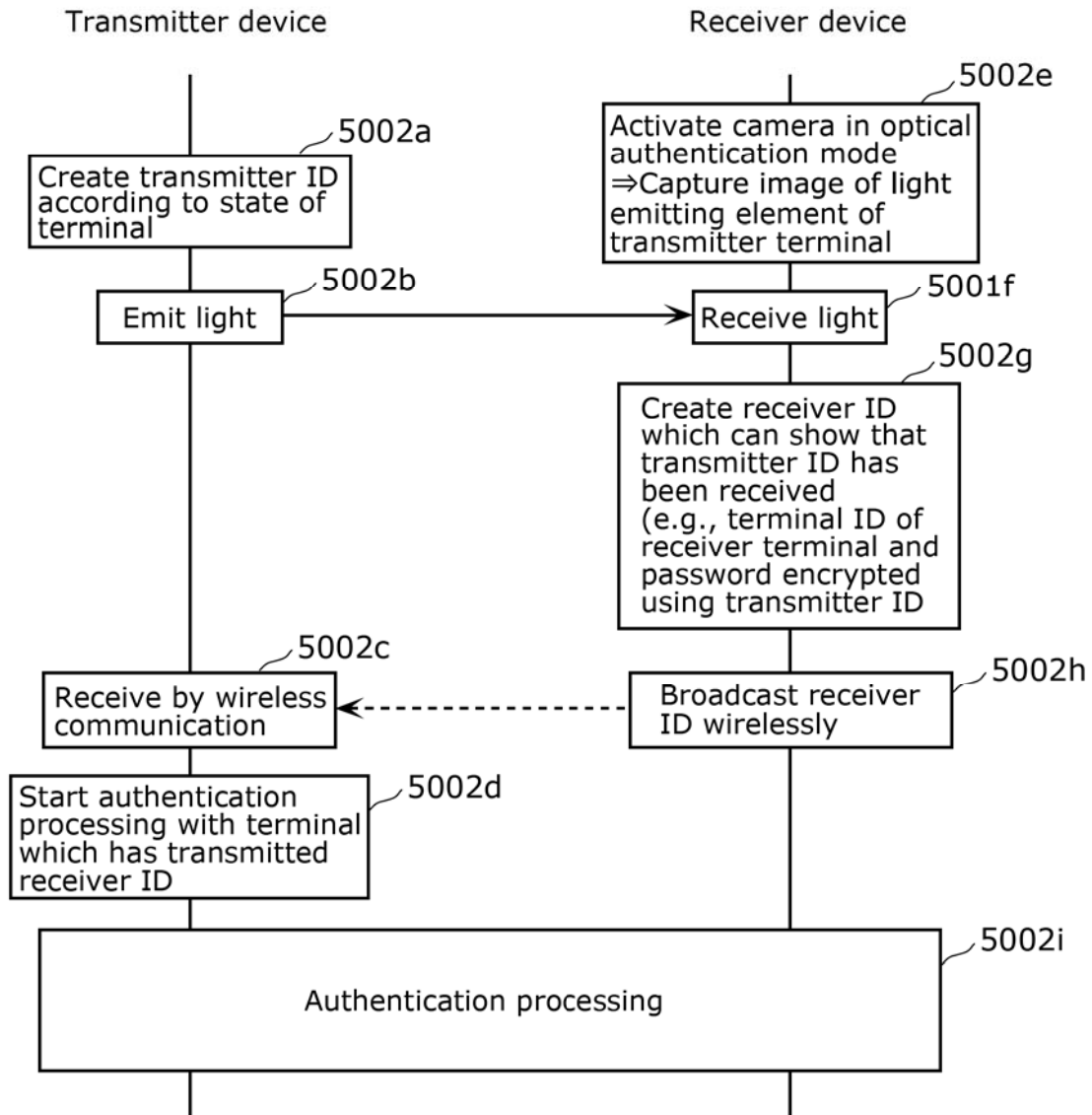


FIG. 193

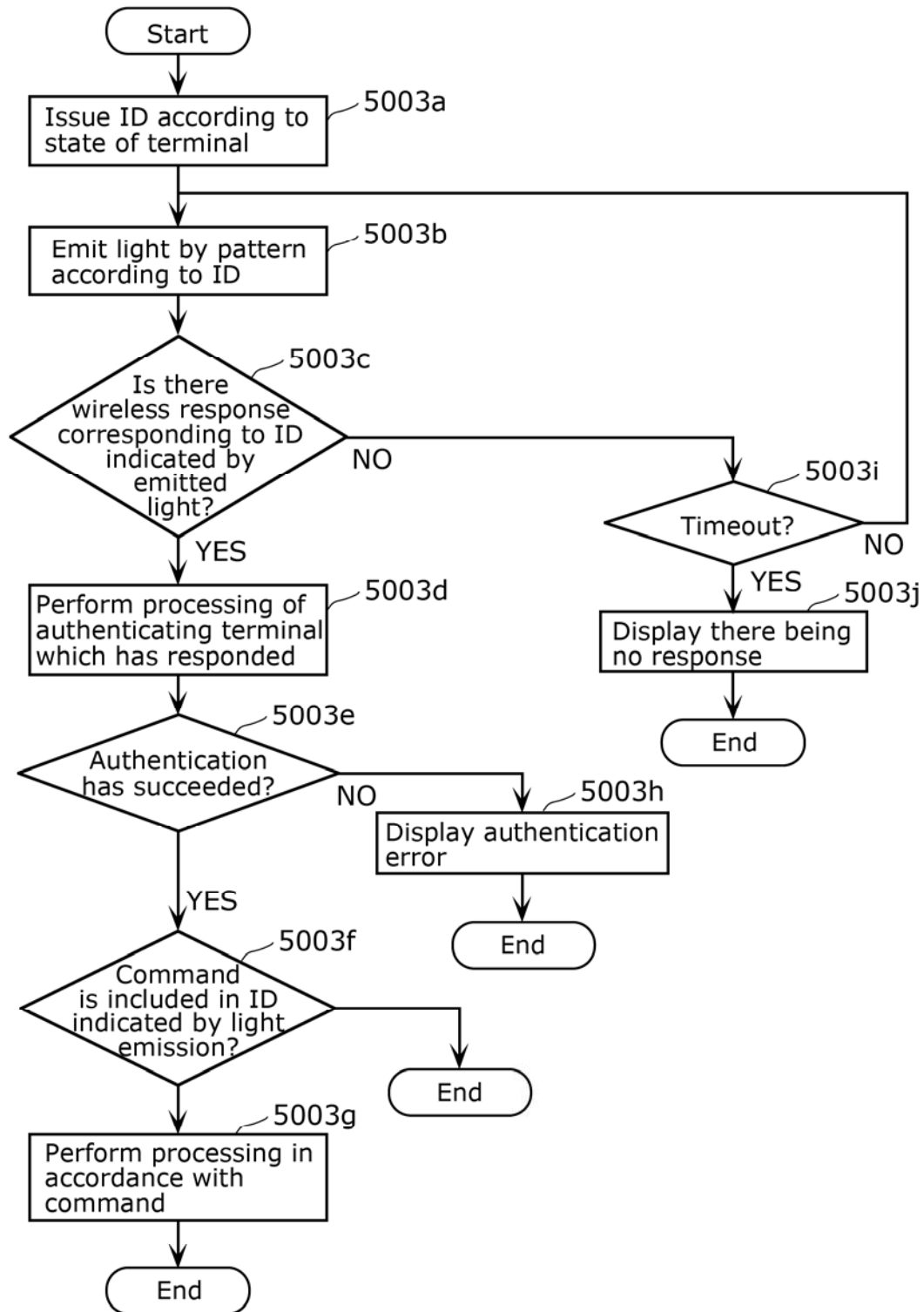


FIG. 194

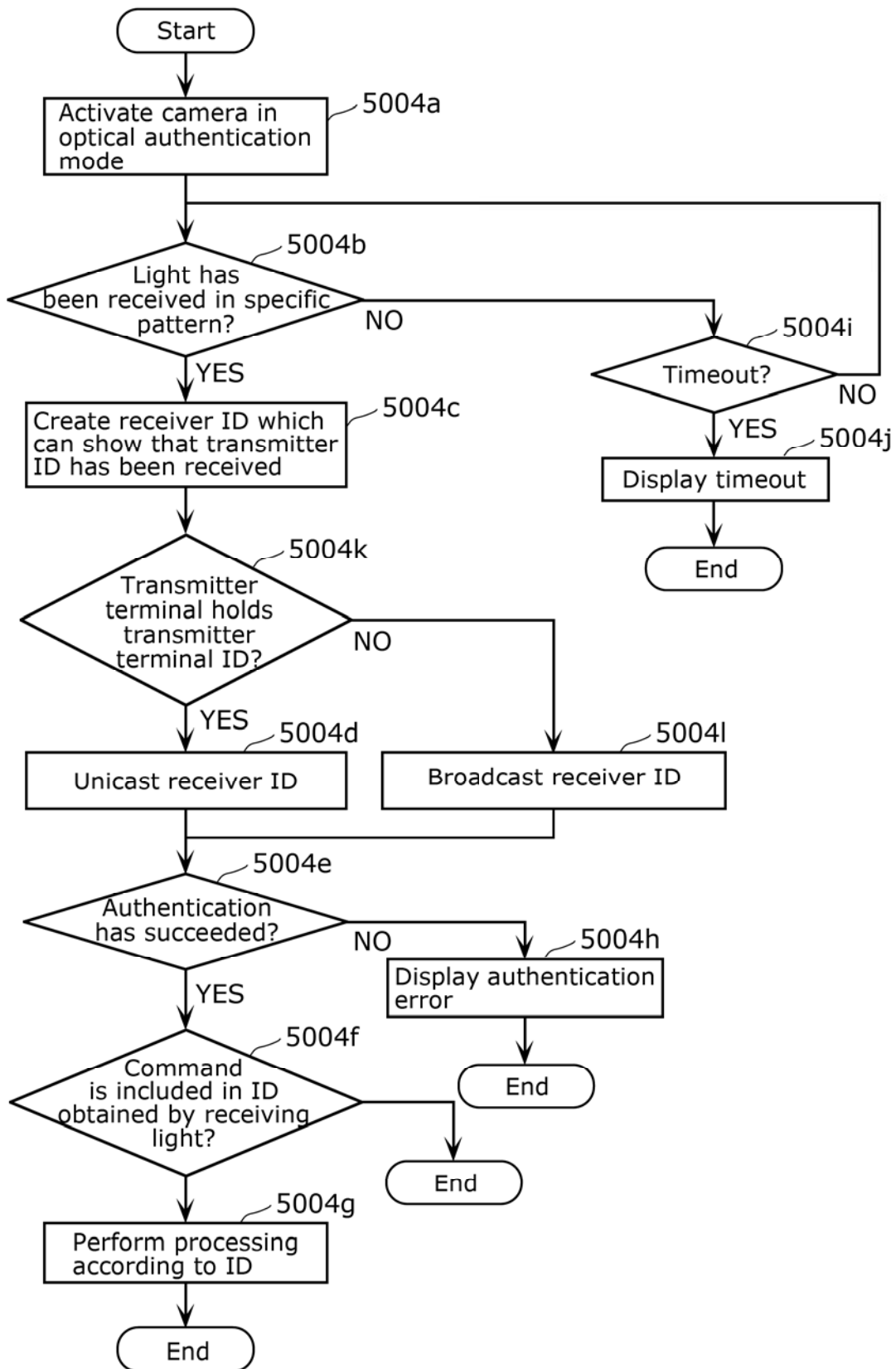




FIG. 195

Sequence diagram illustrating data transmission and reception using NFC/high speed wireless communication

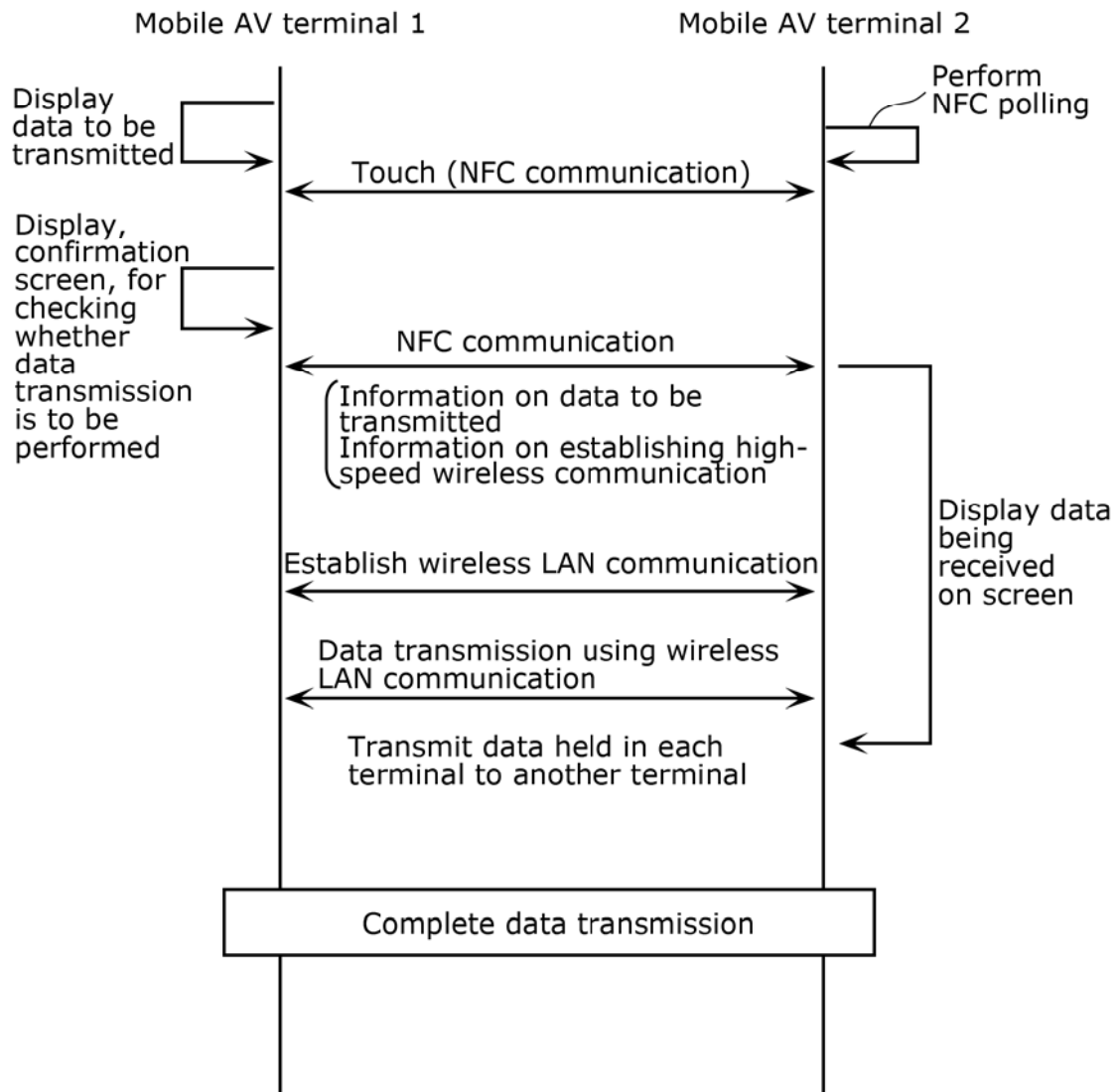


FIG. 196

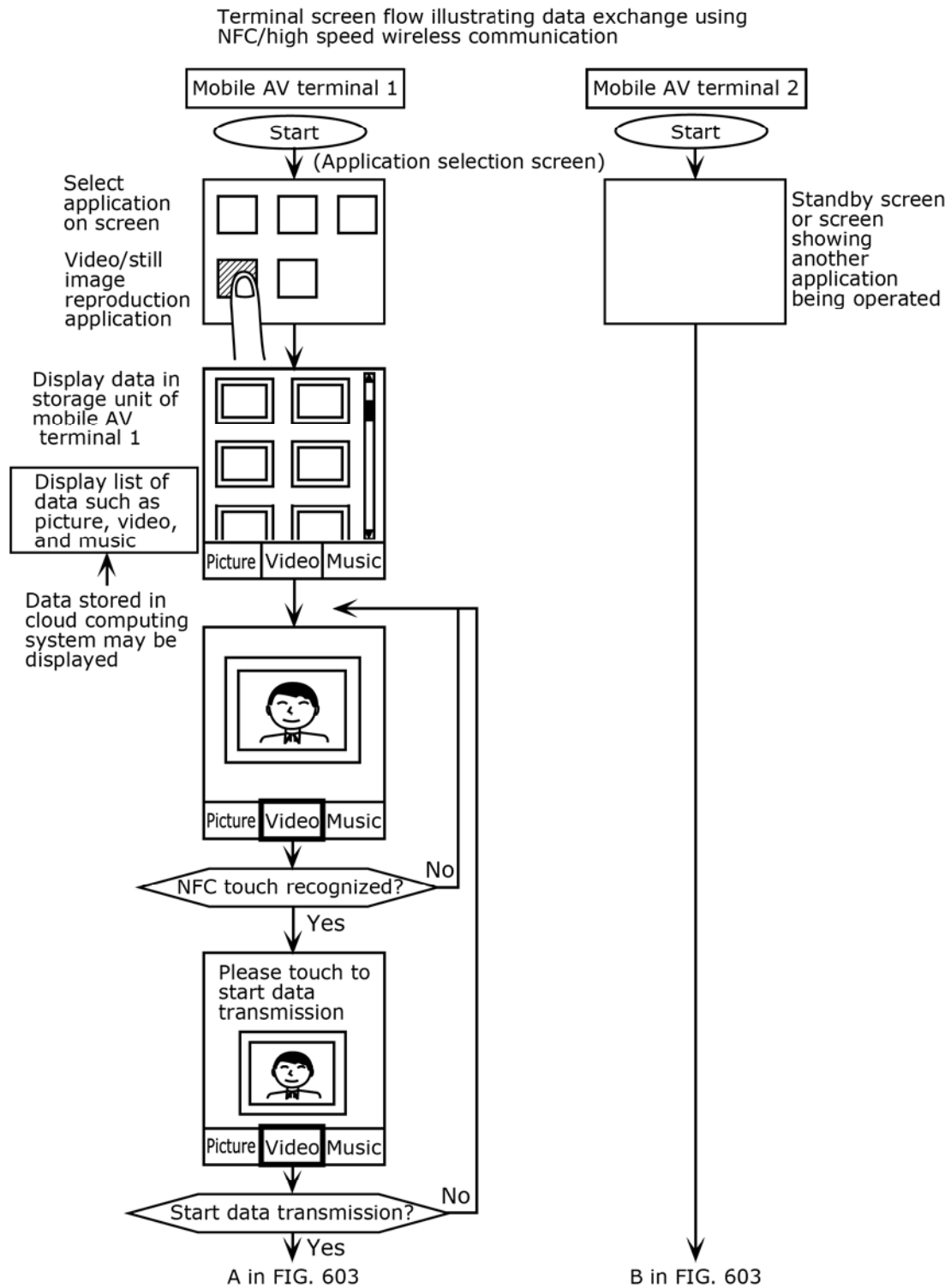


FIG. 197

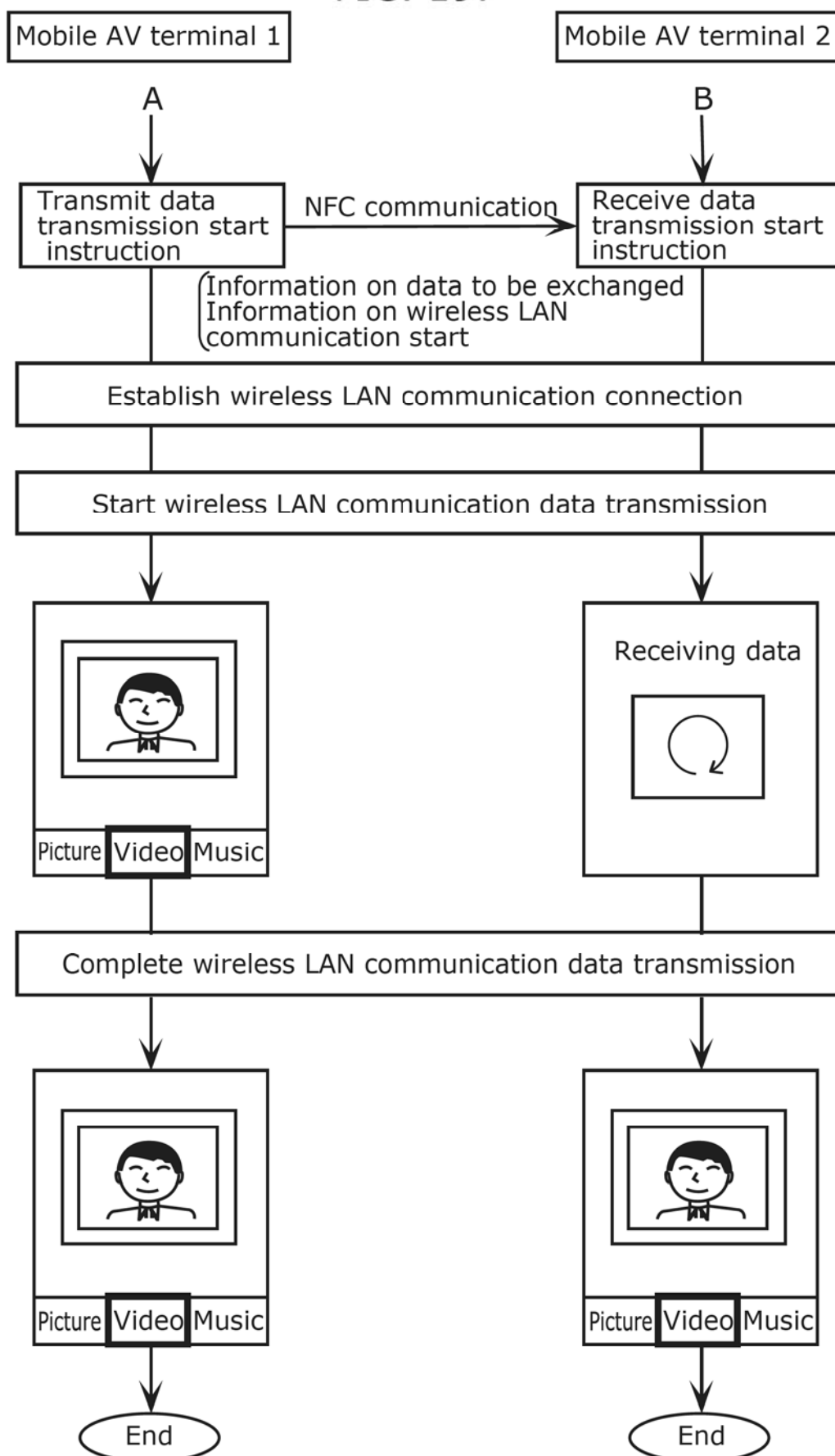


FIG. 198

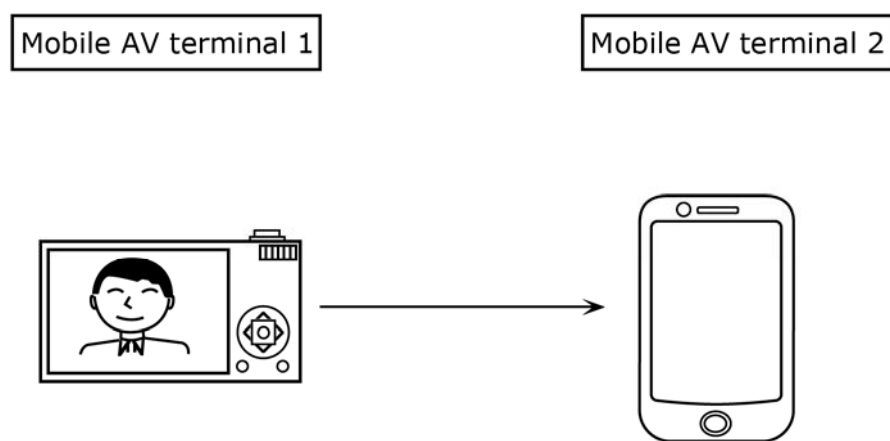


FIG. 199

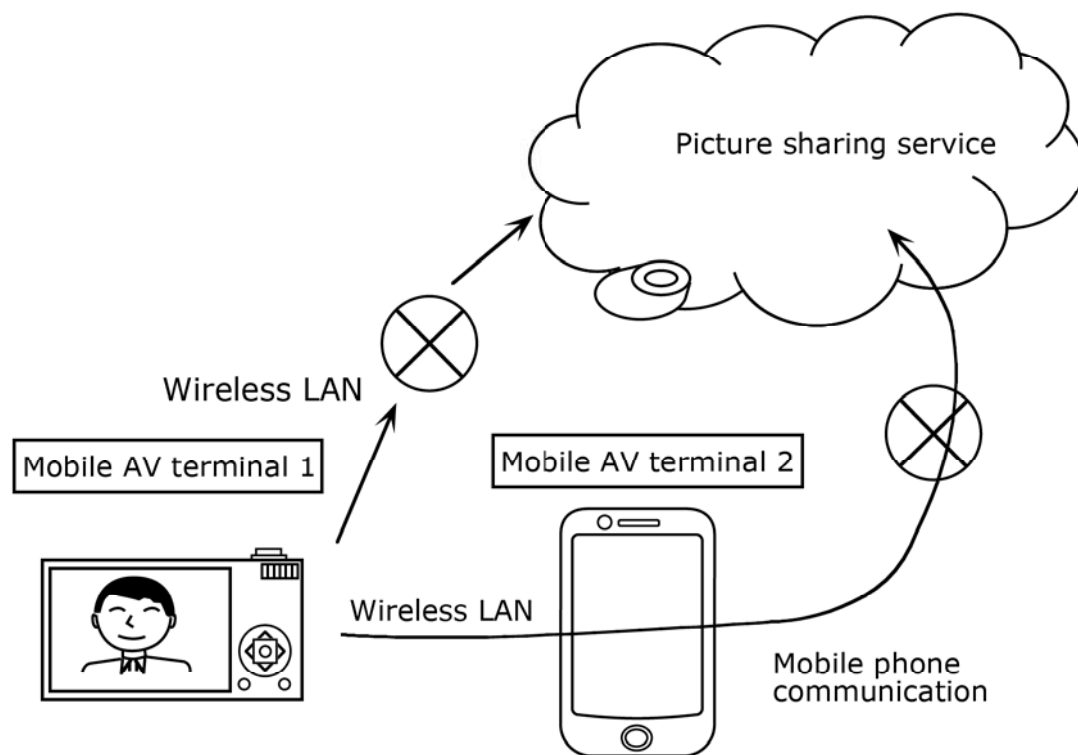


FIG. 200

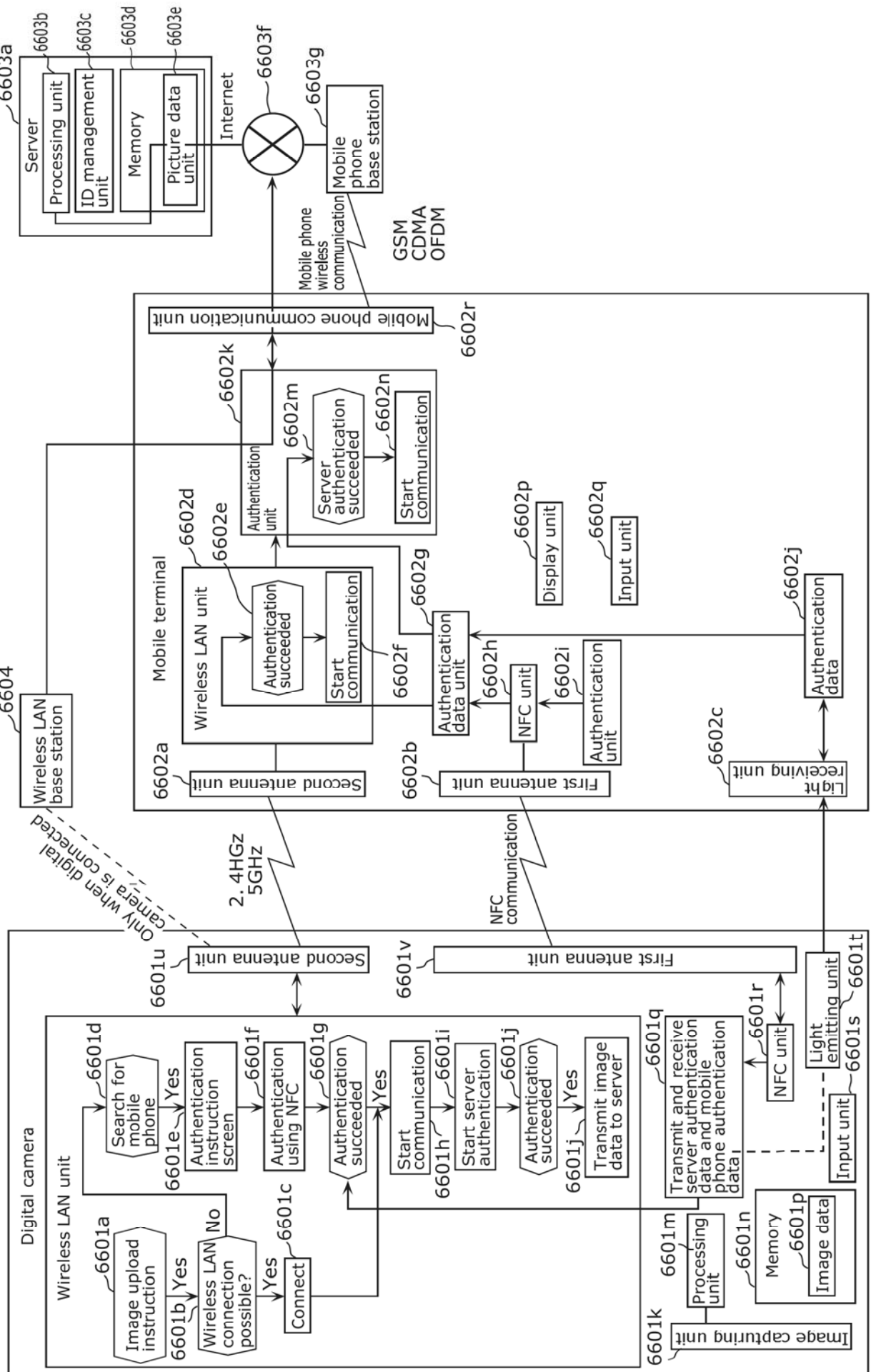


FIG. 201

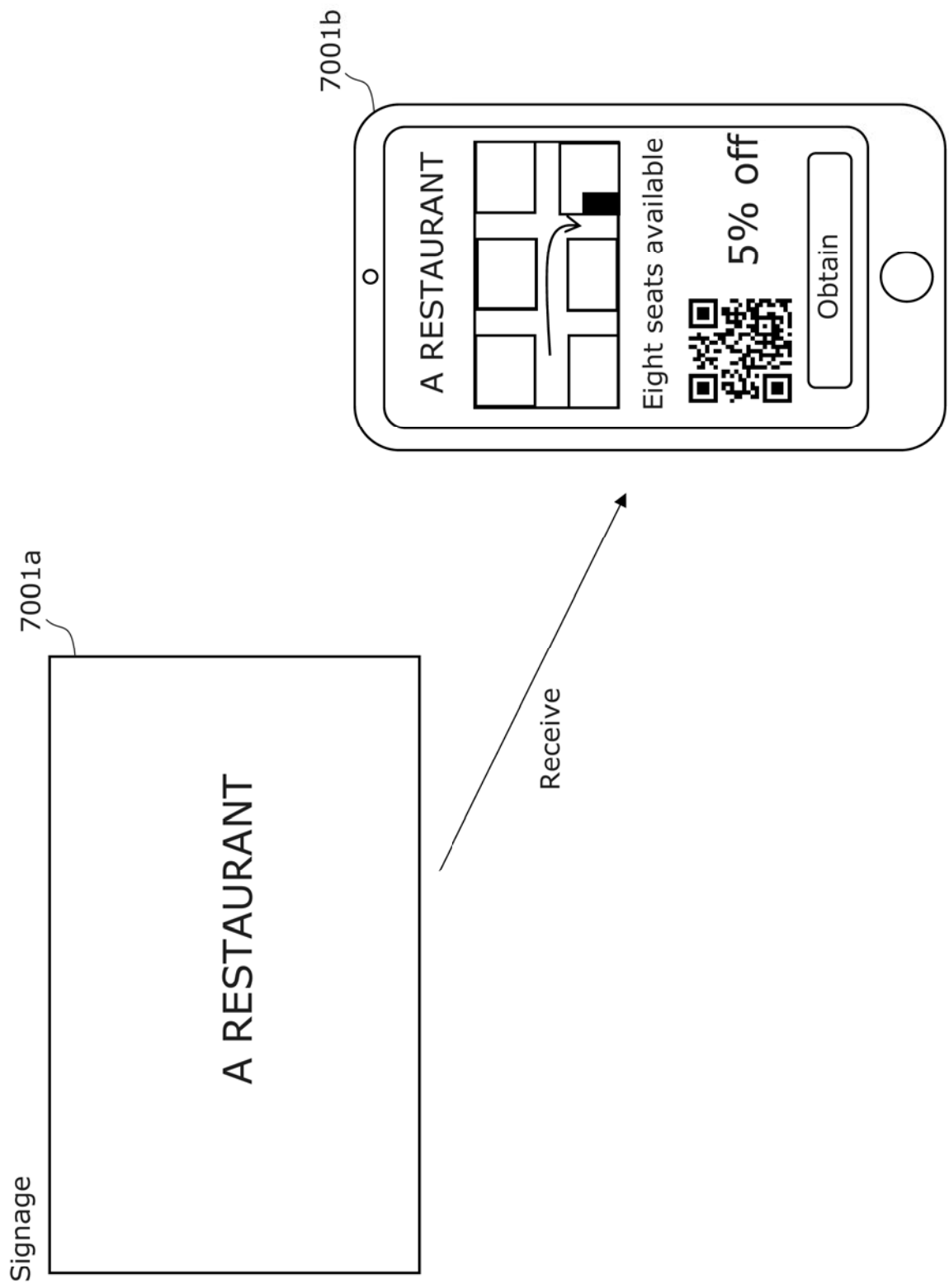


FIG. 202

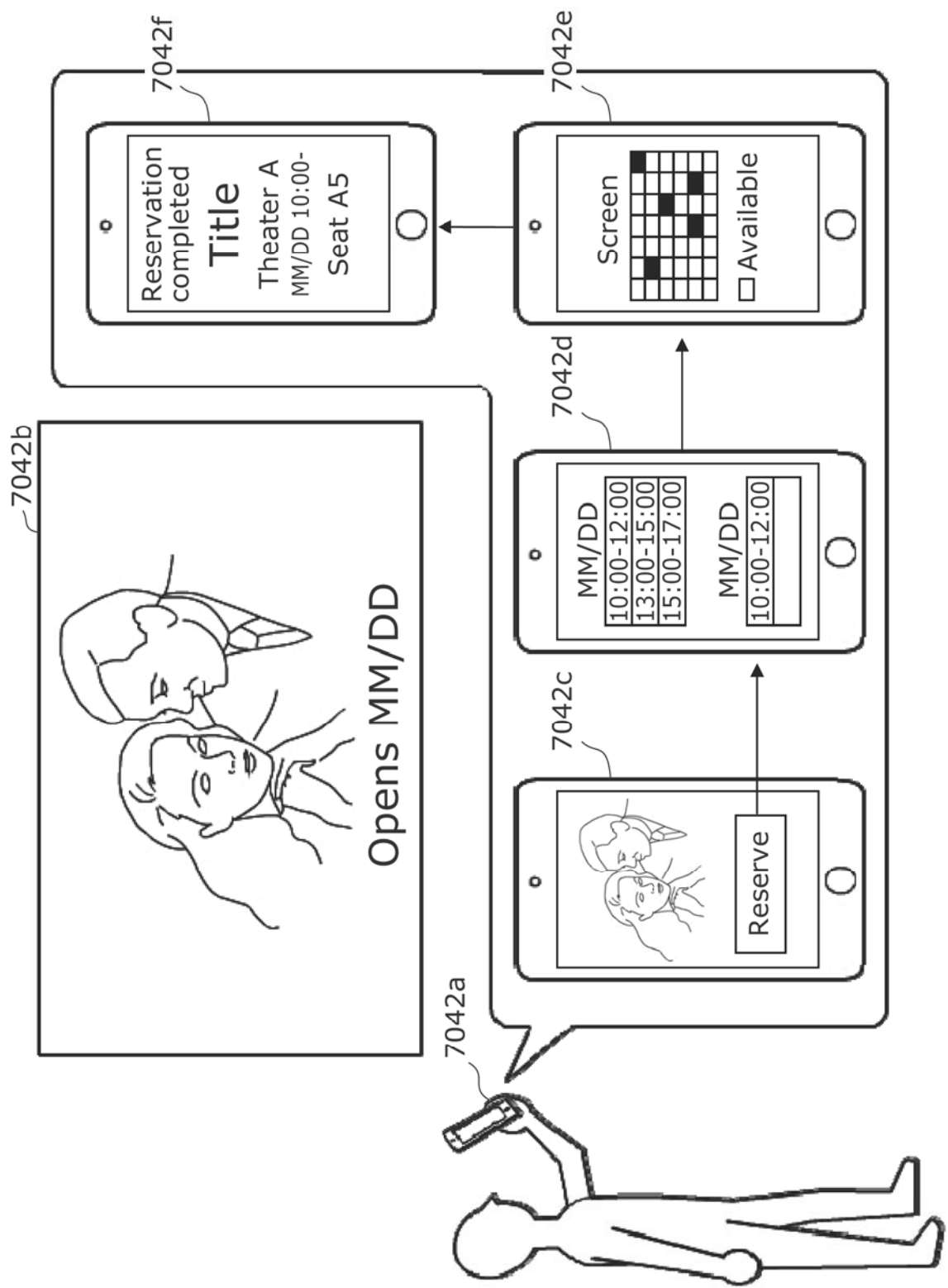




FIG. 203

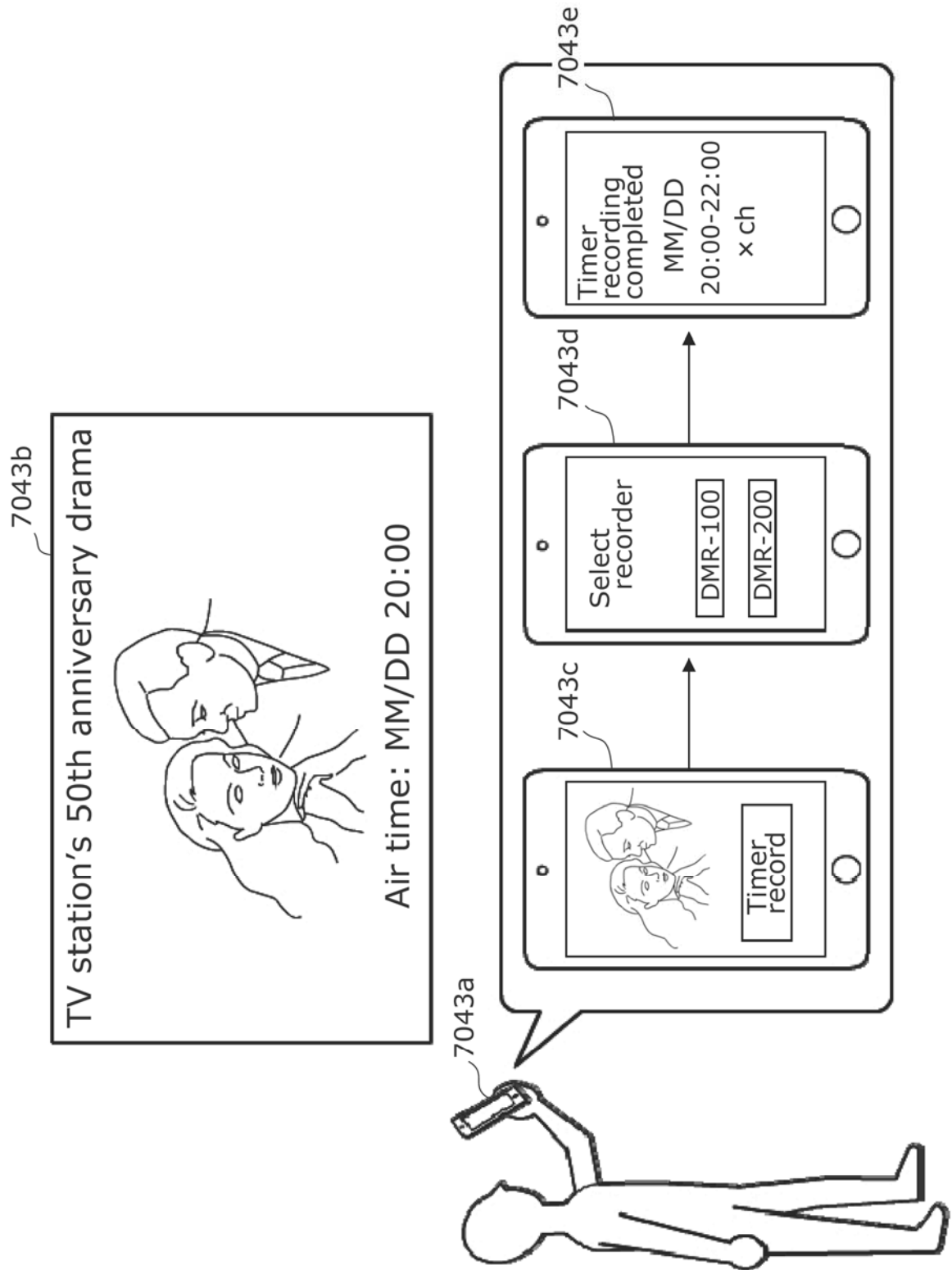


FIG. 204

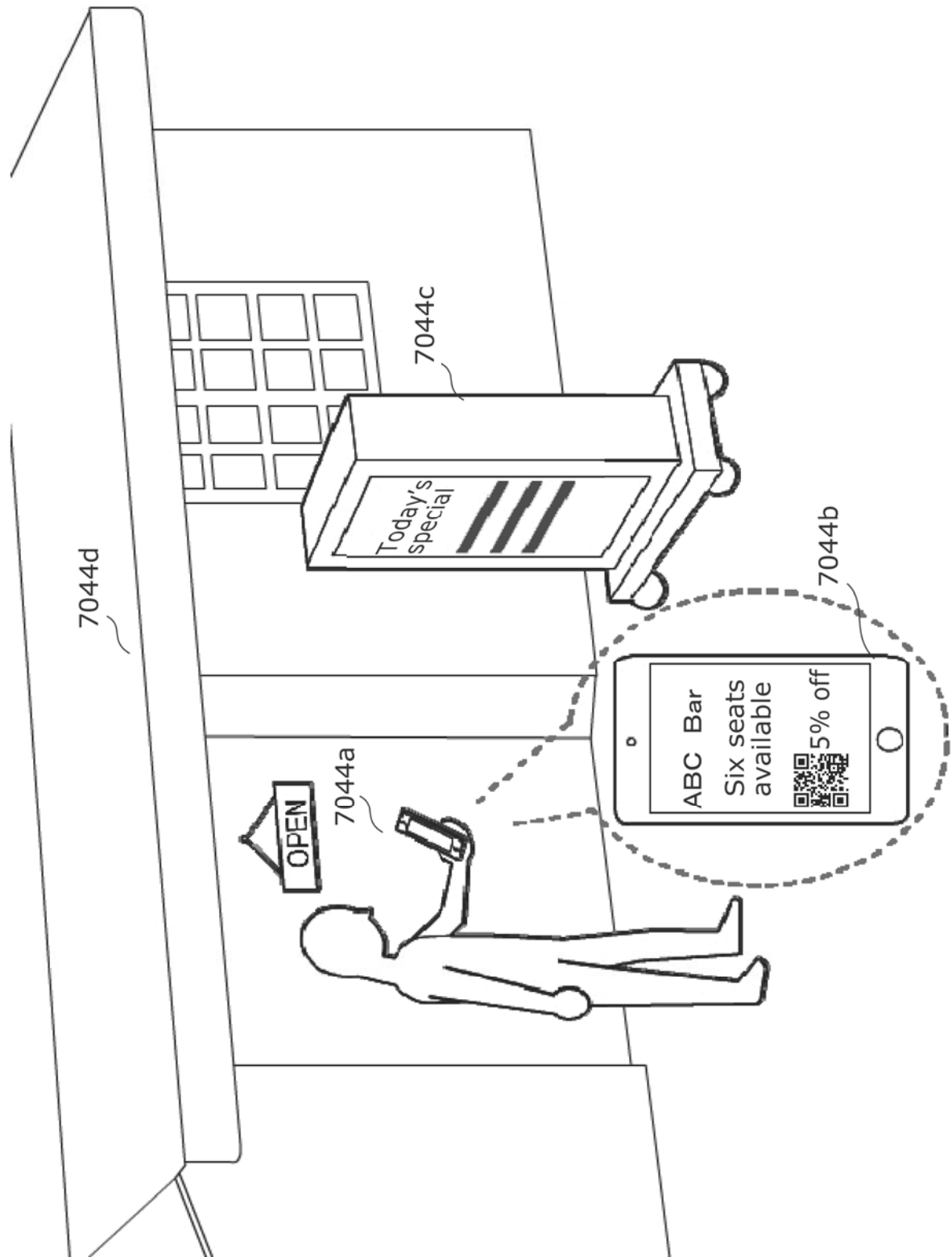


FIG. 205

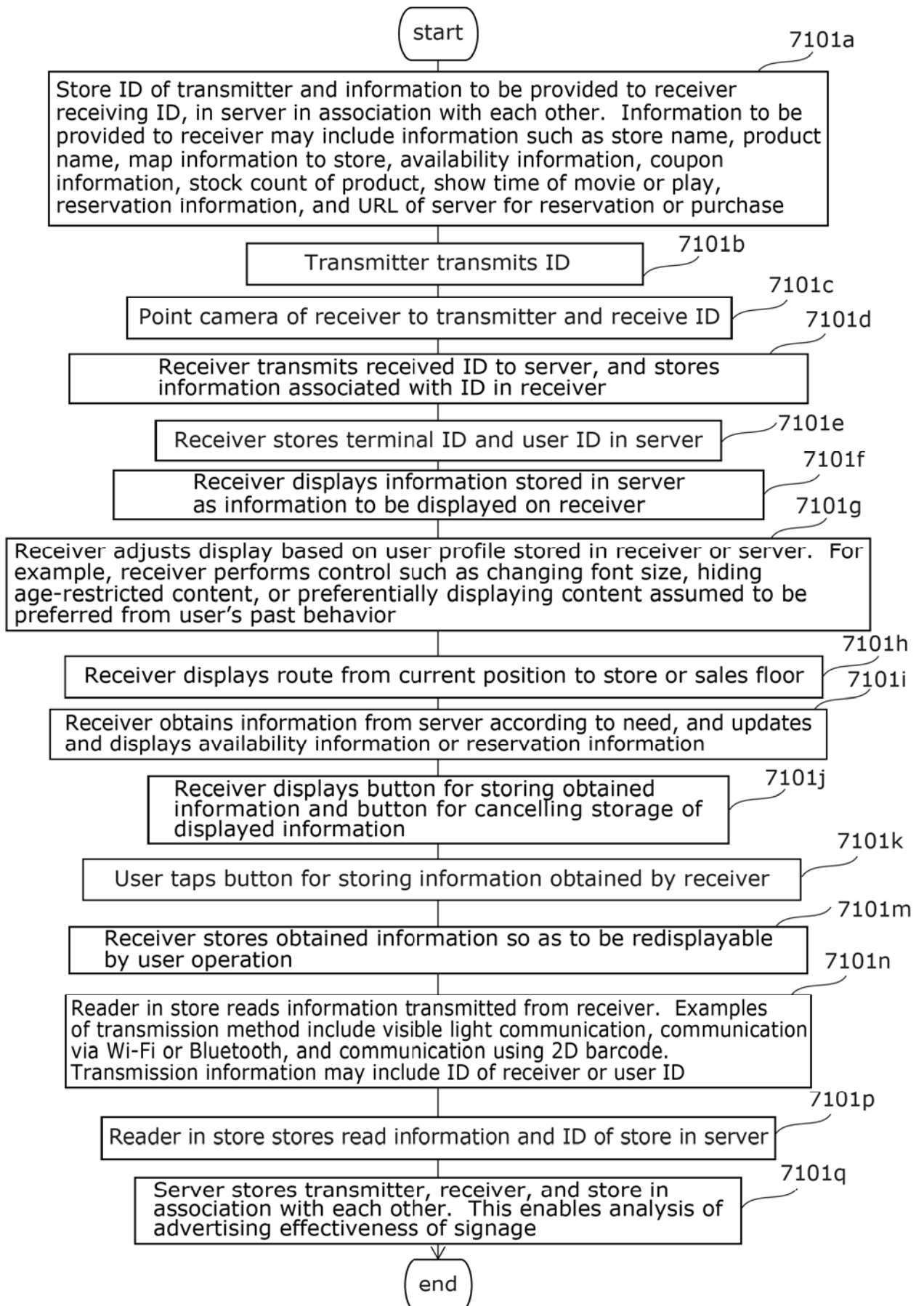


FIG. 206

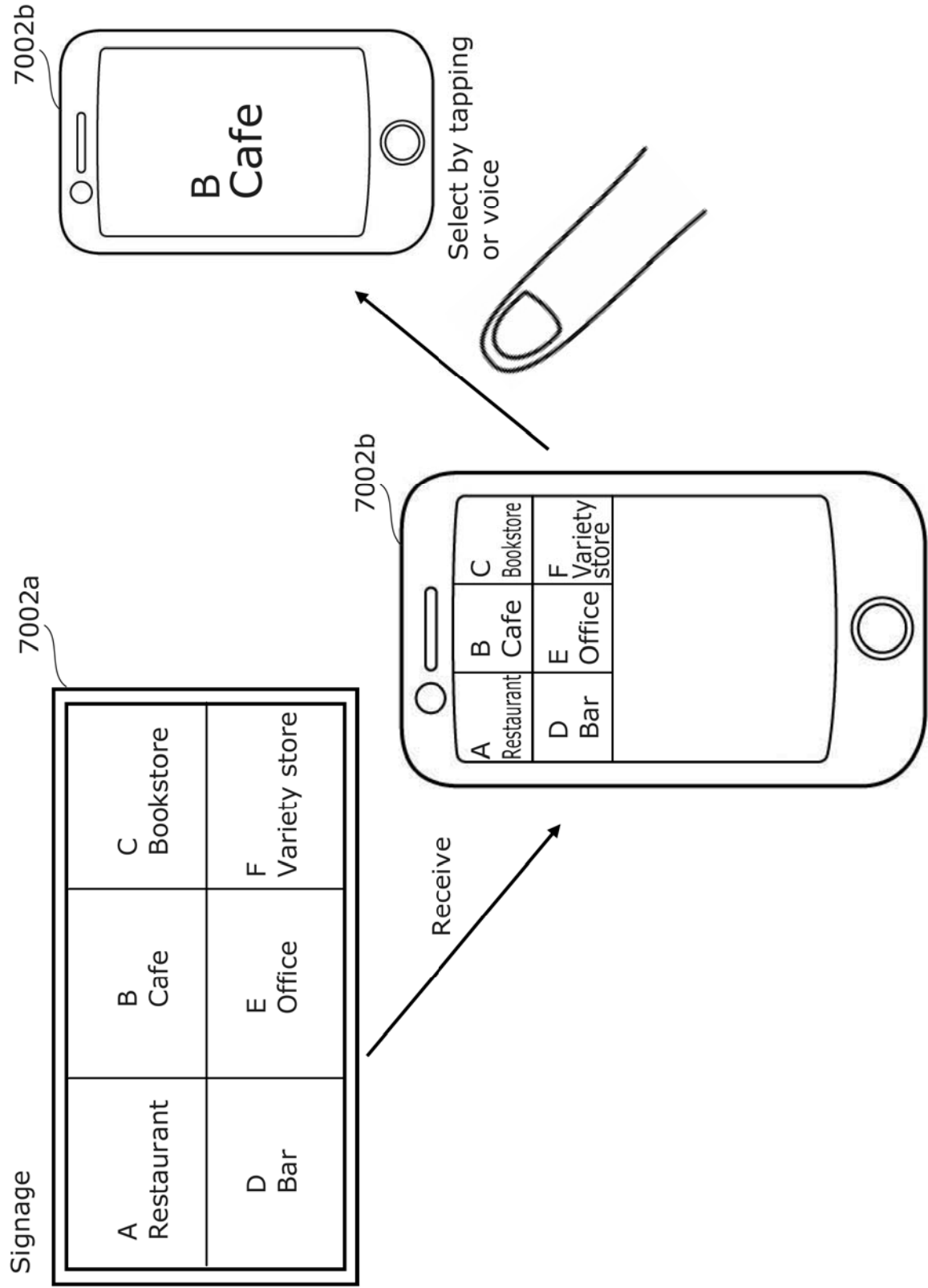


FIG. 207

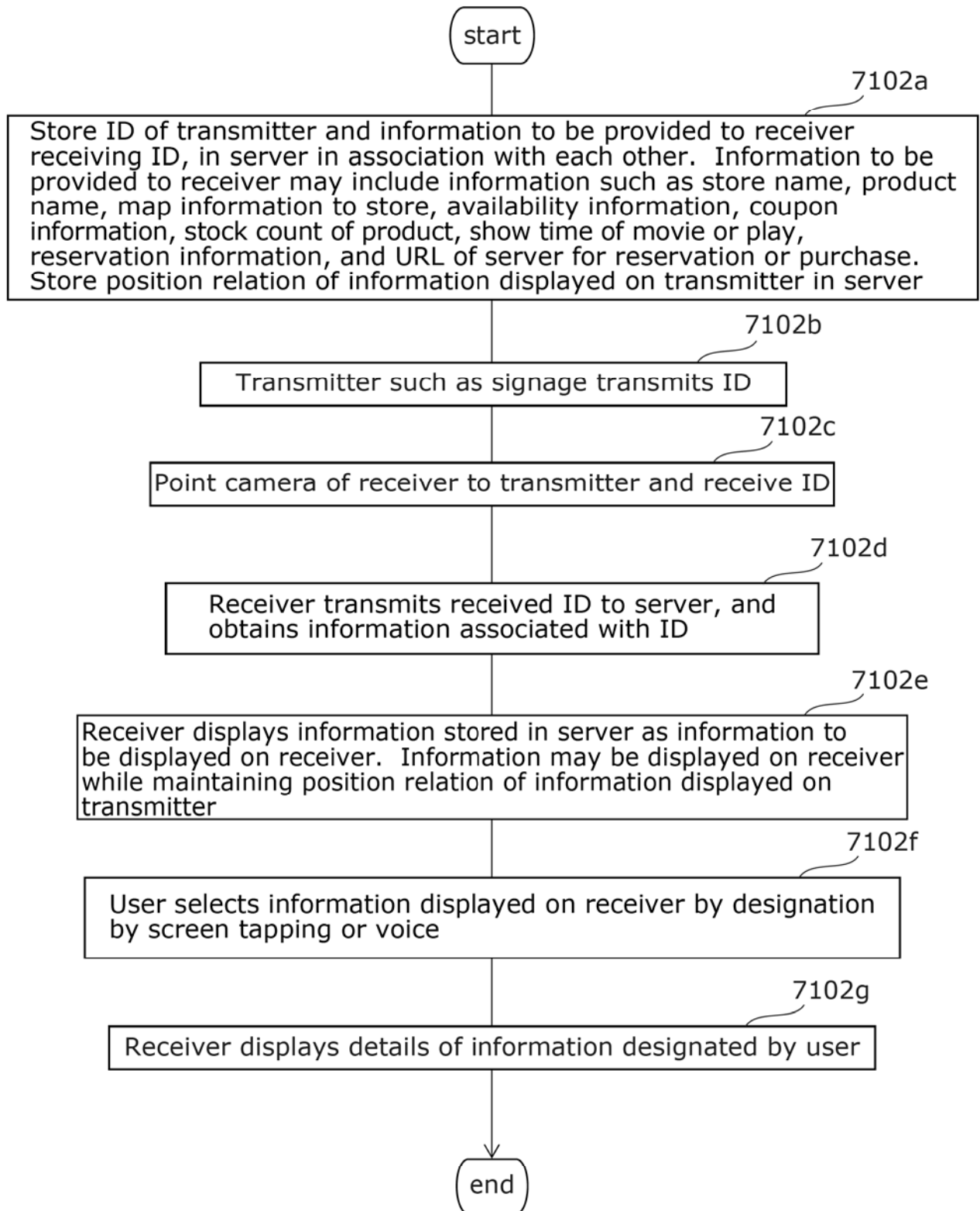


FIG. 208

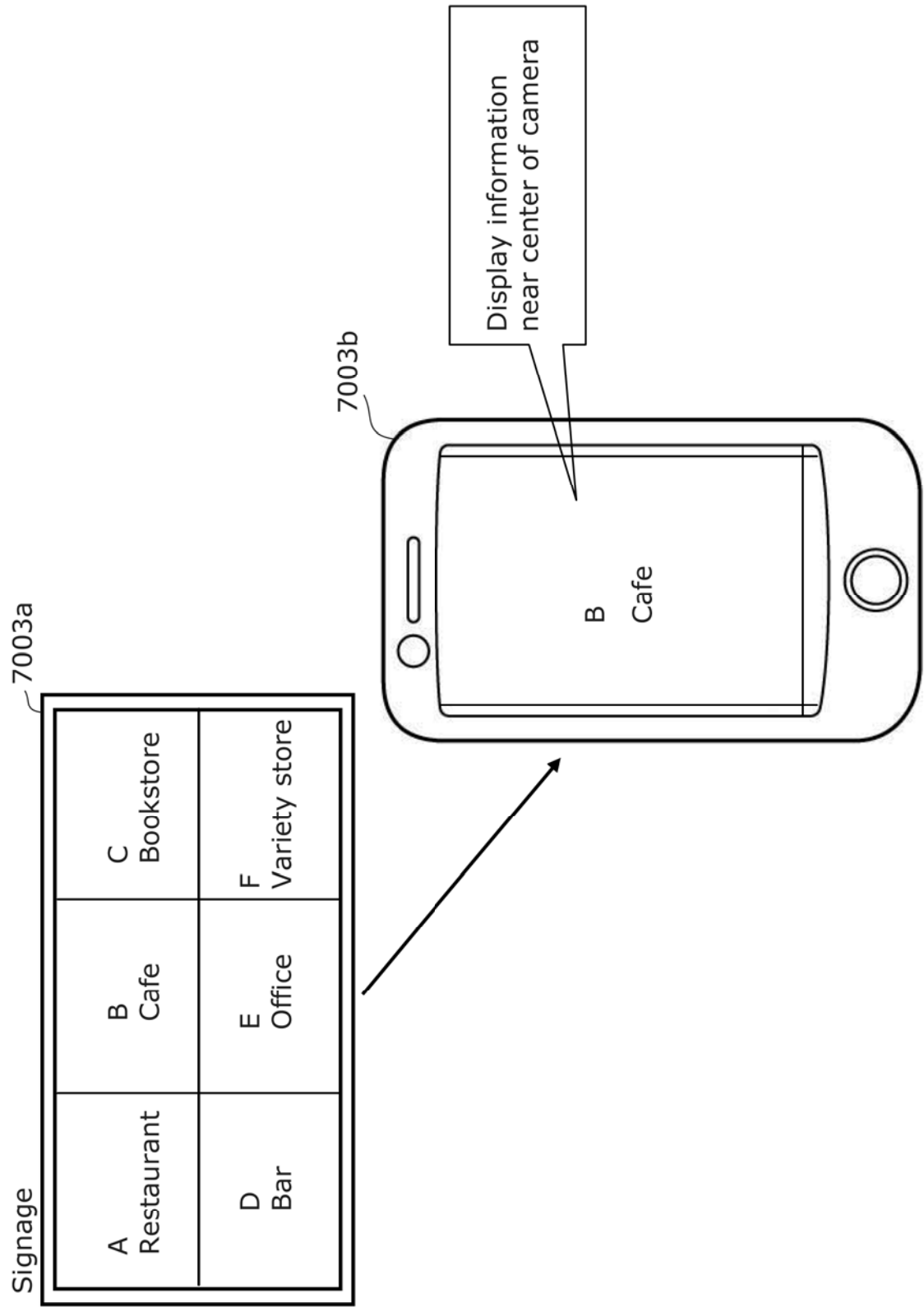


FIG. 209

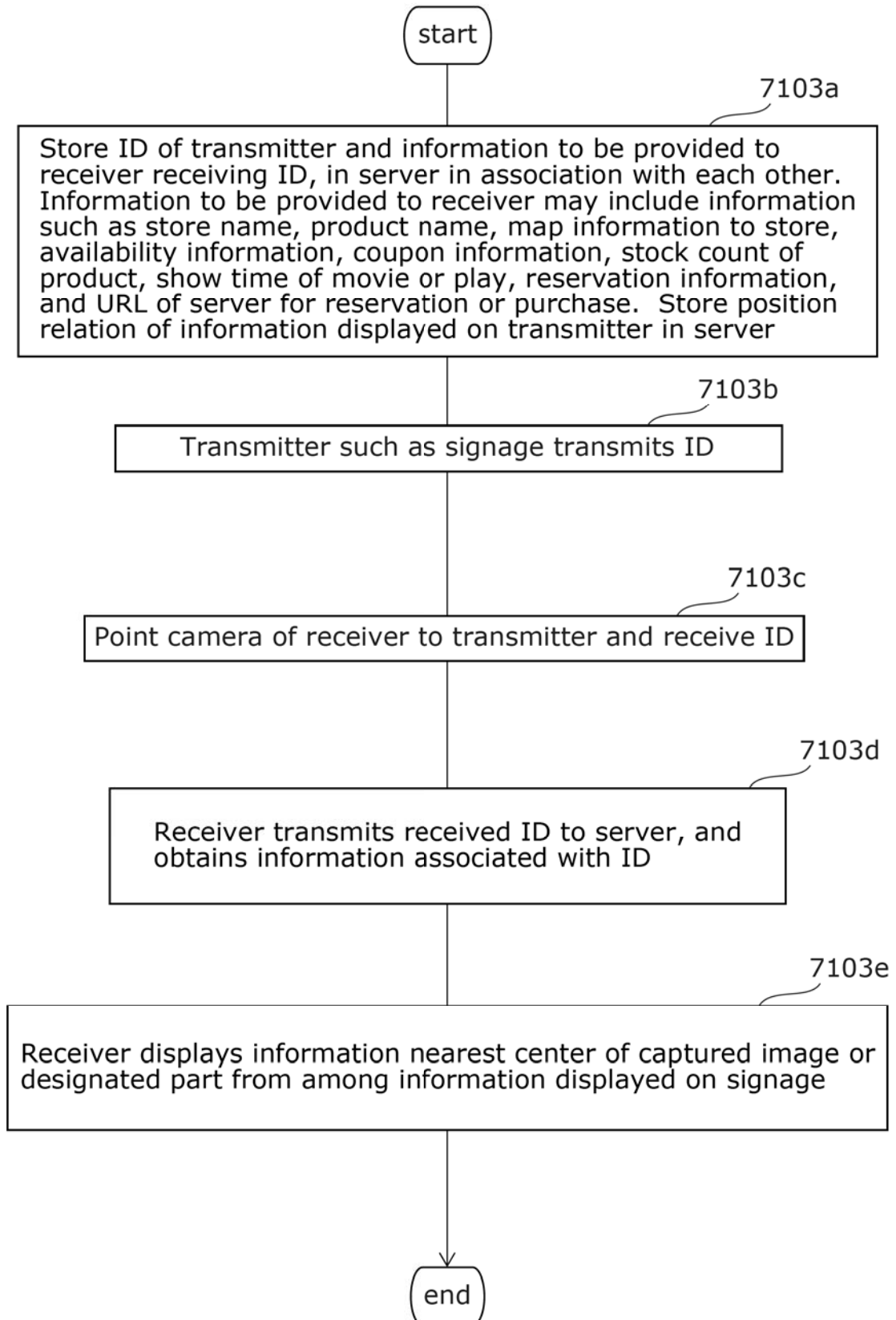


FIG. 210

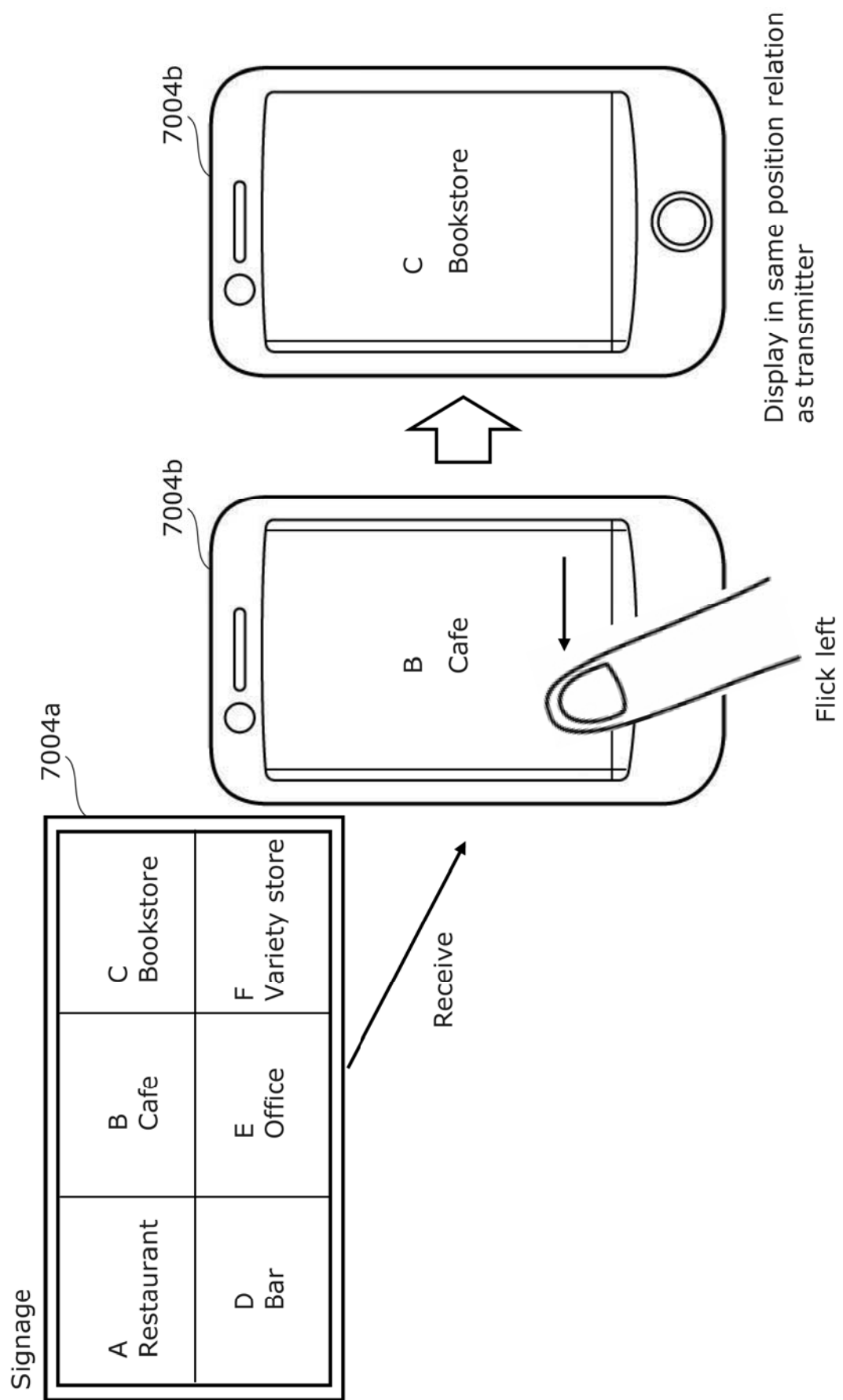




FIG. 211

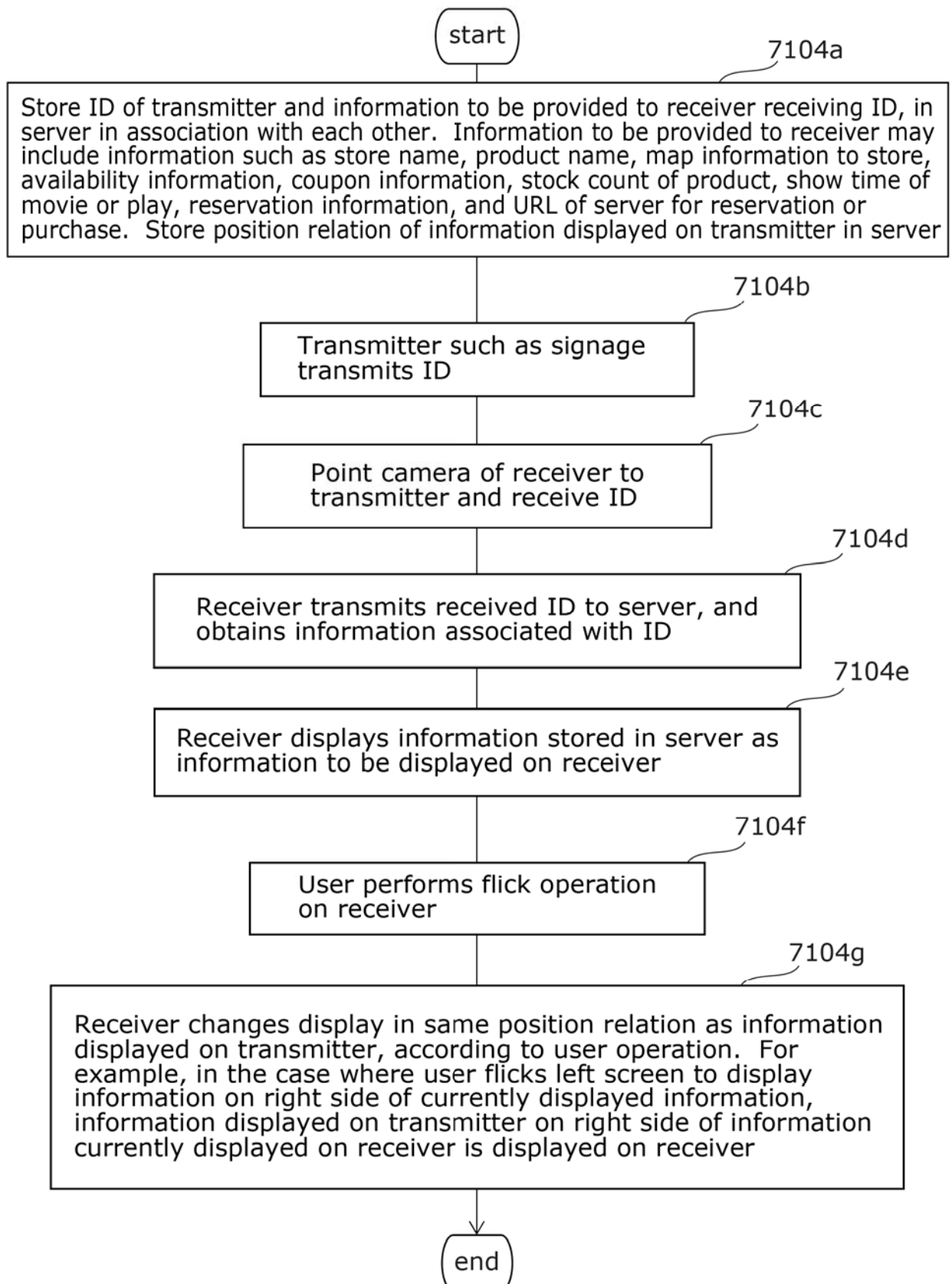


FIG. 212

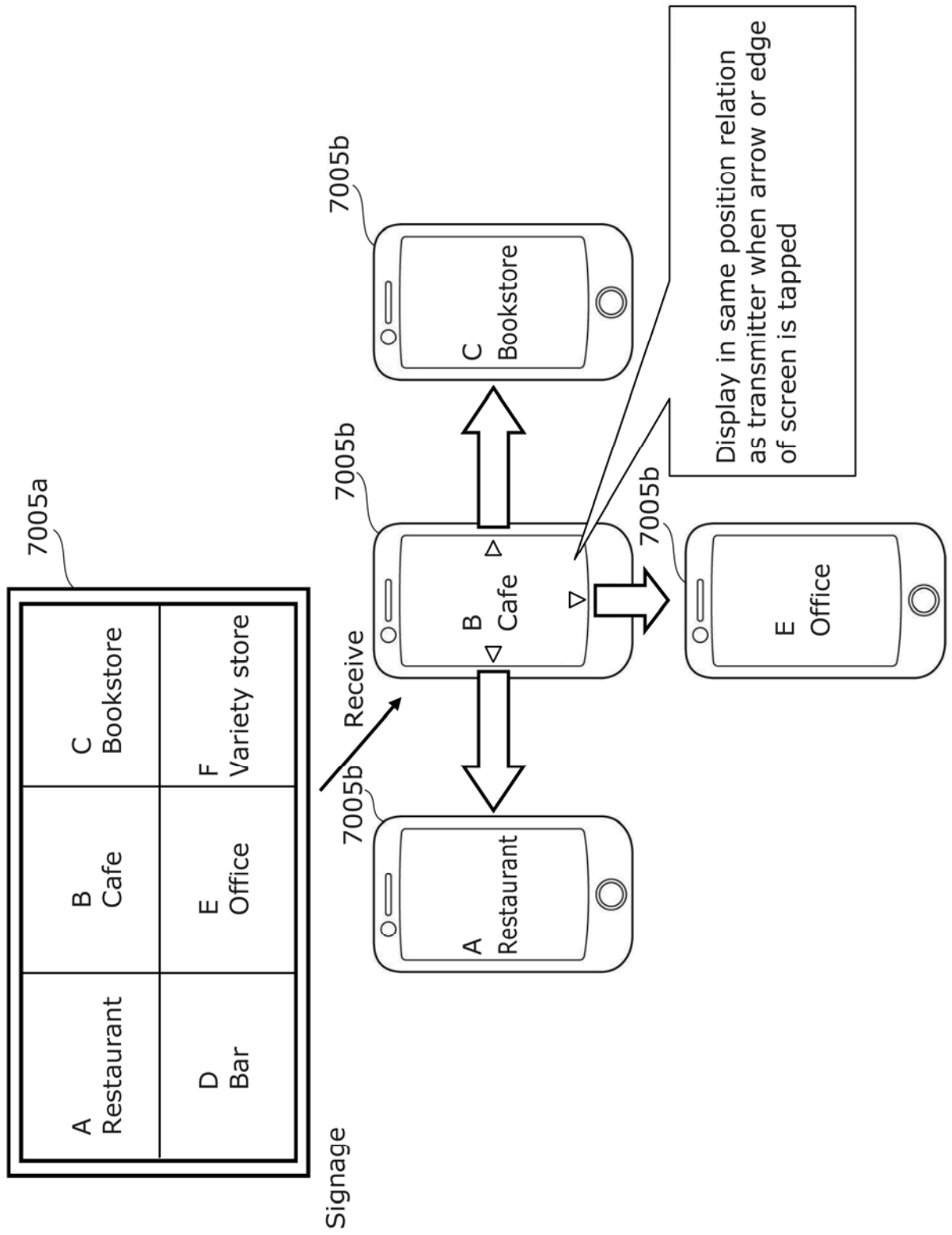


FIG. 213

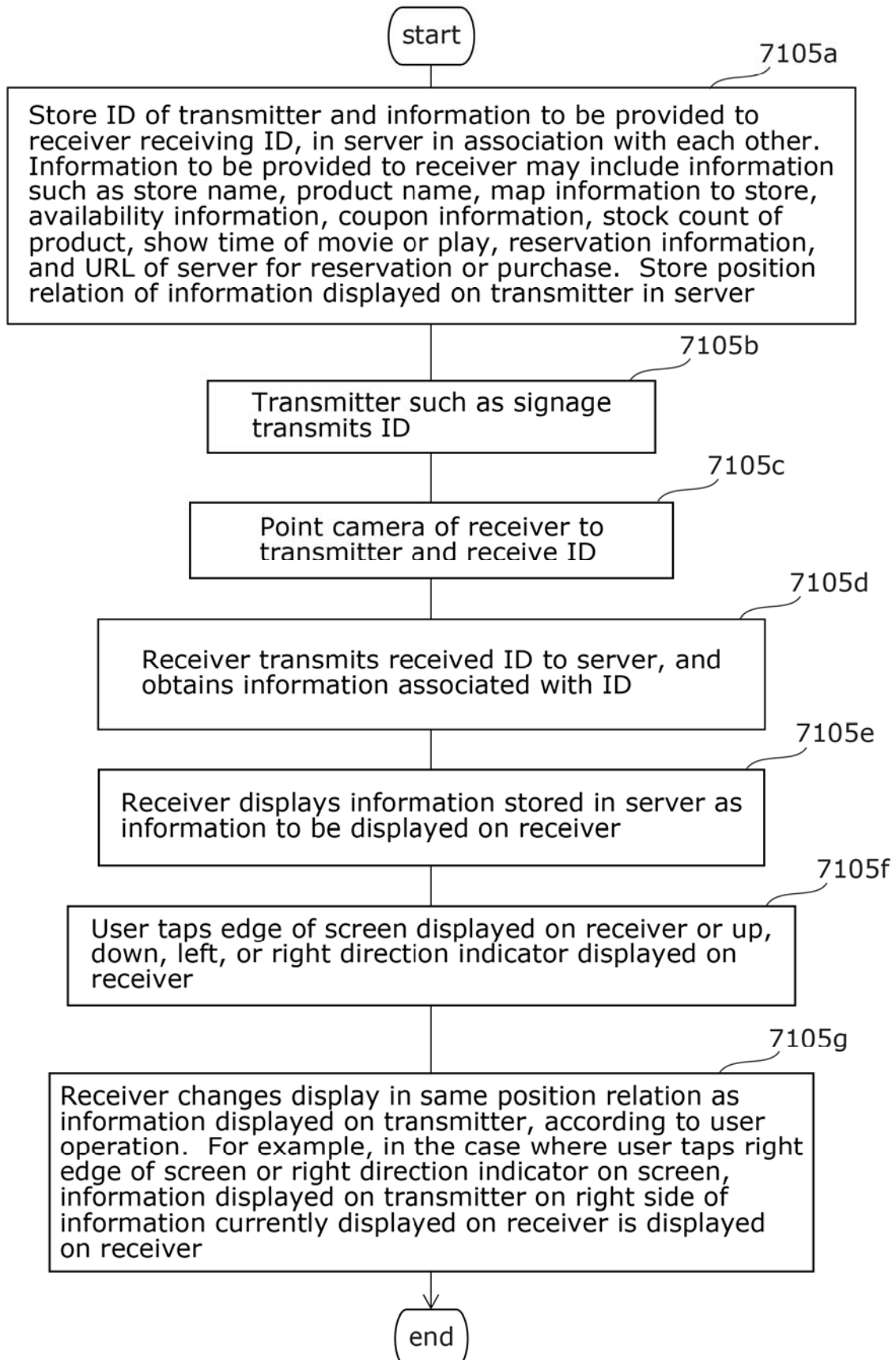


FIG. 214

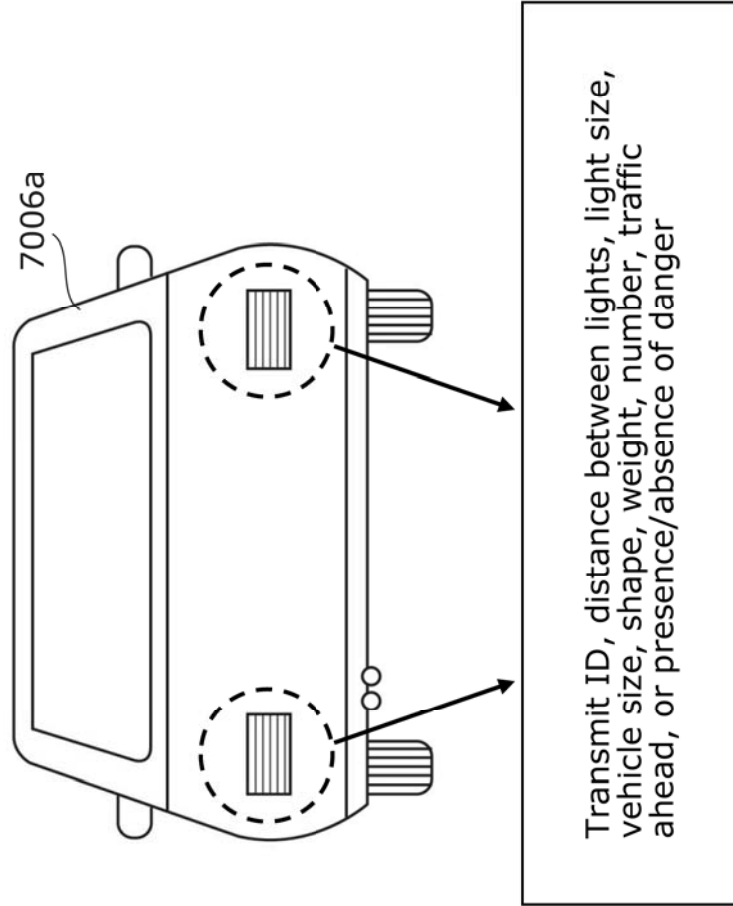


FIG. 215

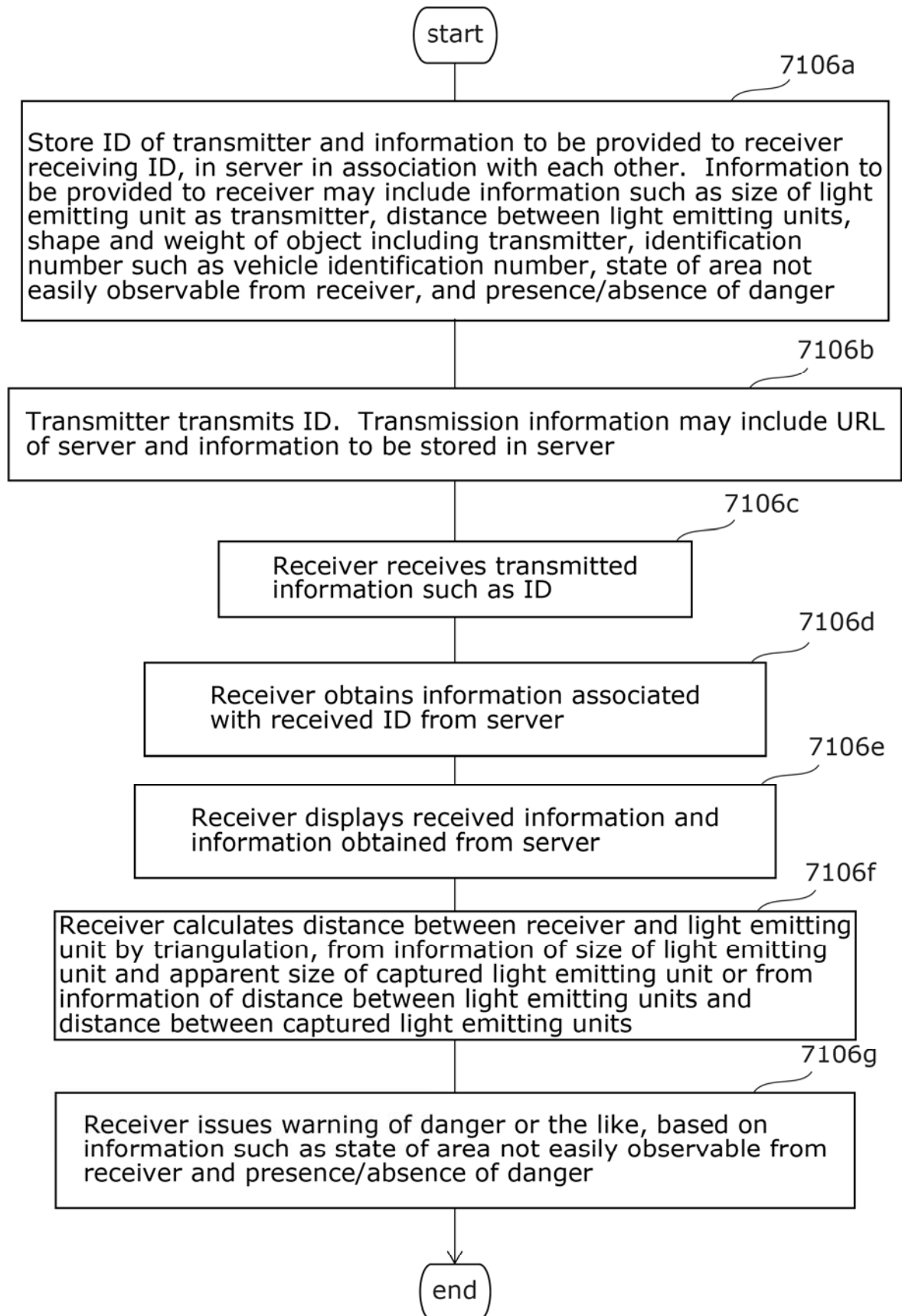


FIG. 216

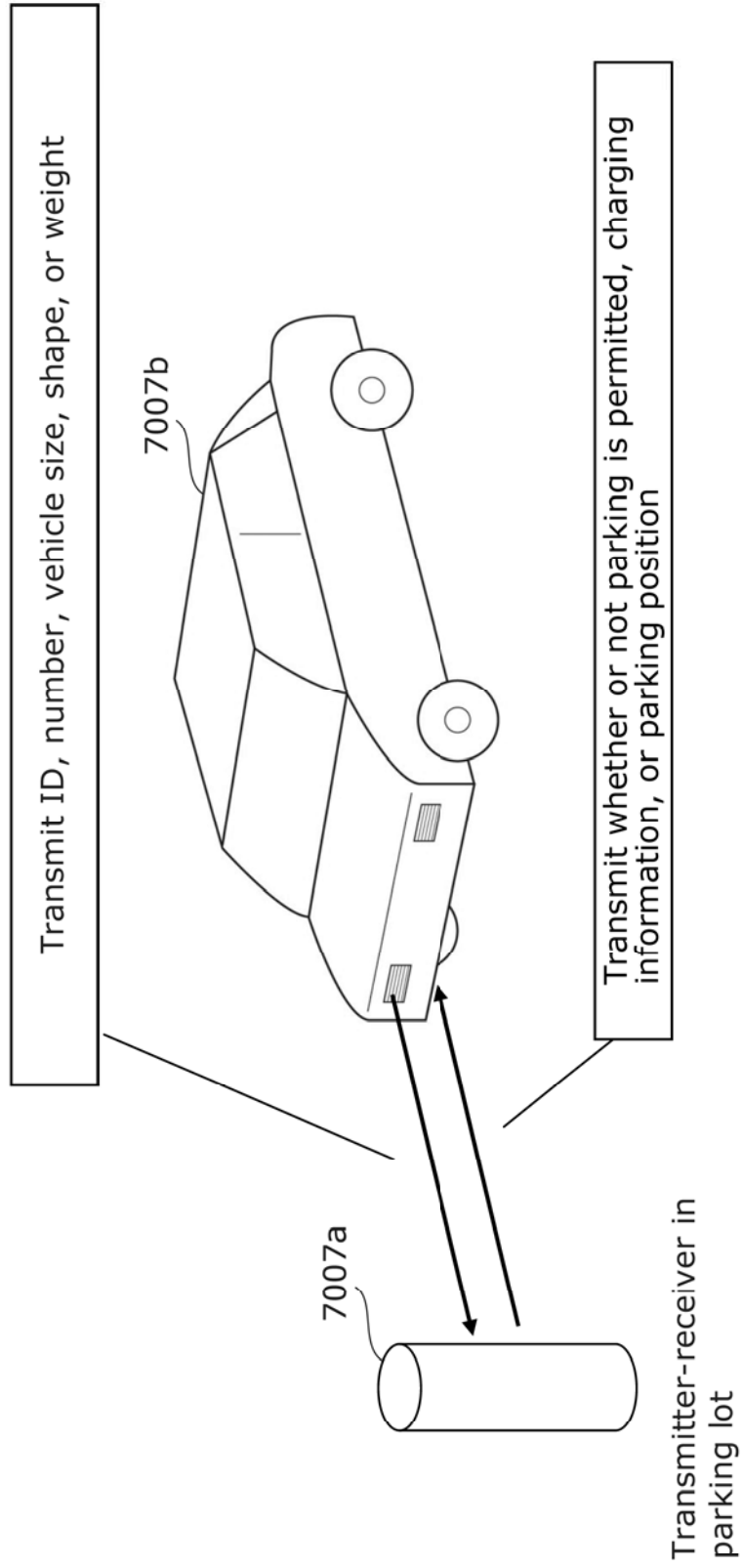


FIG. 217

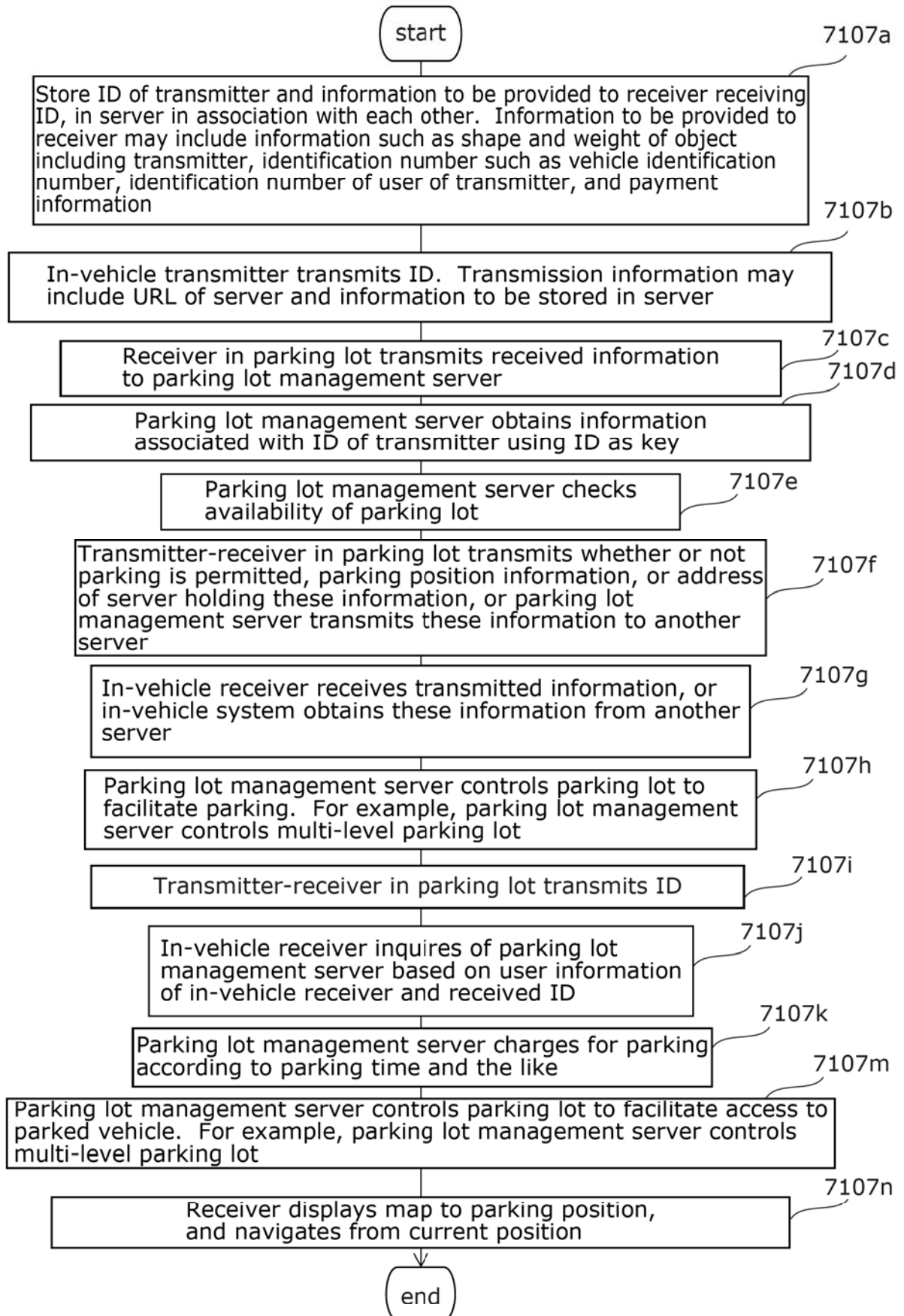


FIG. 218

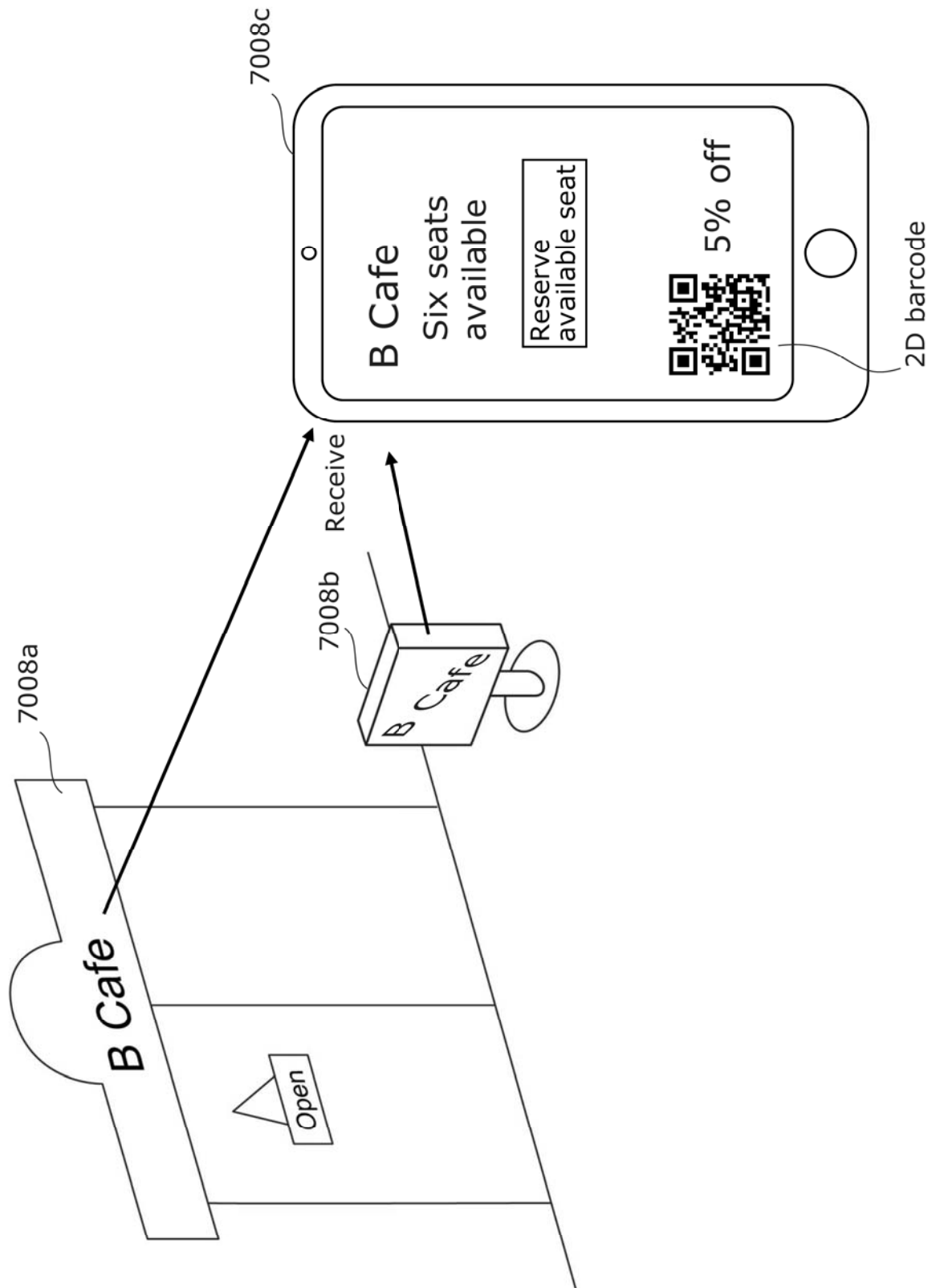




FIG. 219

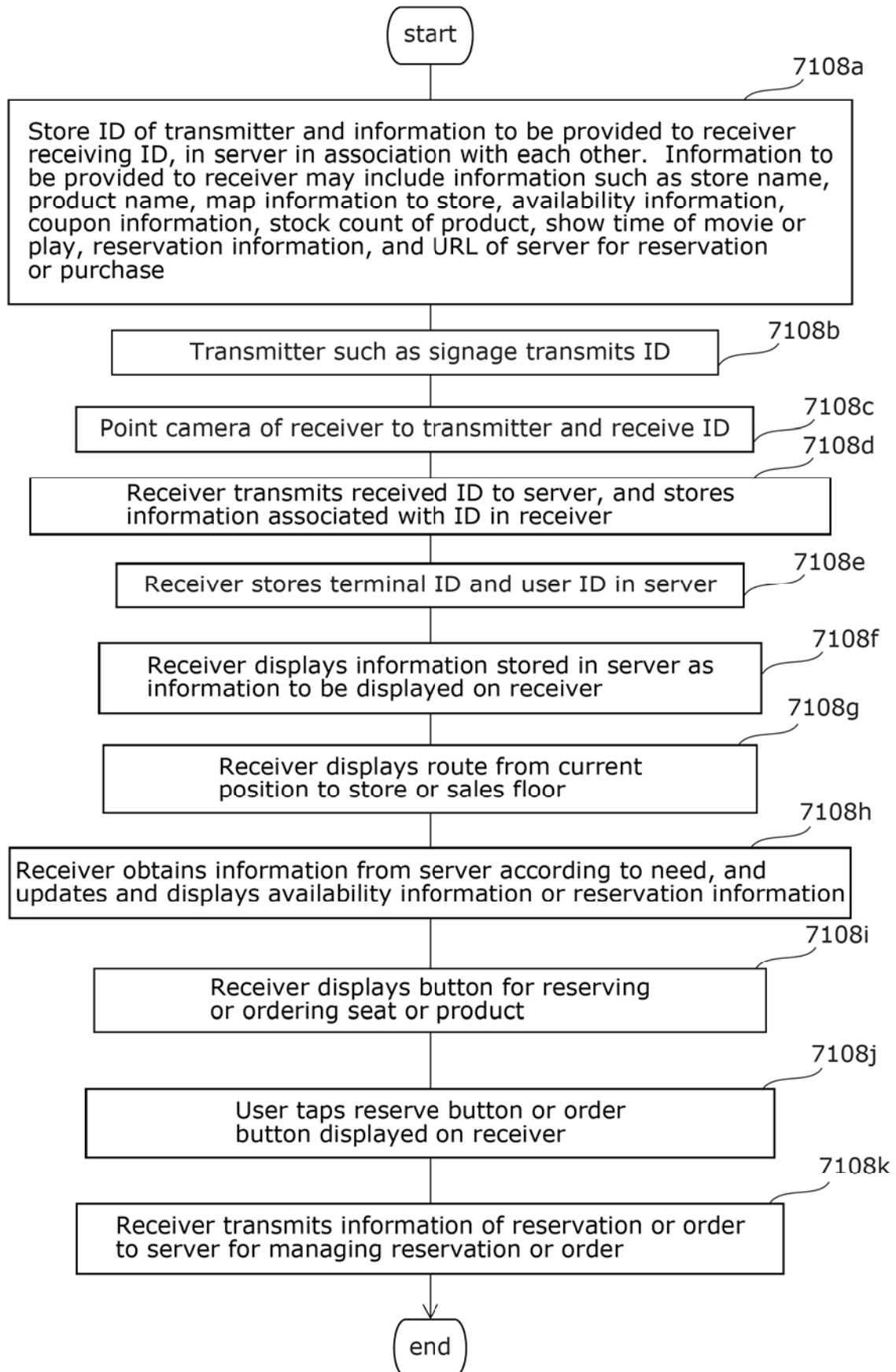


FIG. 220

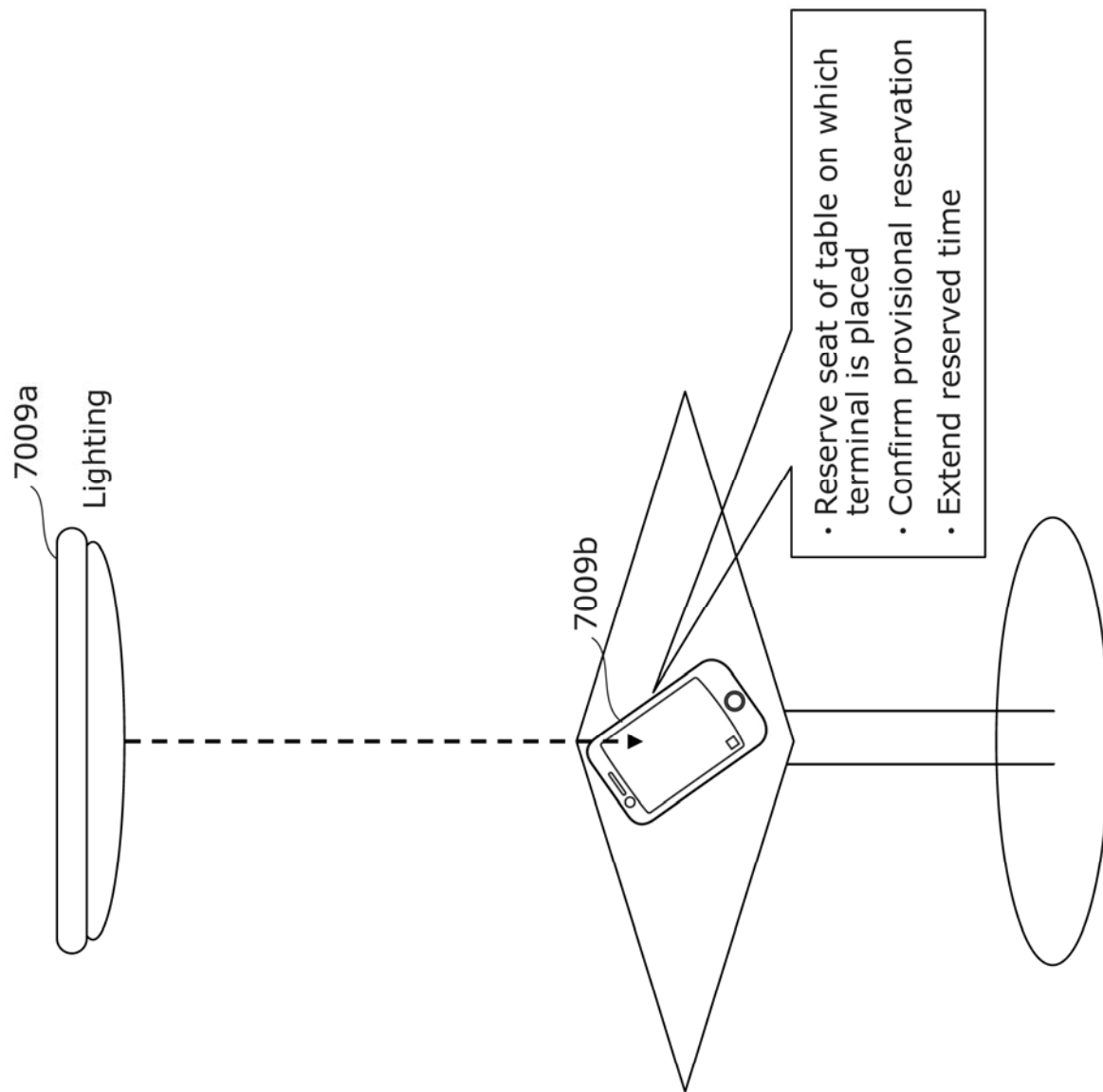


FIG. 221

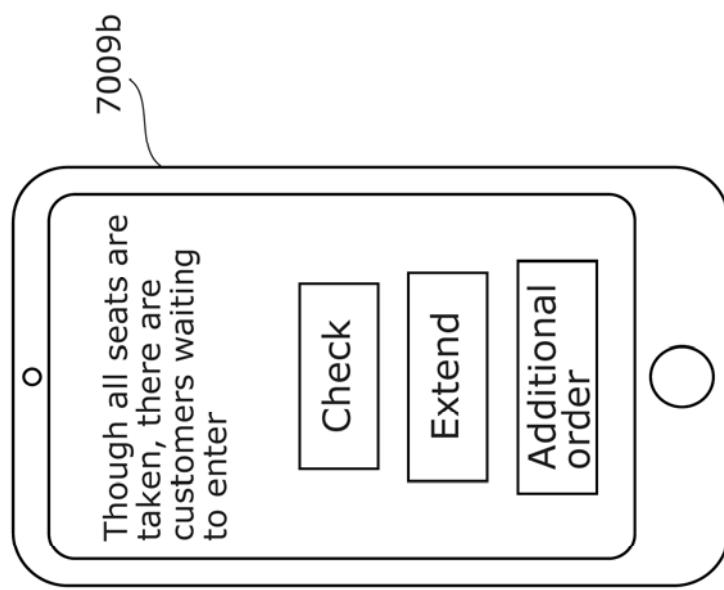


FIG. 222

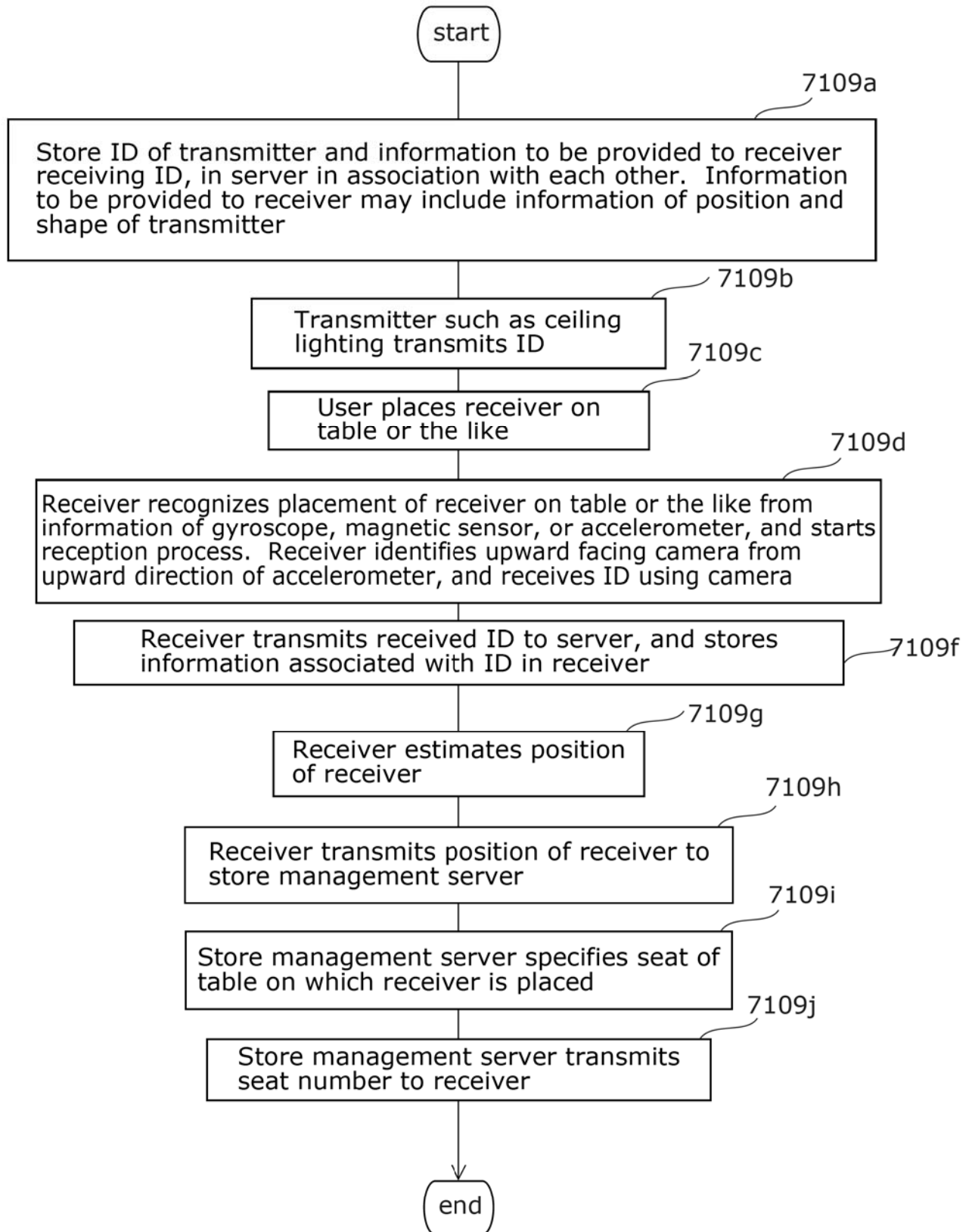


FIG. 223

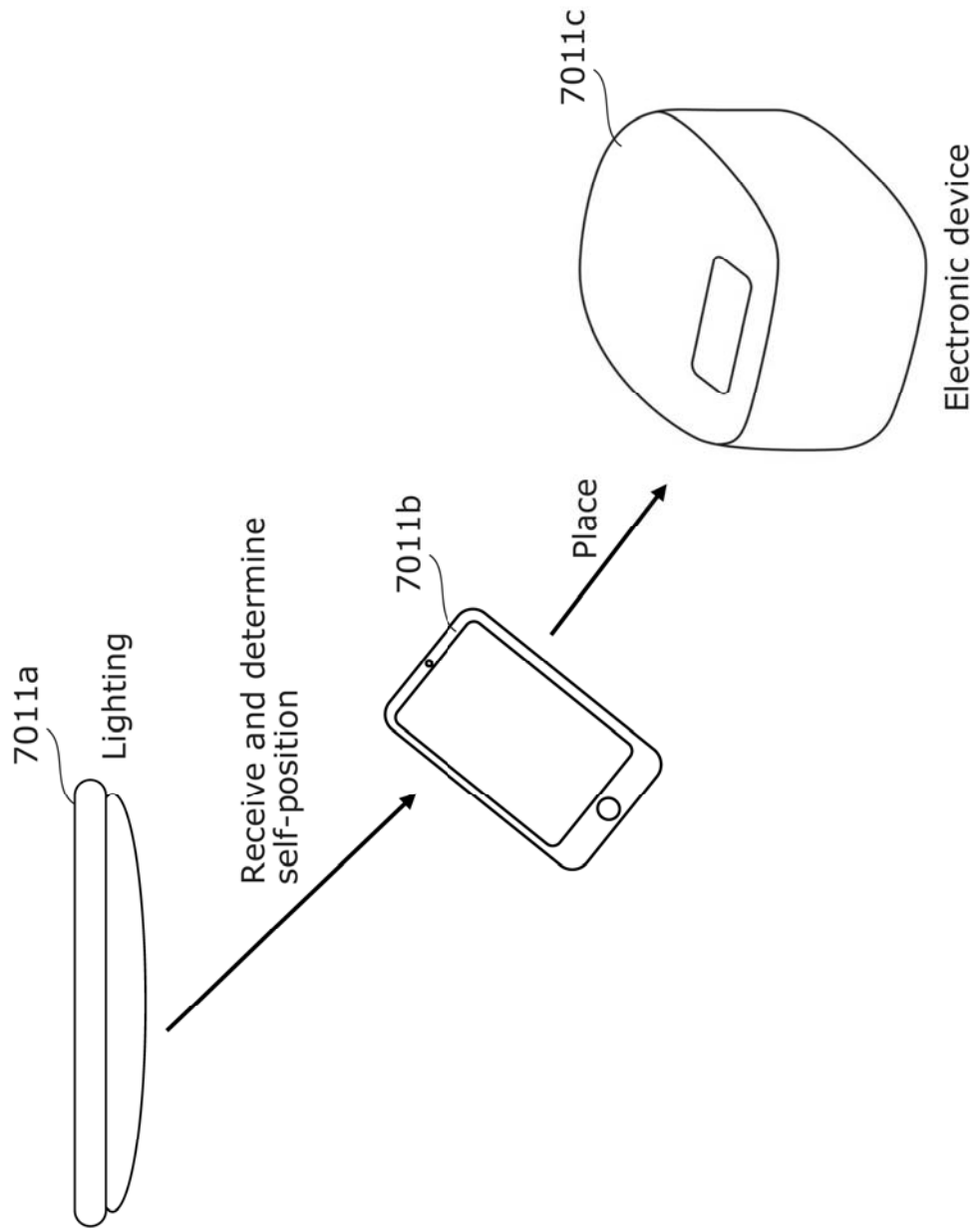


FIG. 224

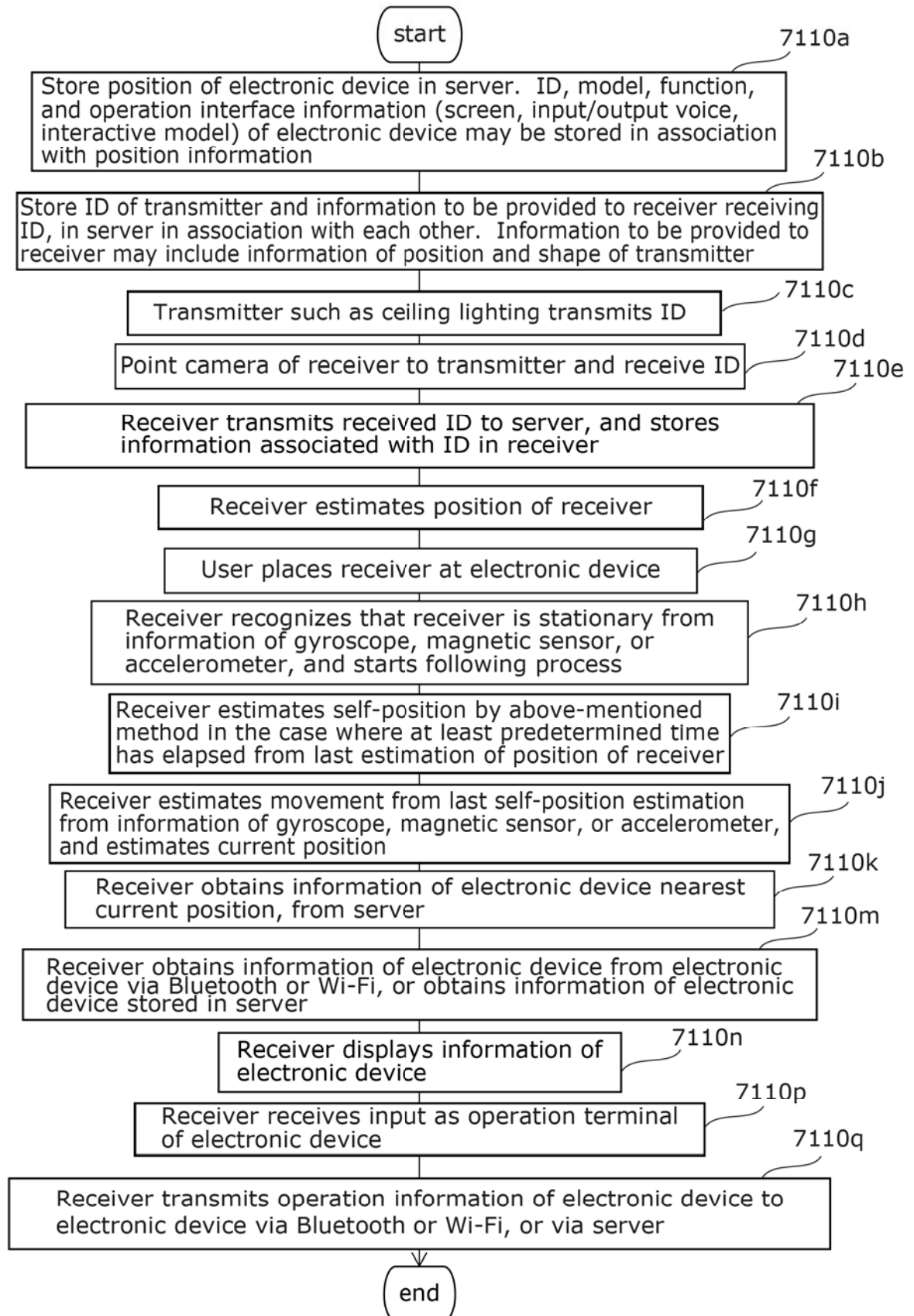


FIG. 225

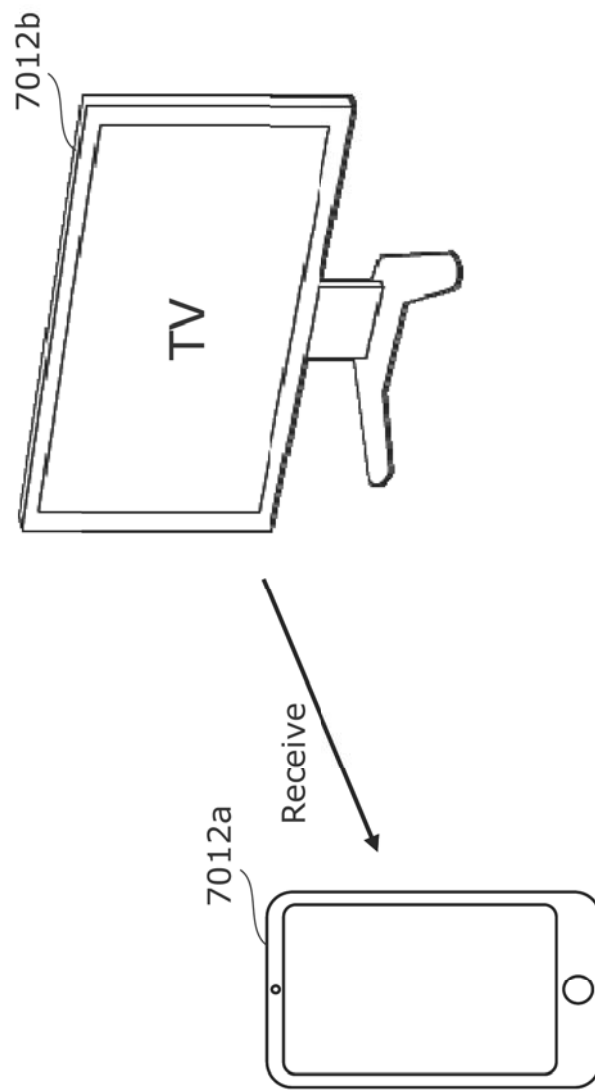


FIG. 226

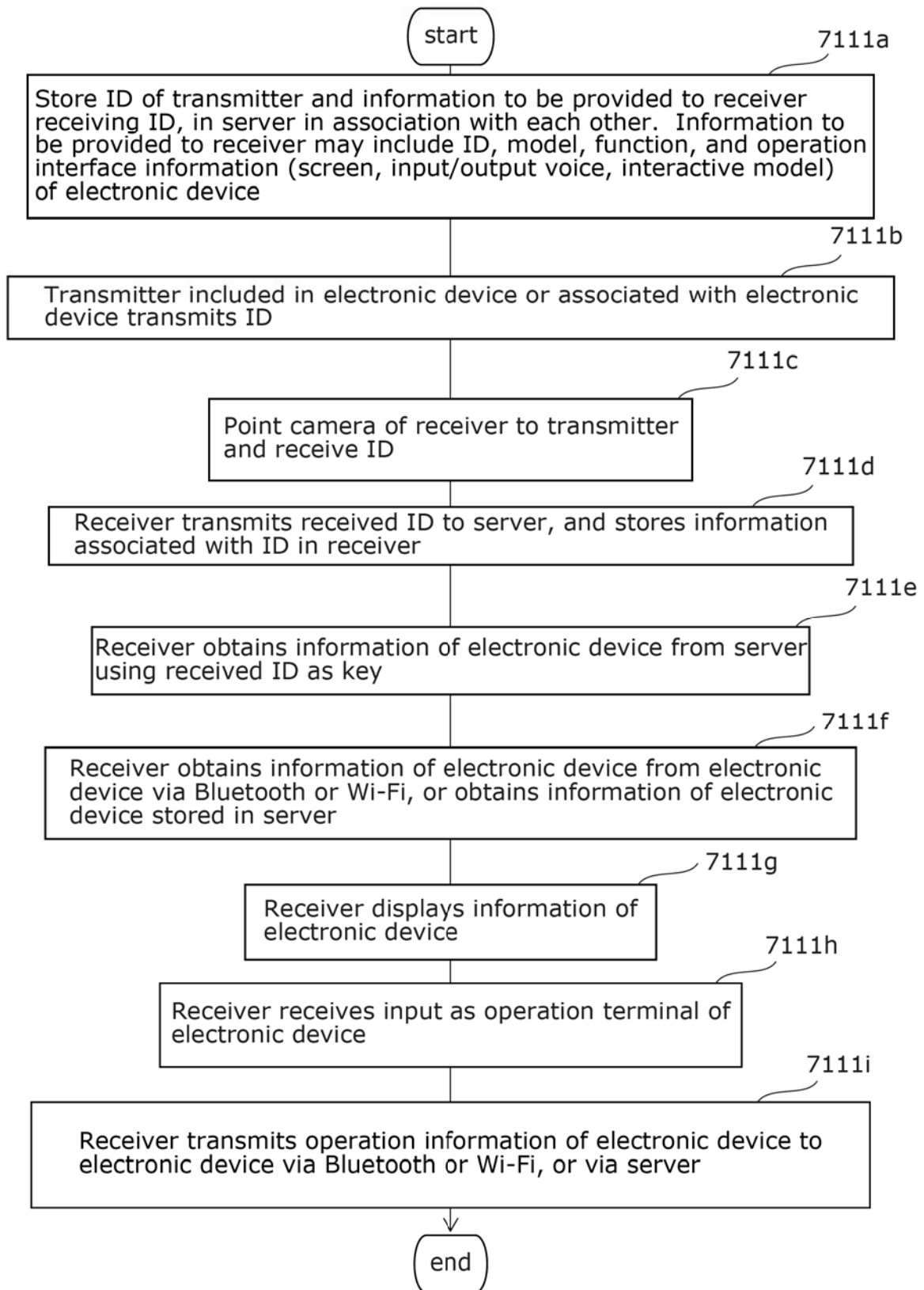




FIG. 227

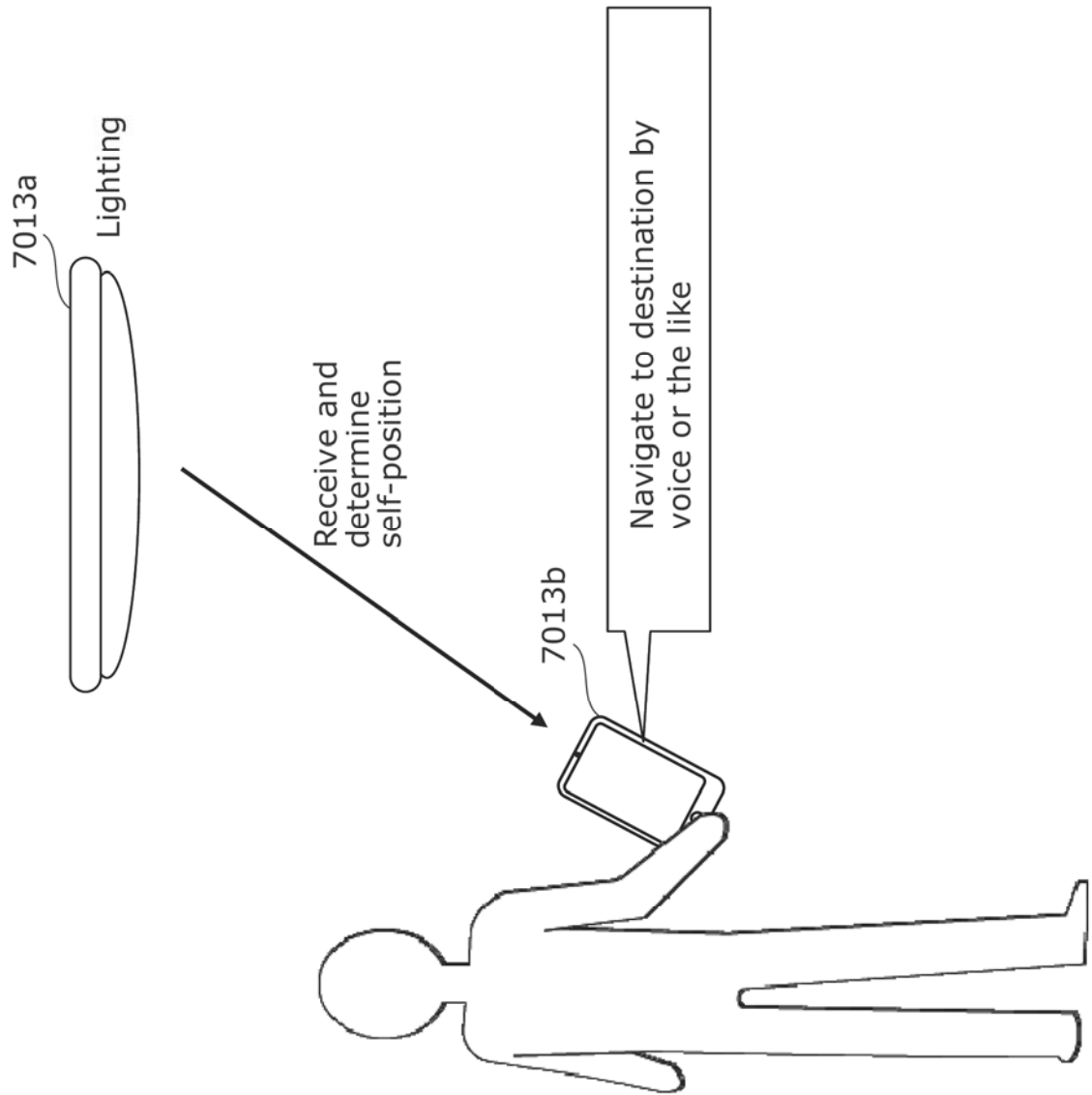


FIG. 228

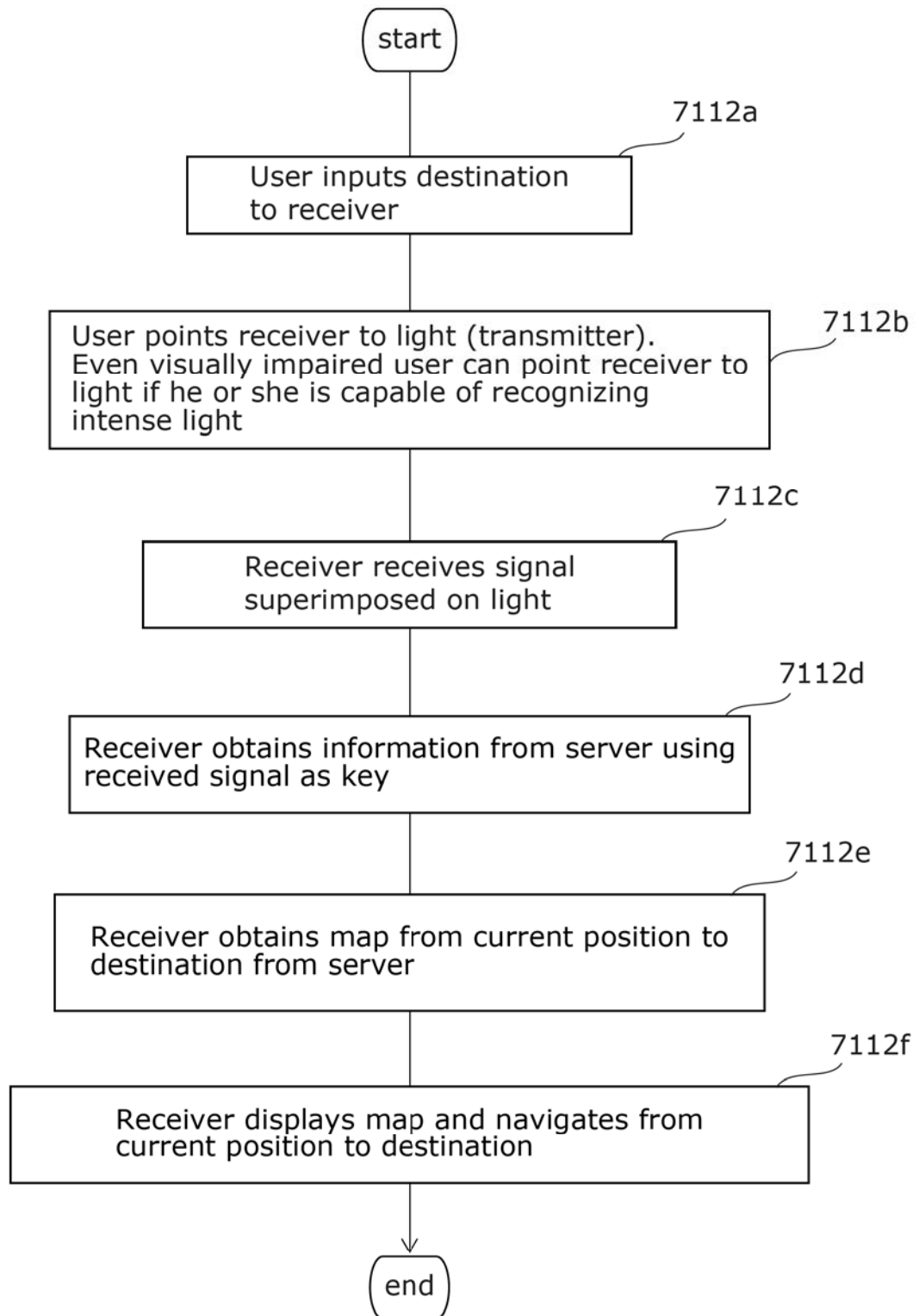


FIG. 229

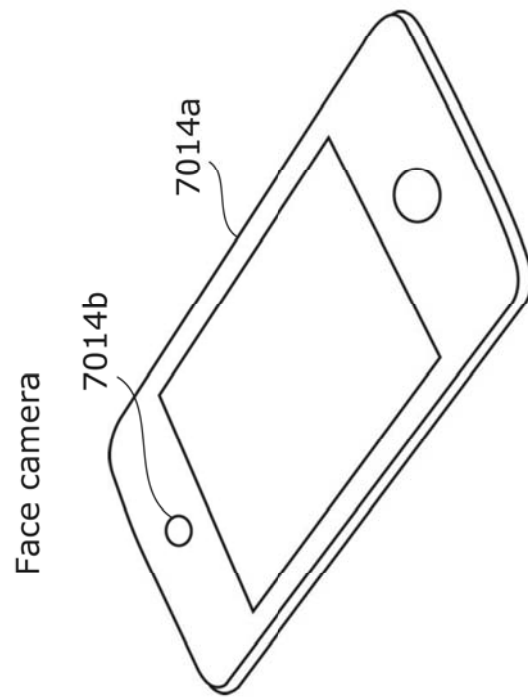


FIG. 230

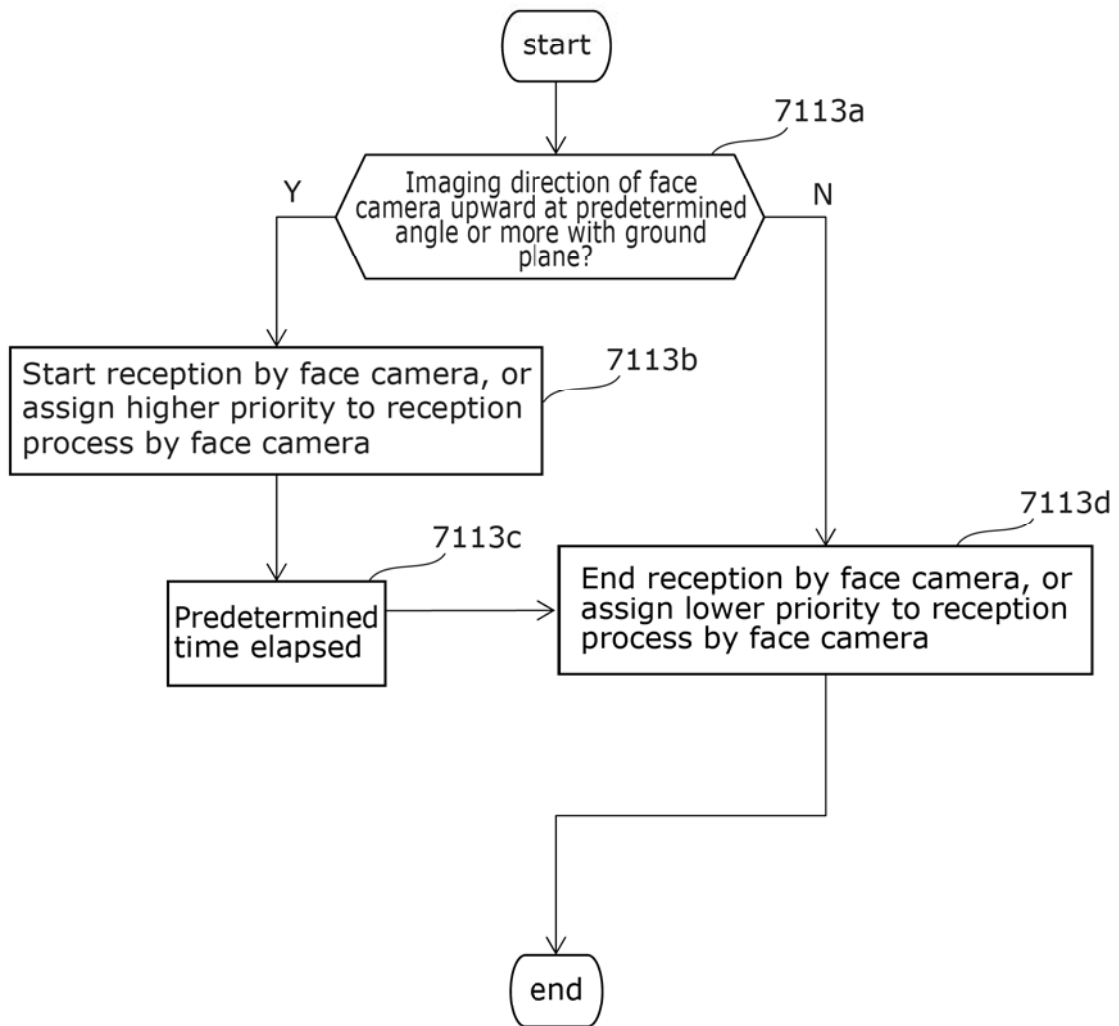


FIG. 231

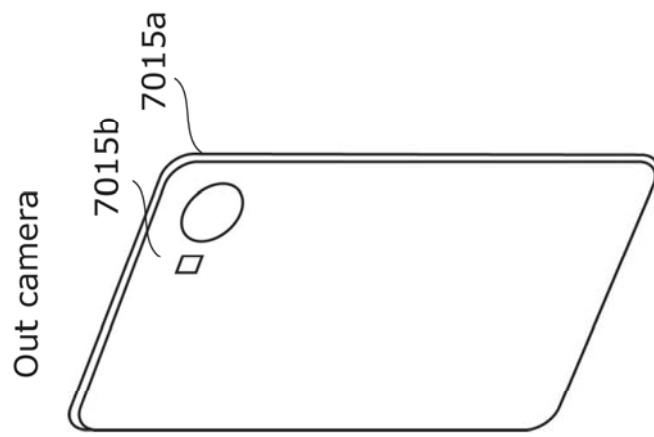


FIG. 232

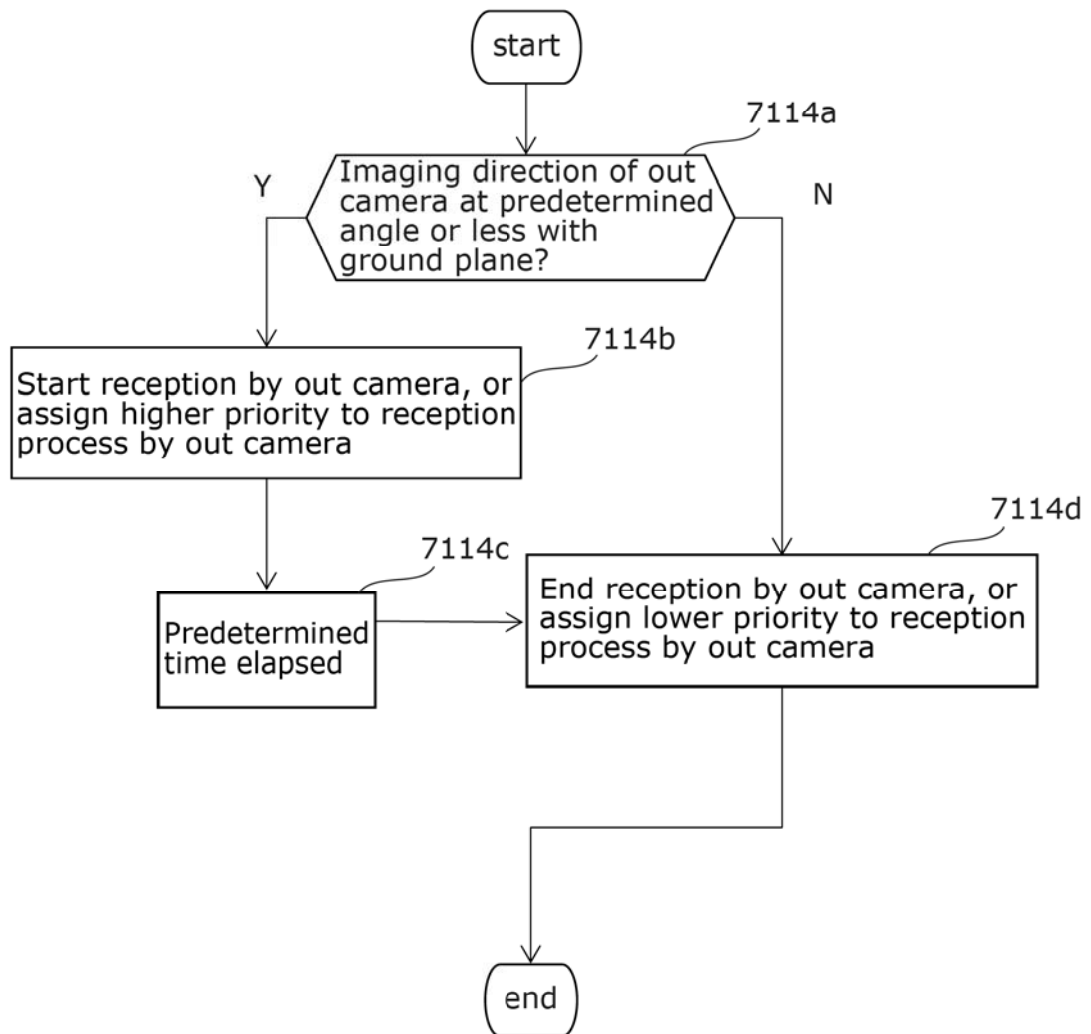


FIG. 233

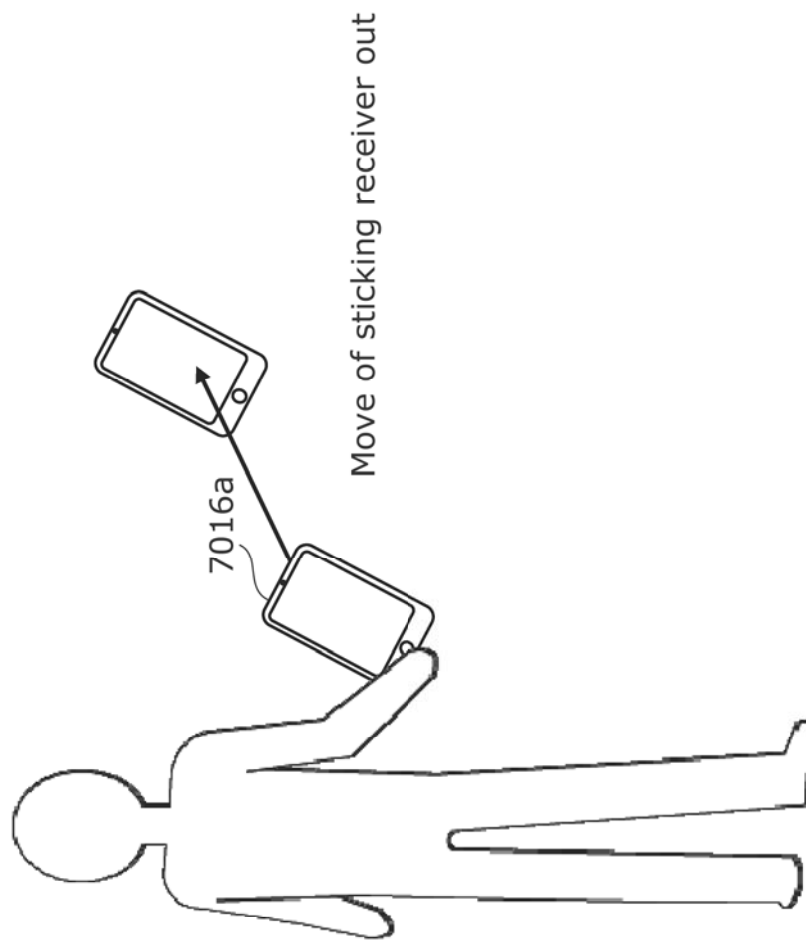


FIG. 234

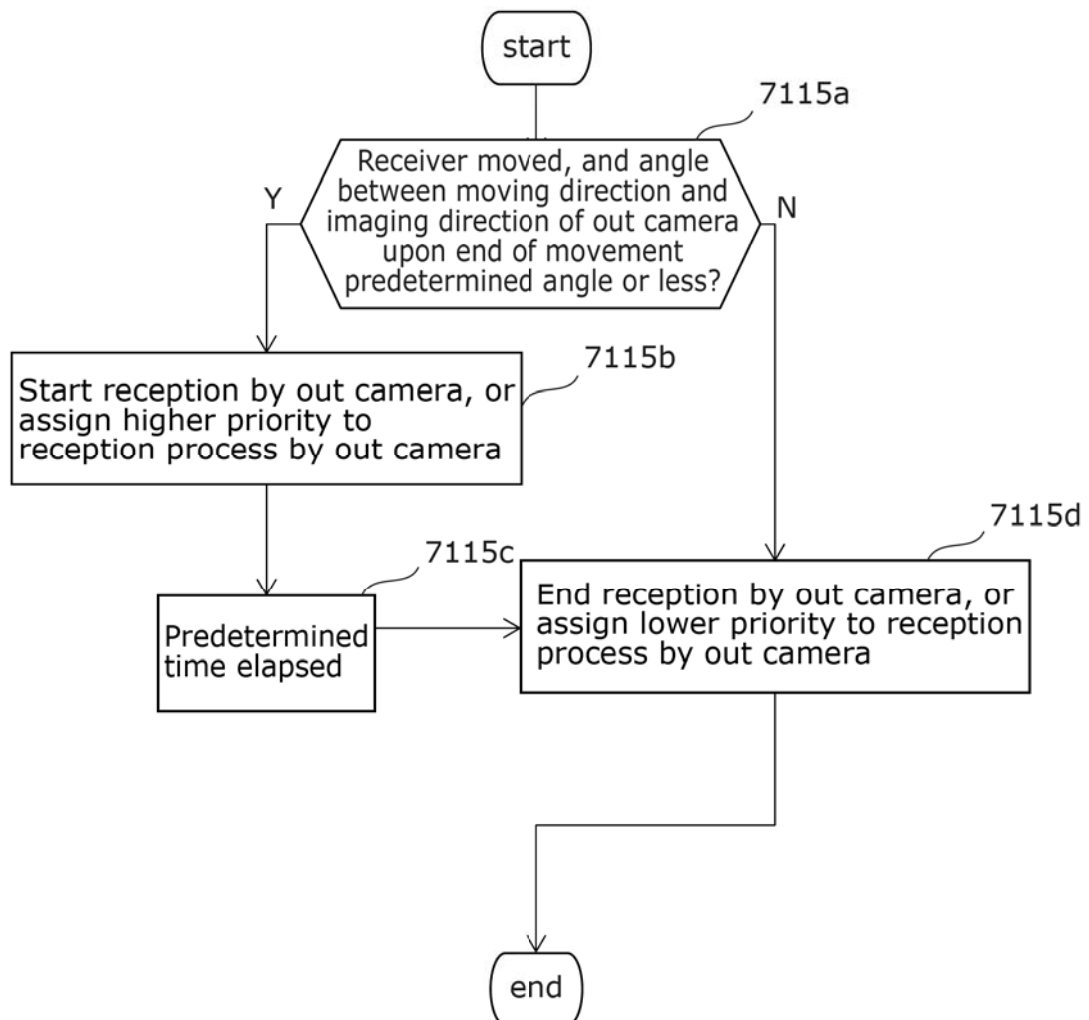




FIG. 235

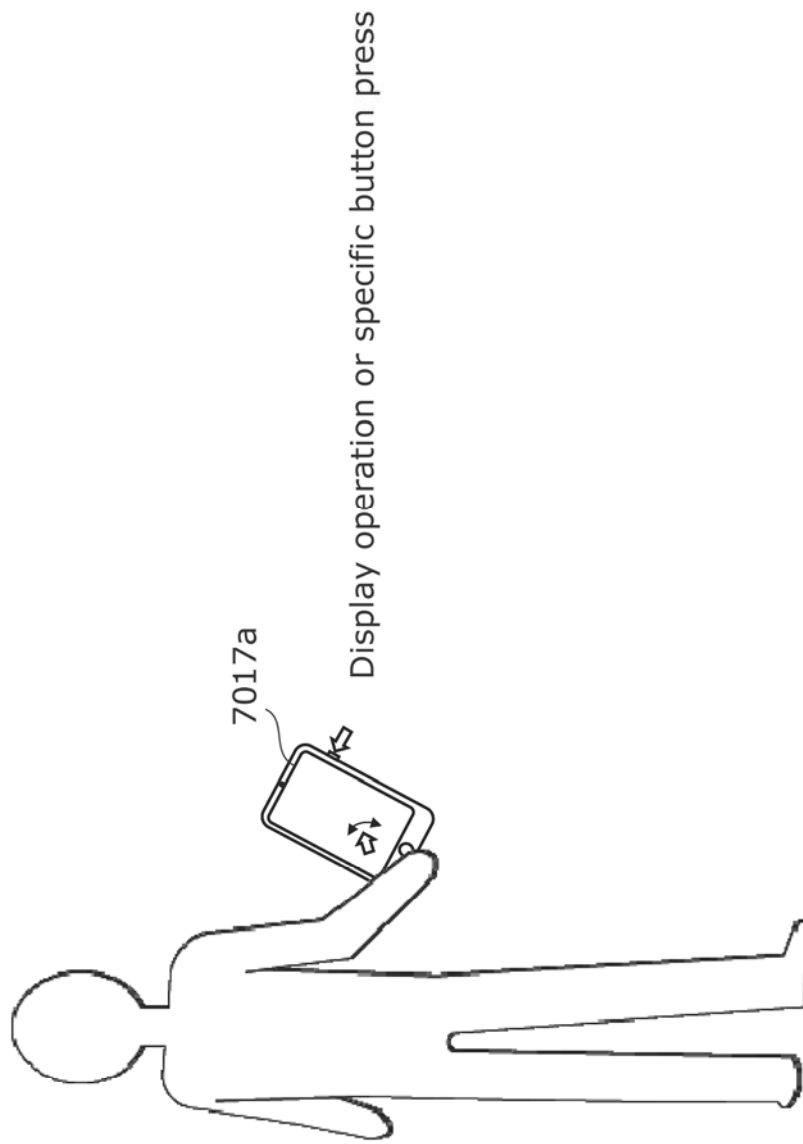


FIG. 236

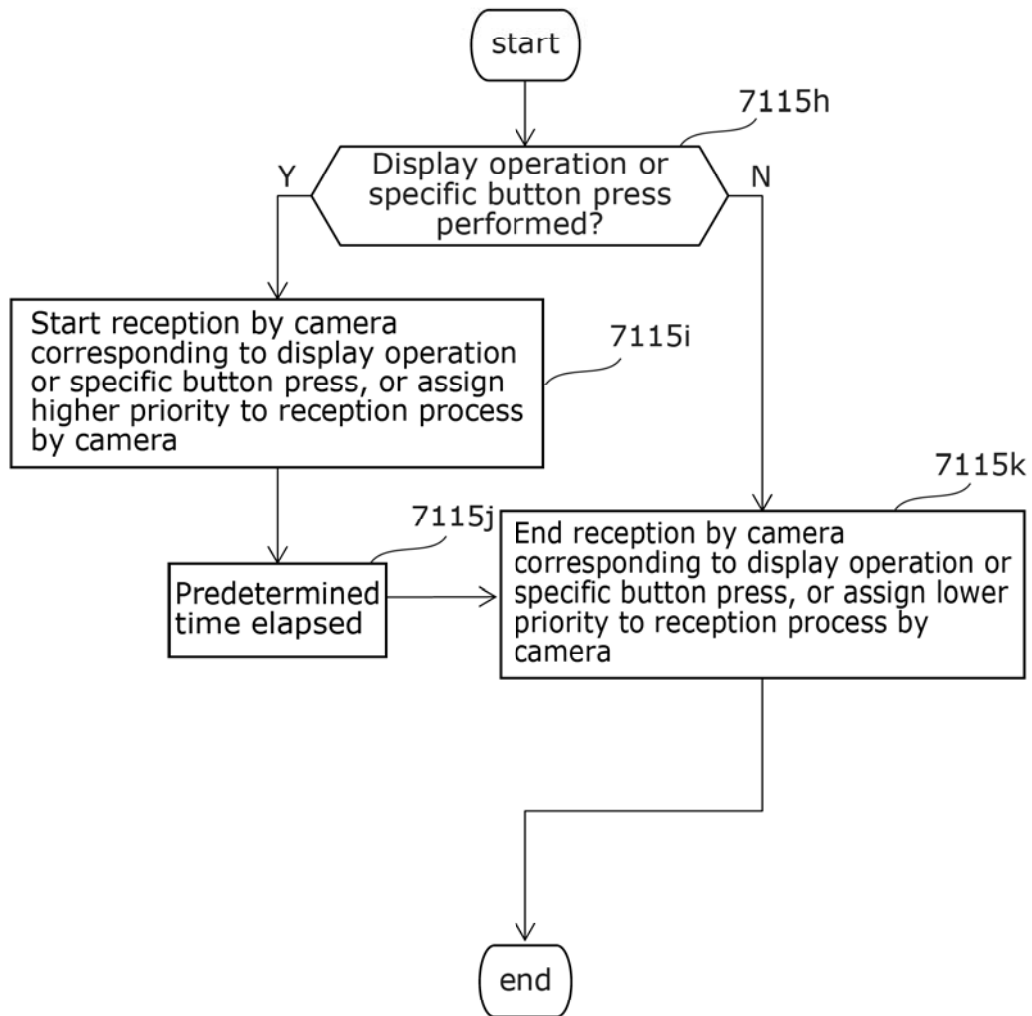


FIG. 237

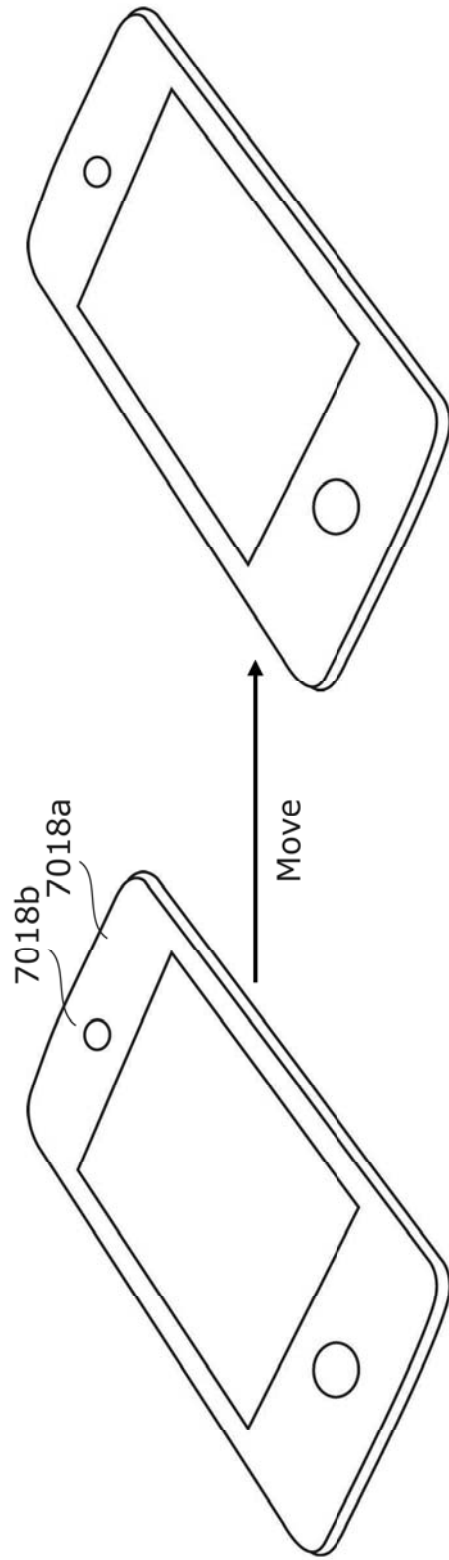


FIG. 238

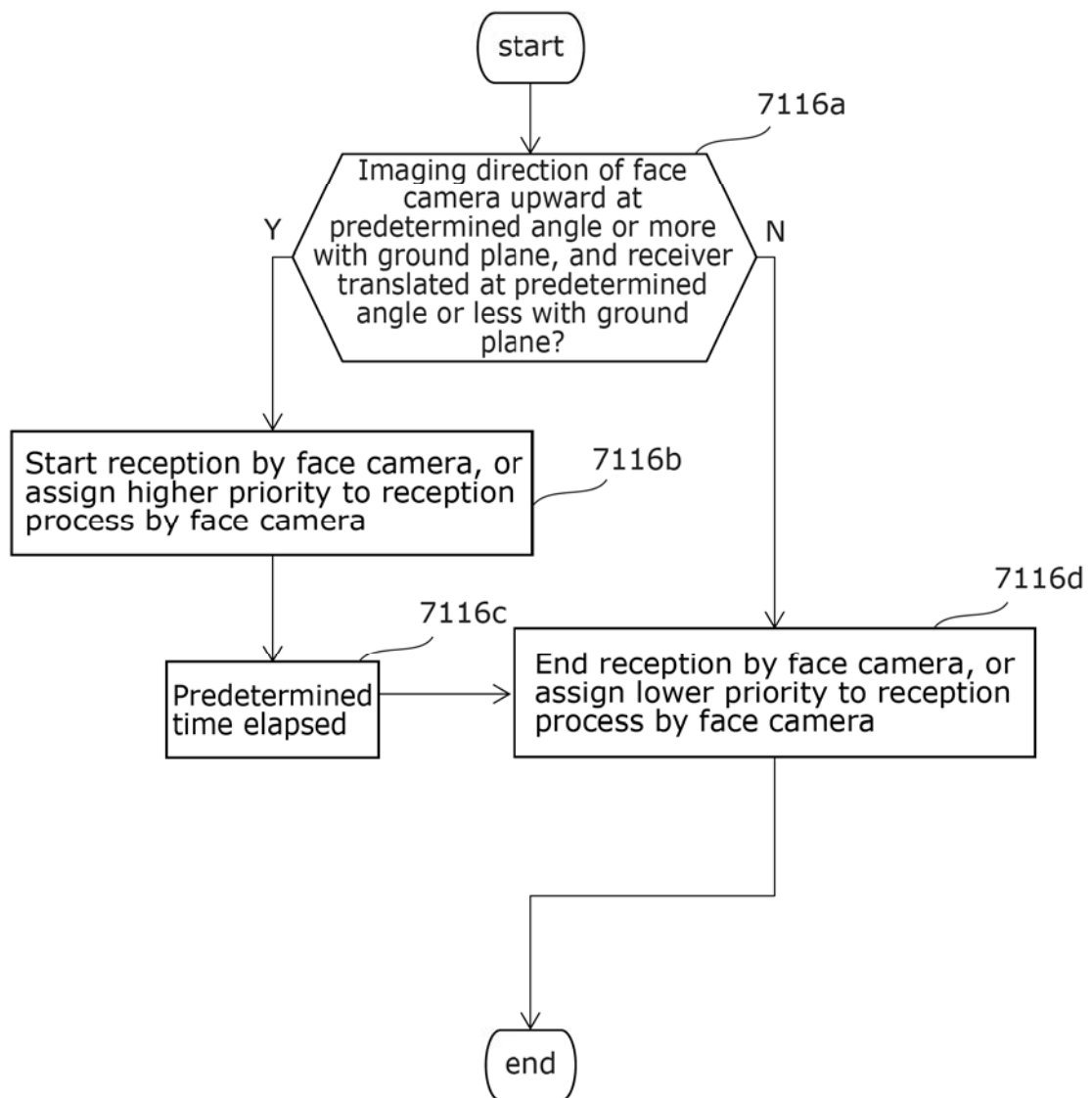


FIG. 239

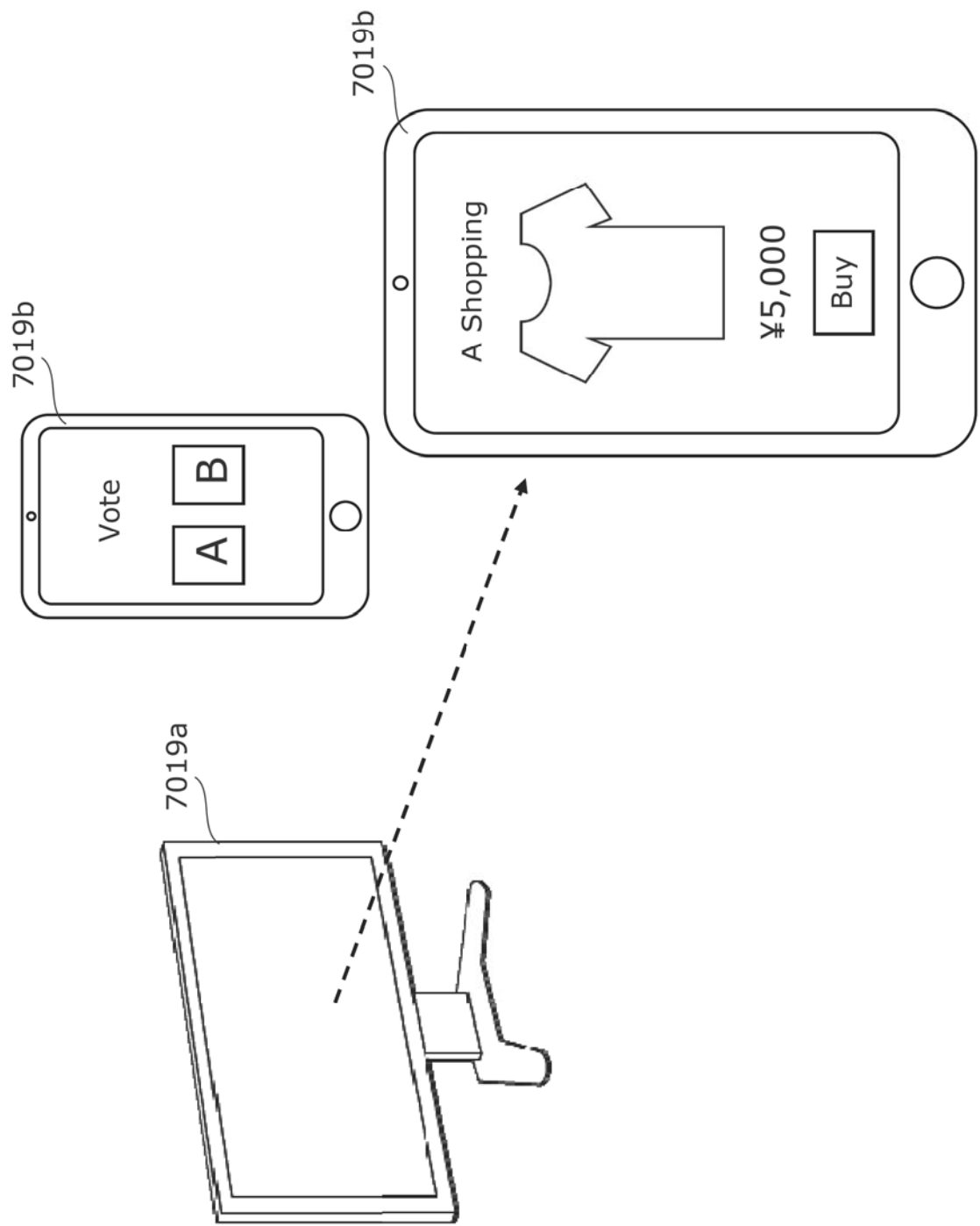


FIG. 240

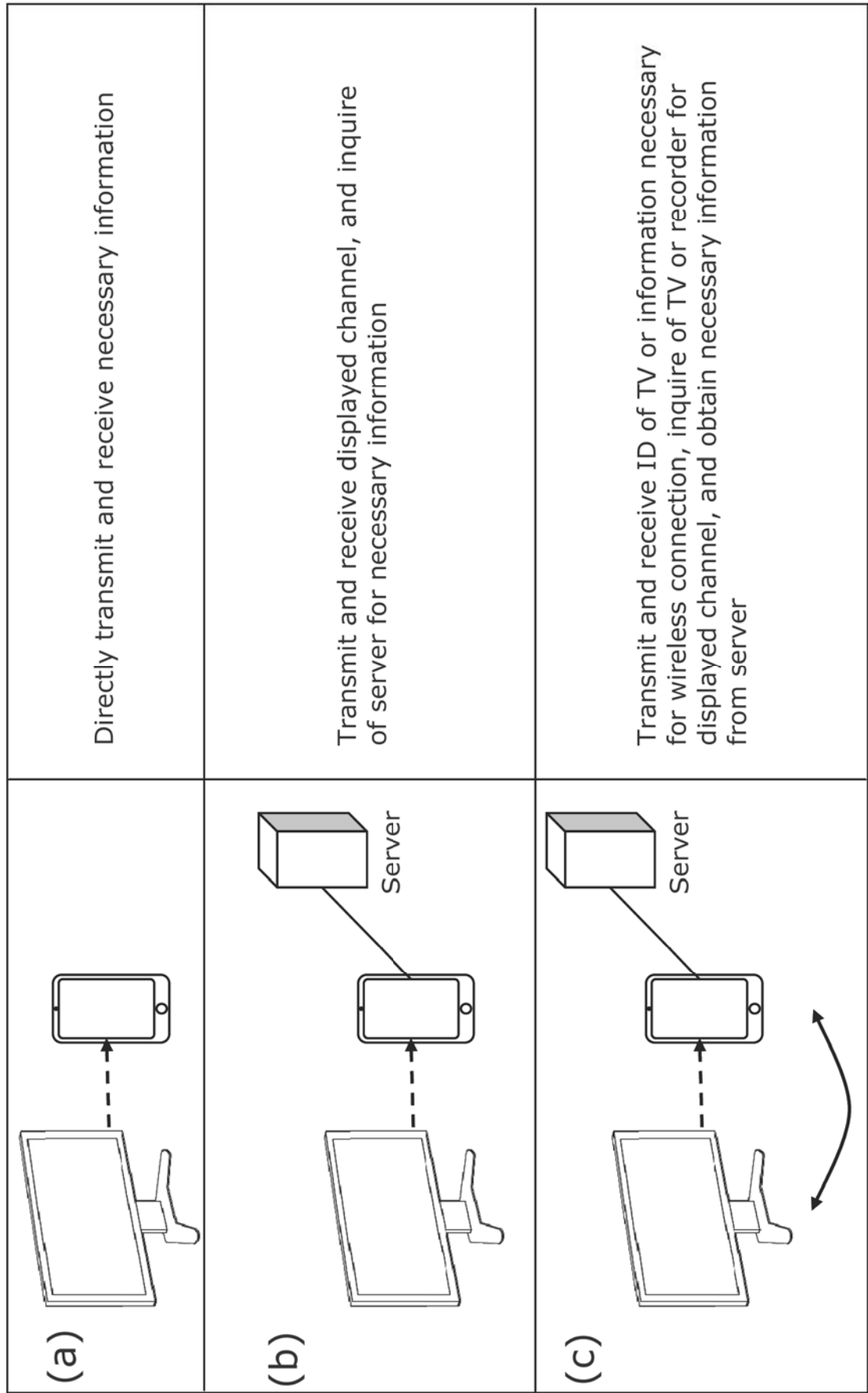


FIG. 241

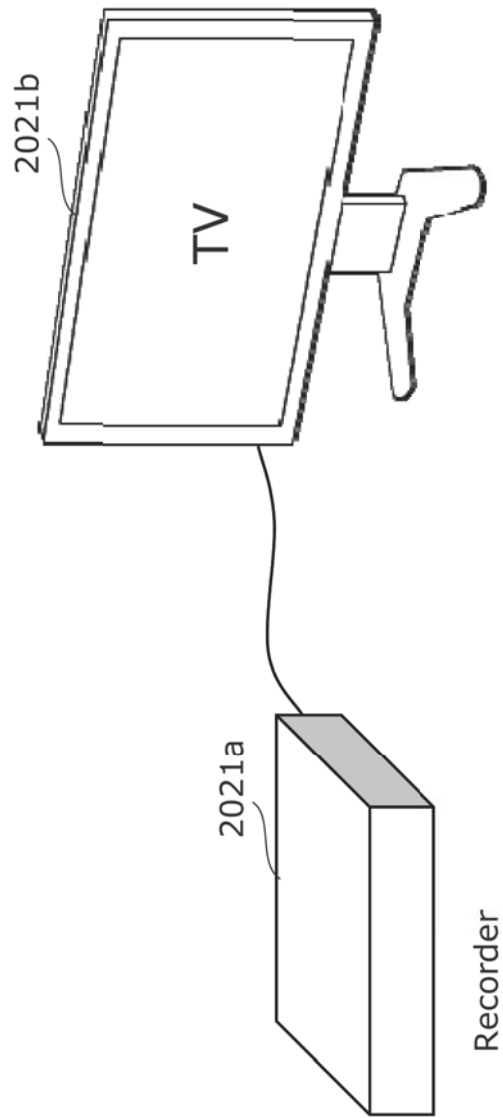


FIG. 242

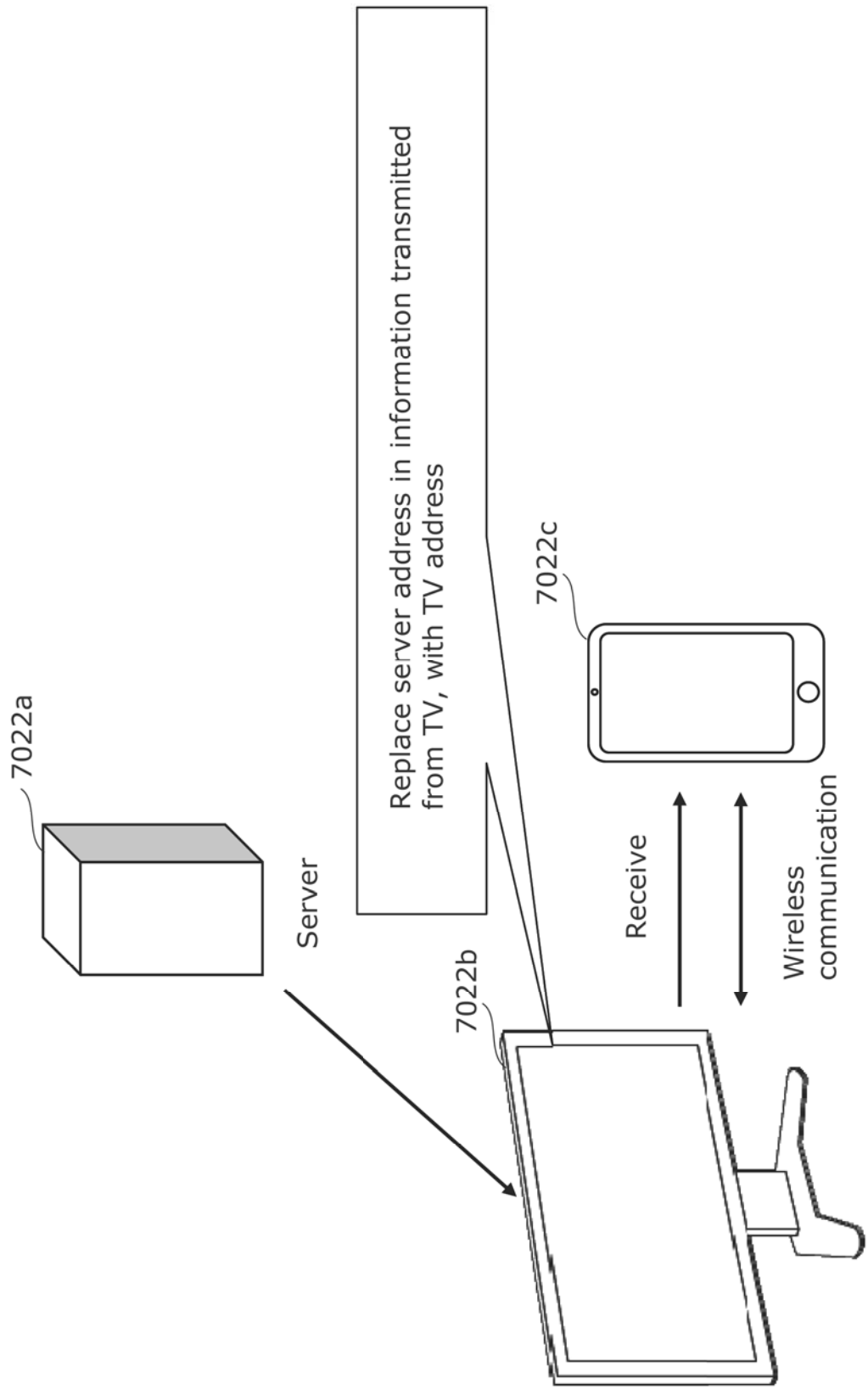
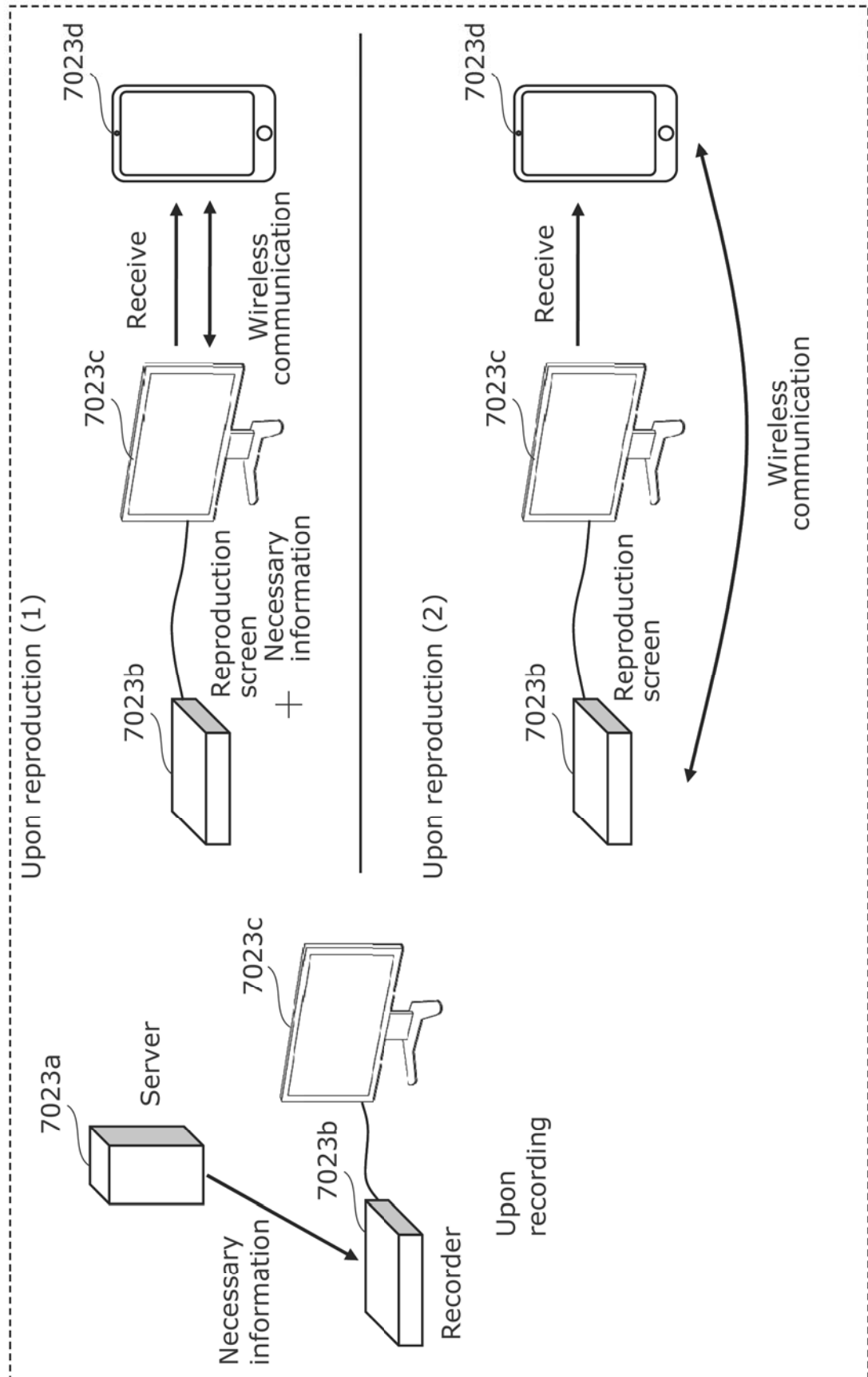




FIG. 243



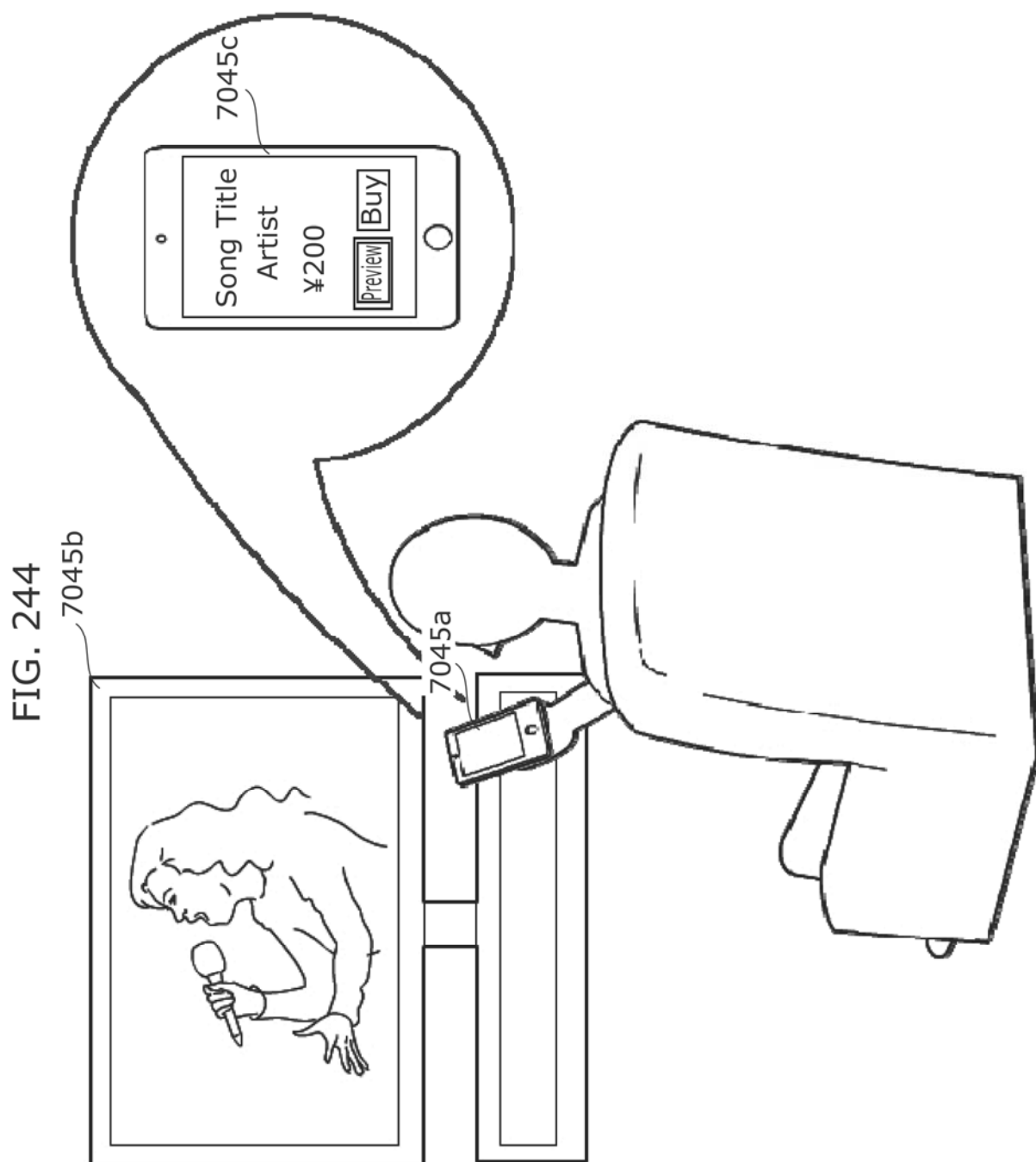


FIG. 245

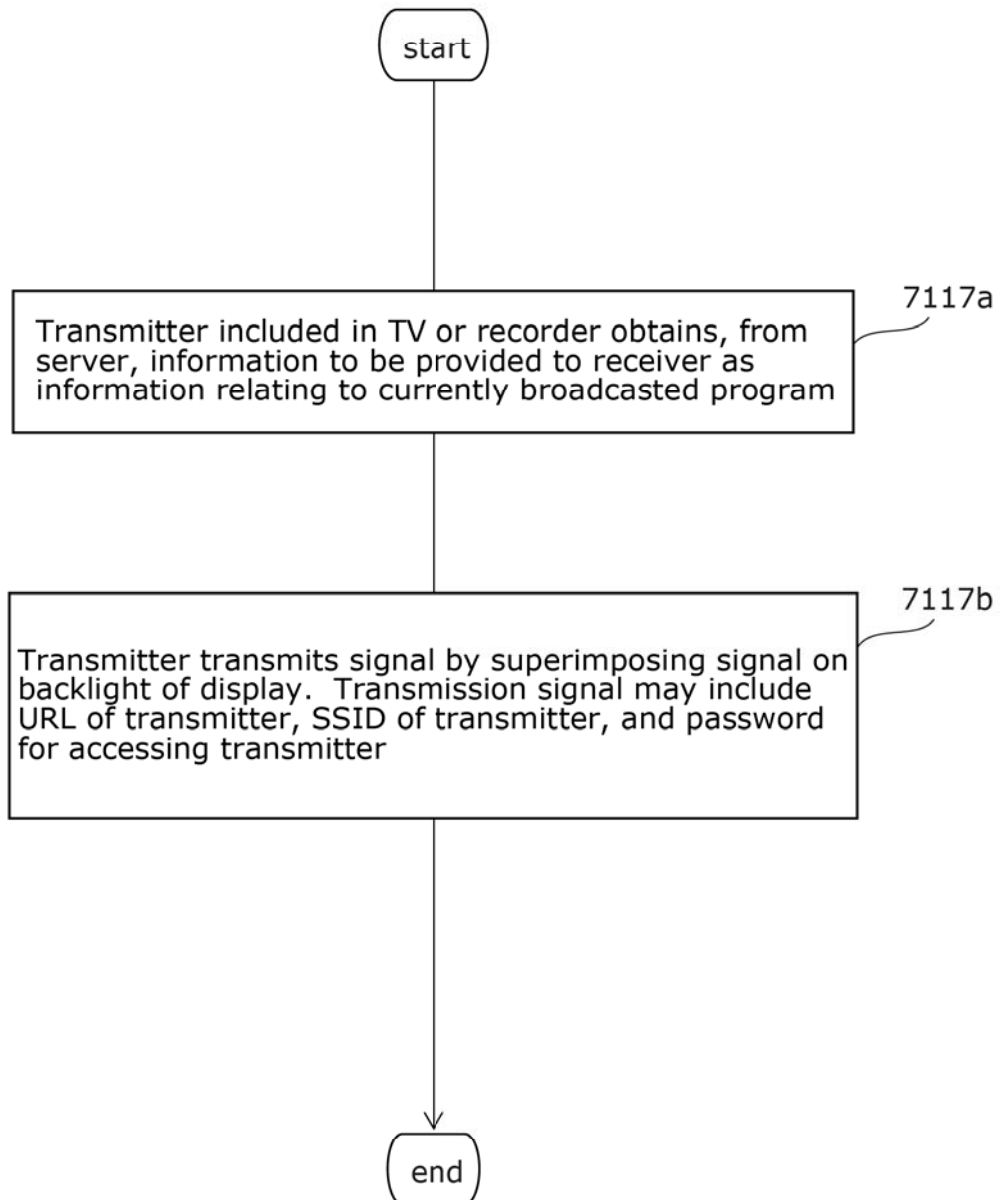


FIG. 246

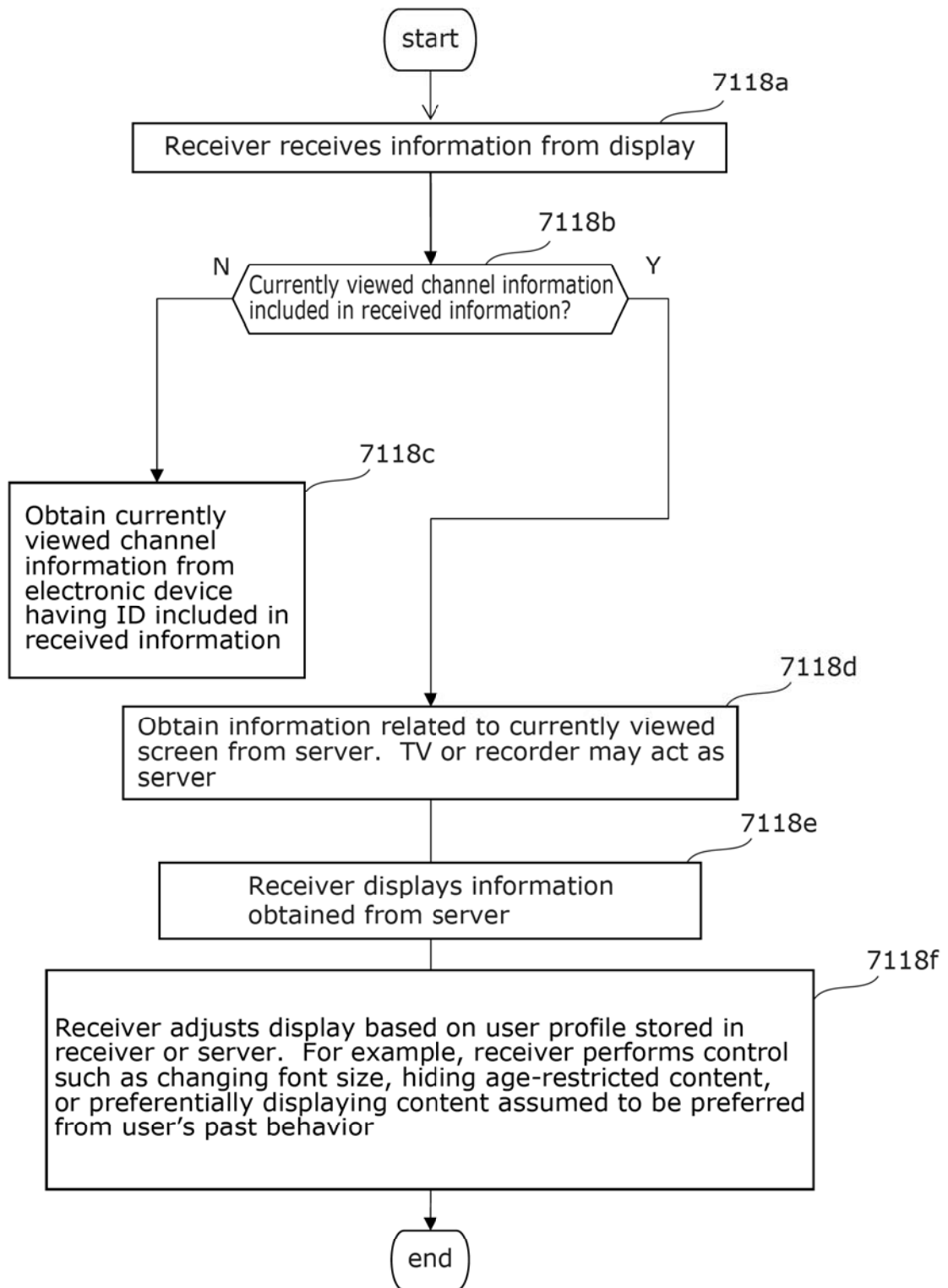


FIG. 247

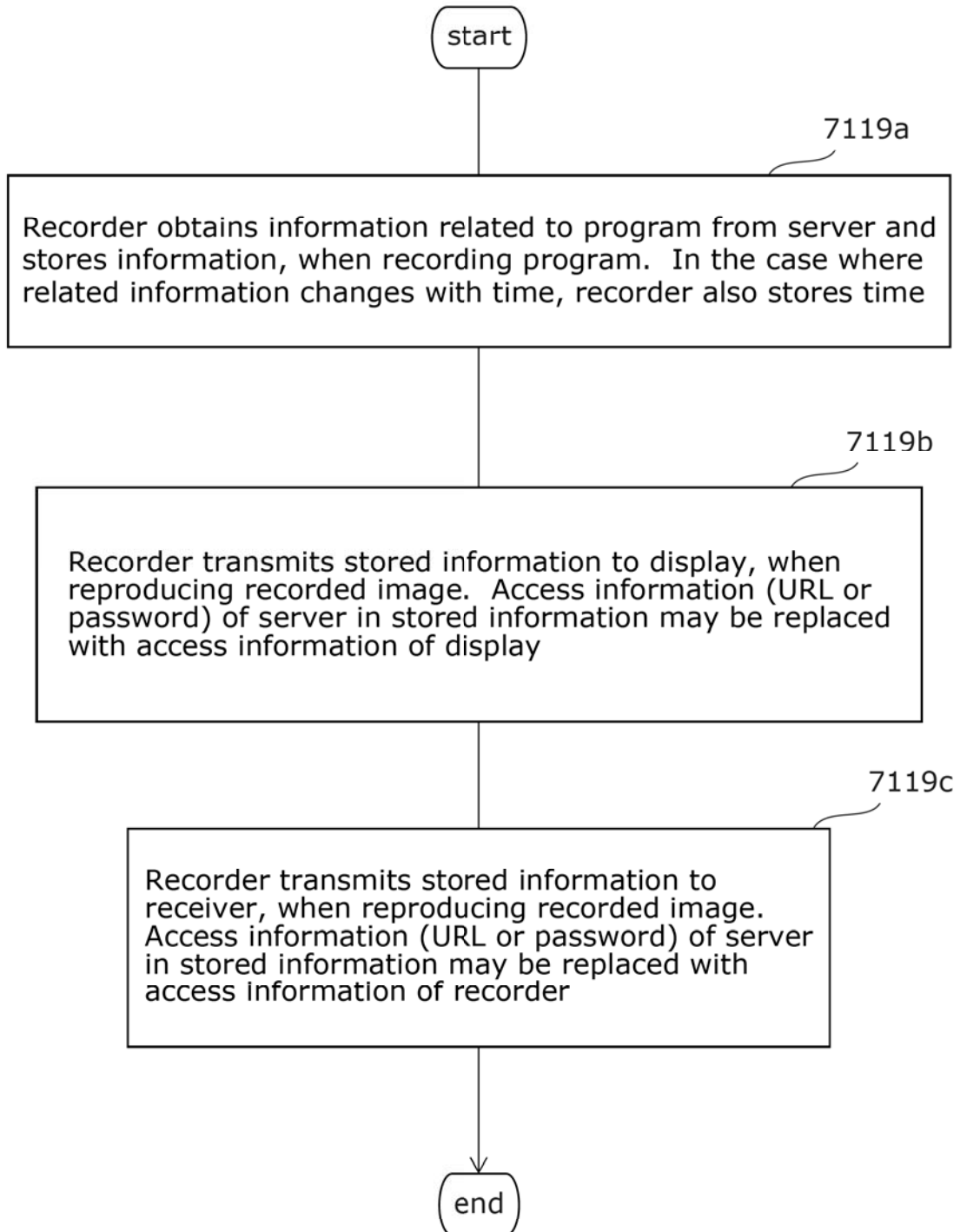


FIG. 248

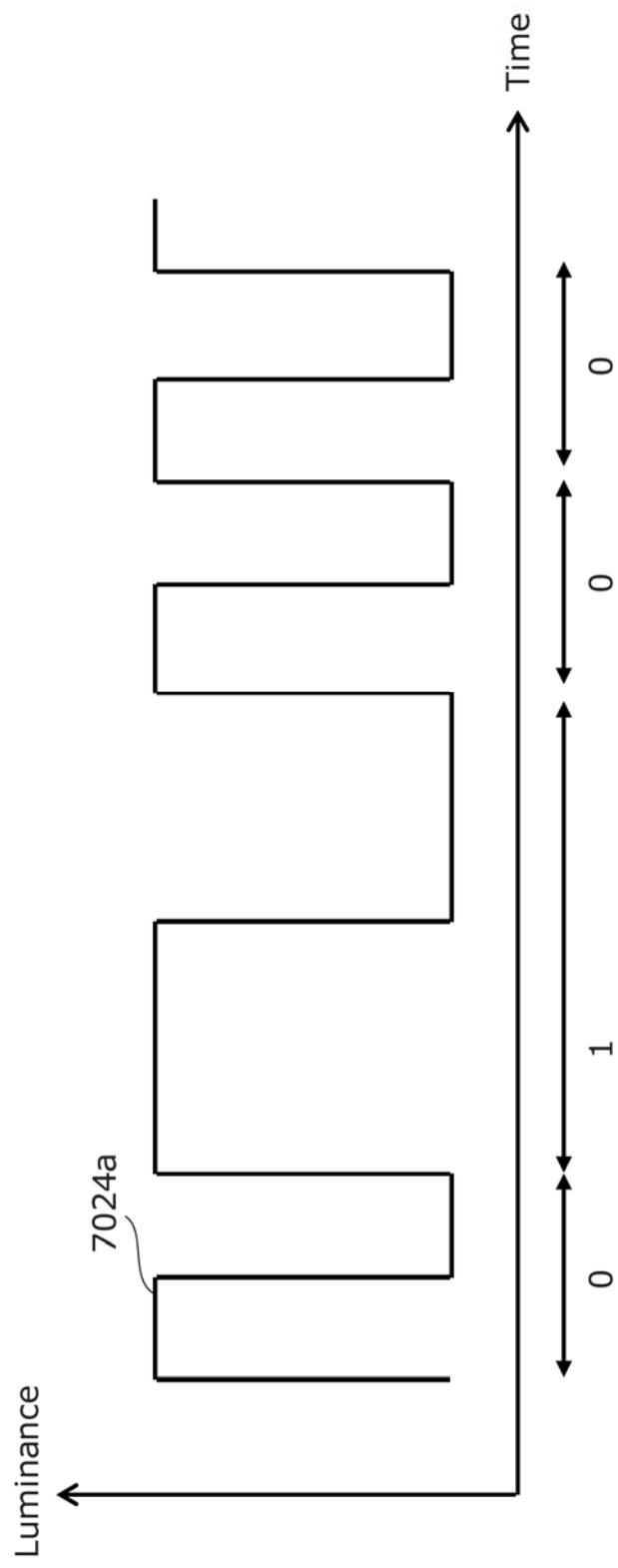


FIG. 249

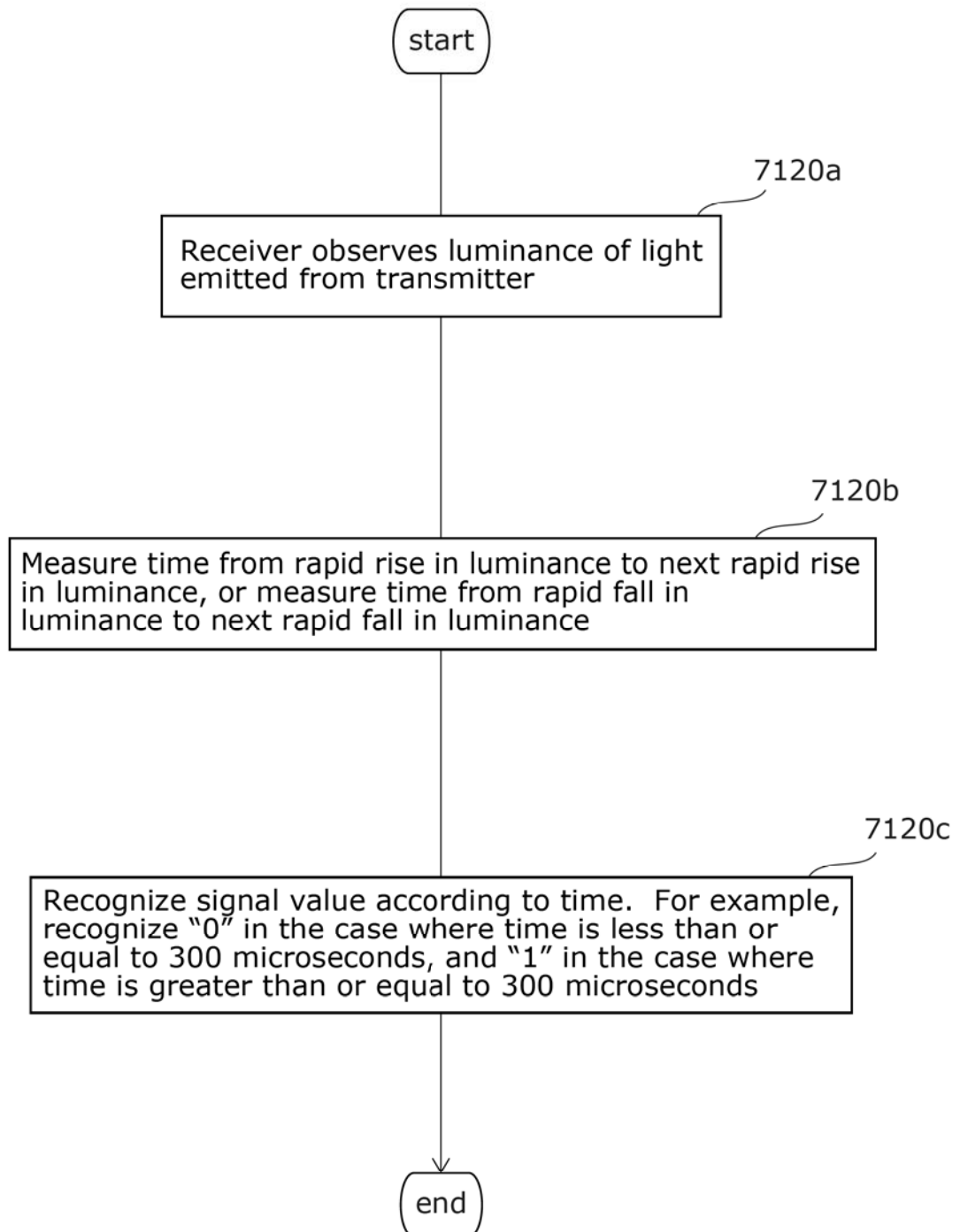


FIG. 250

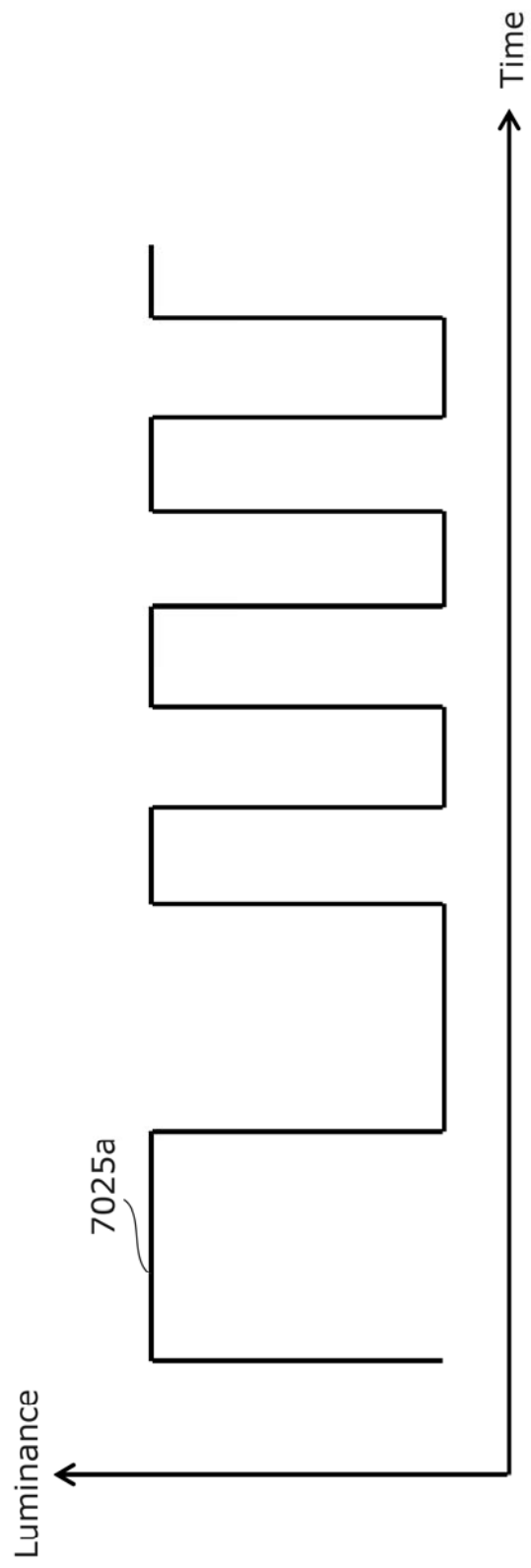




FIG. 251

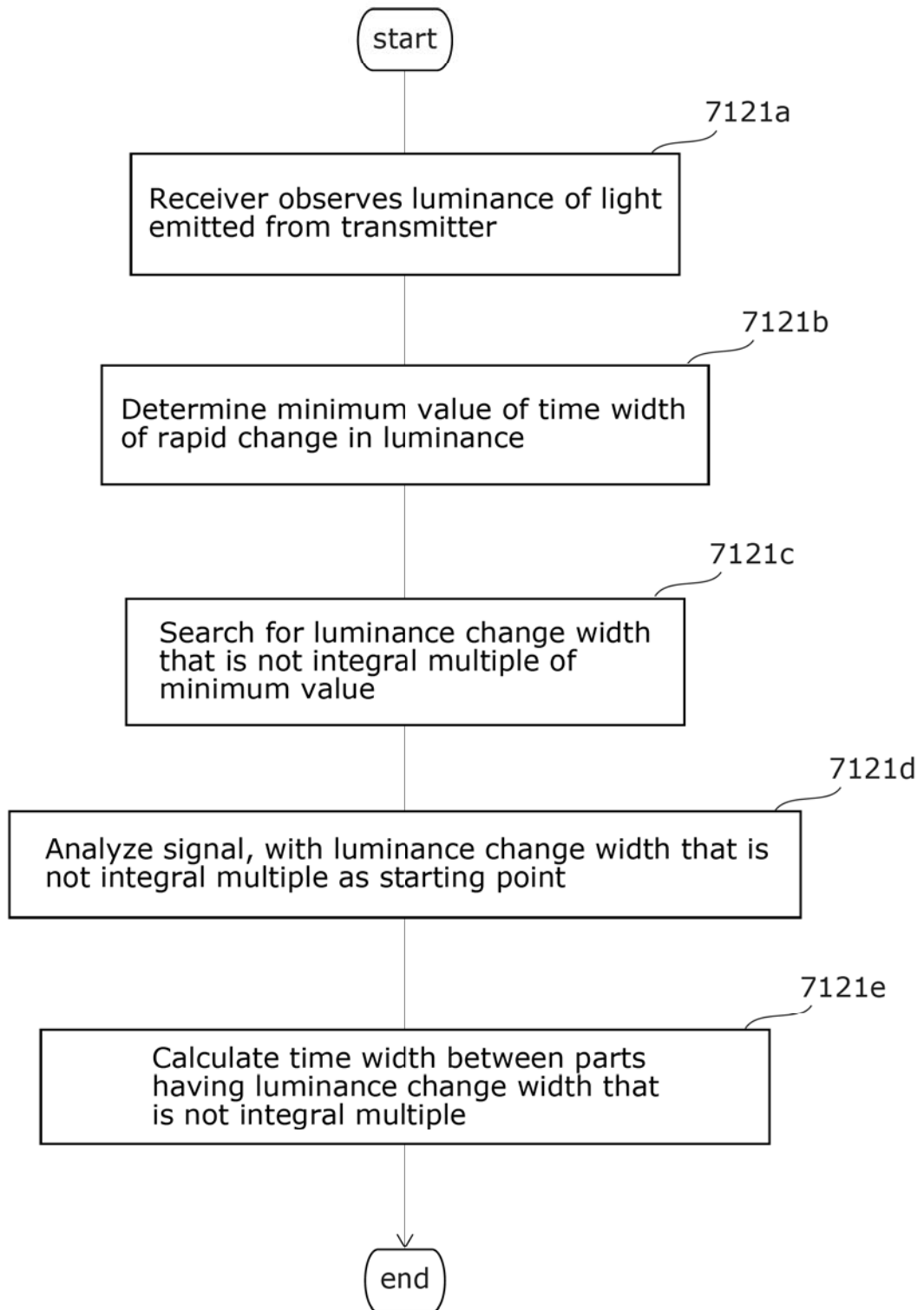


FIG. 252

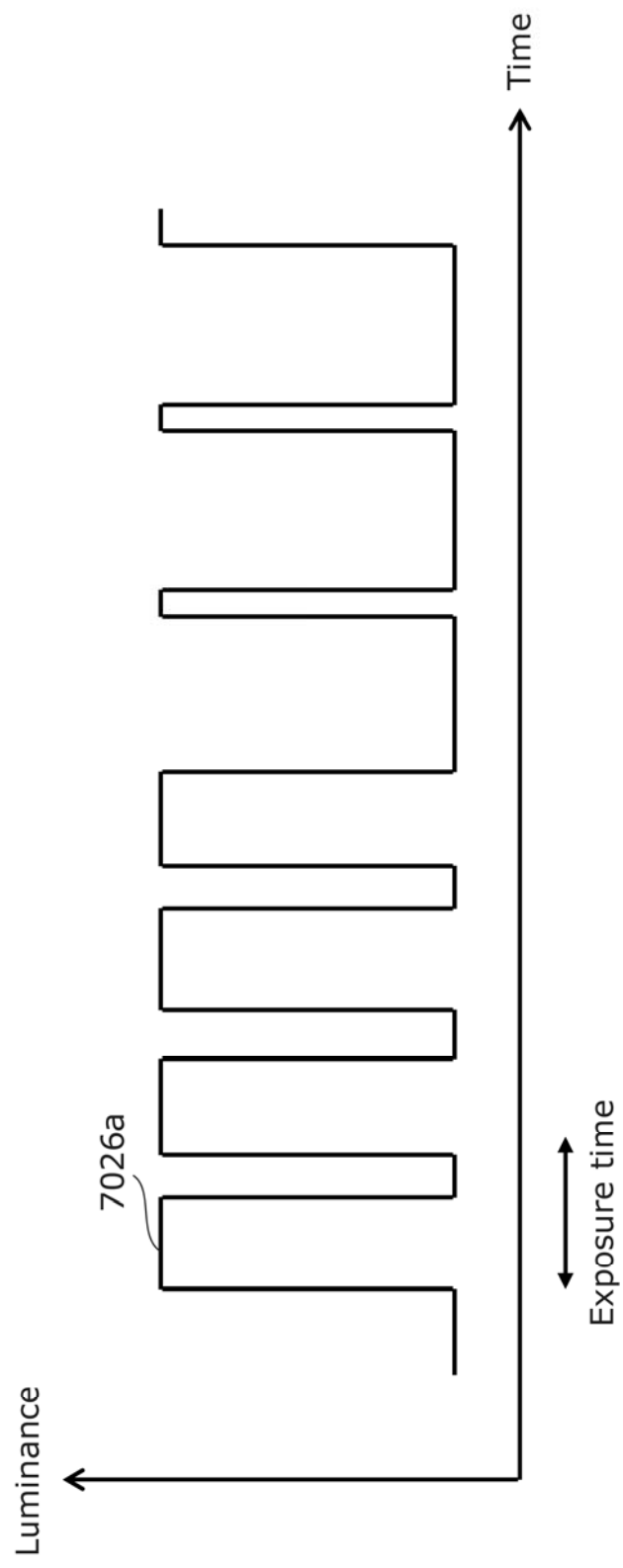


FIG. 253

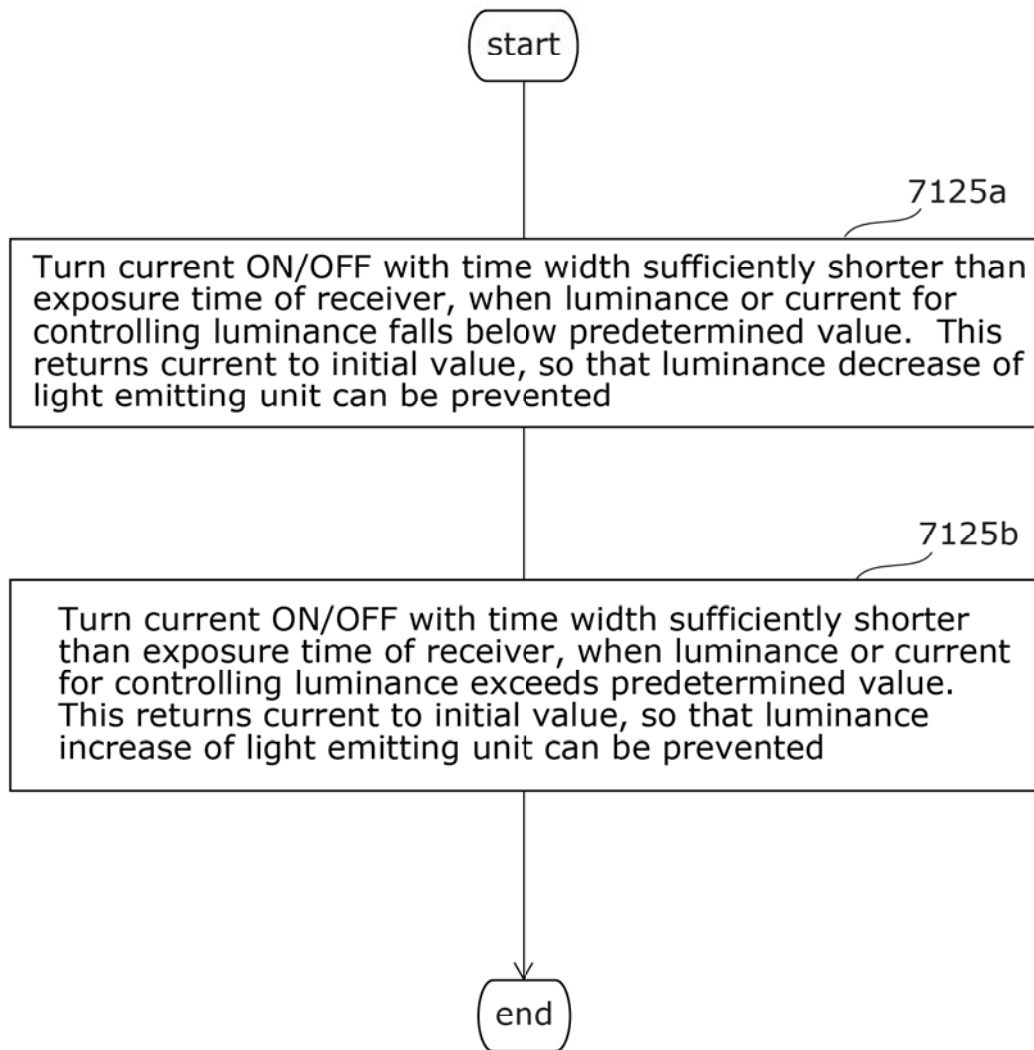


FIG. 254

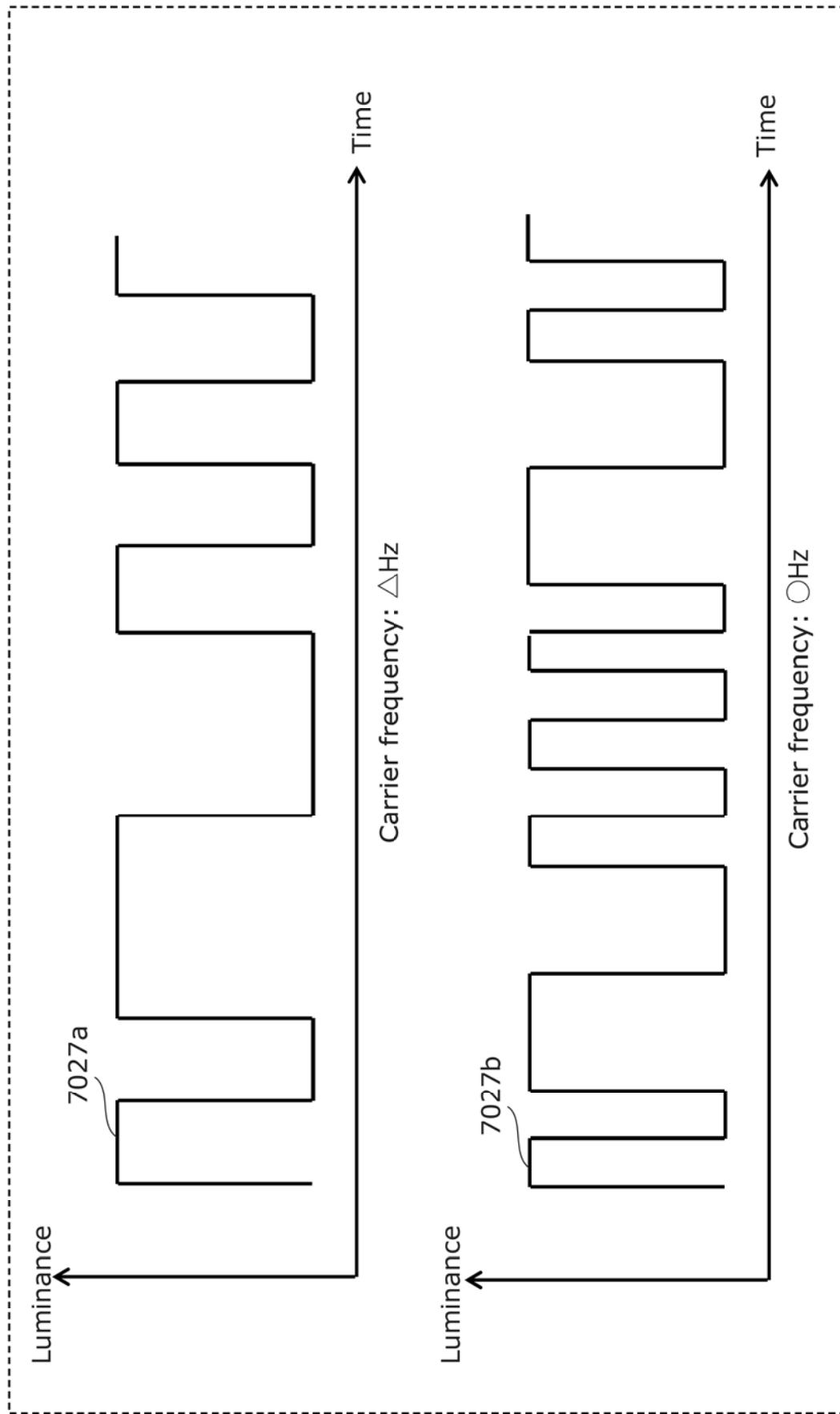


FIG. 255

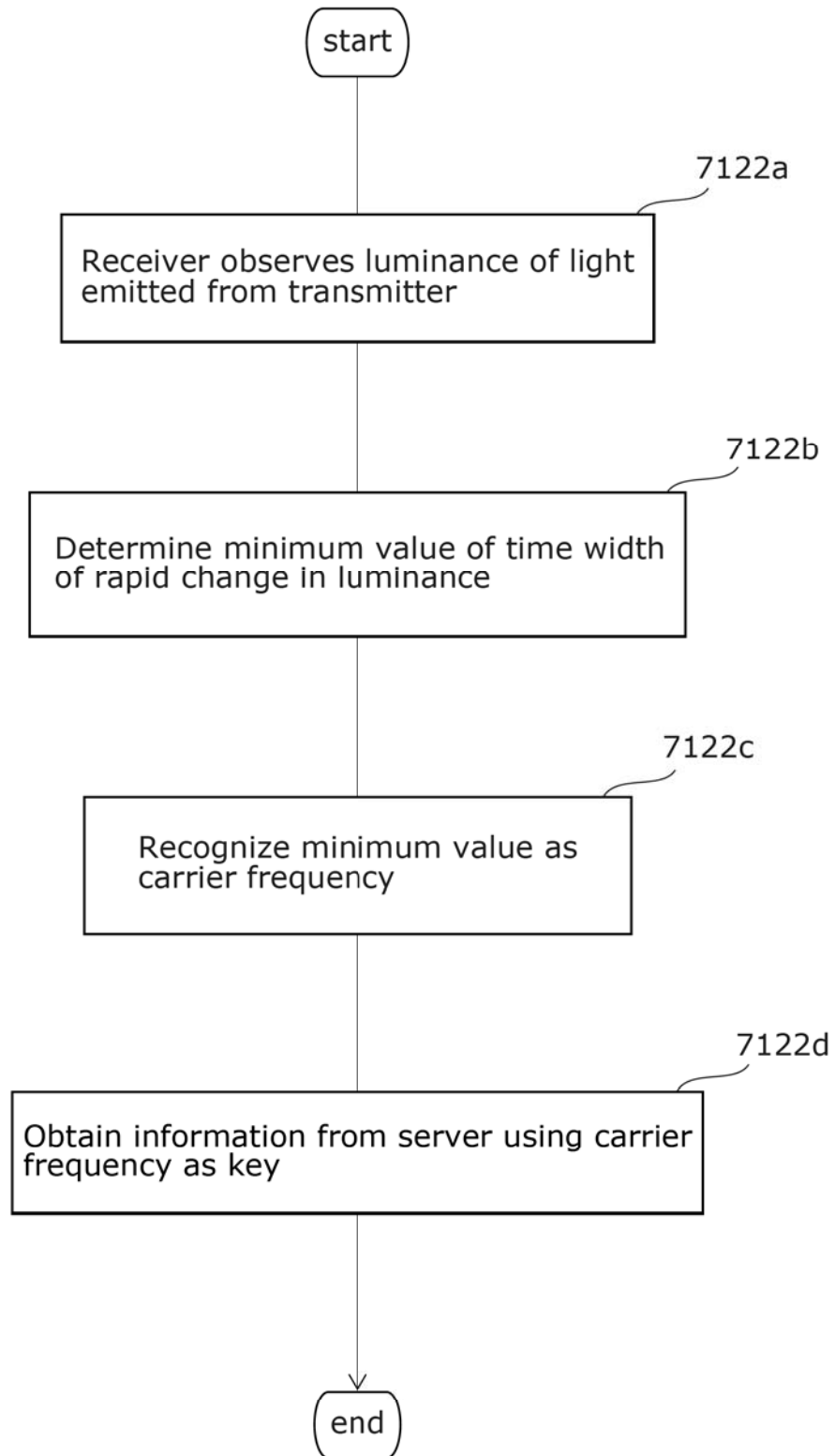


FIG. 256

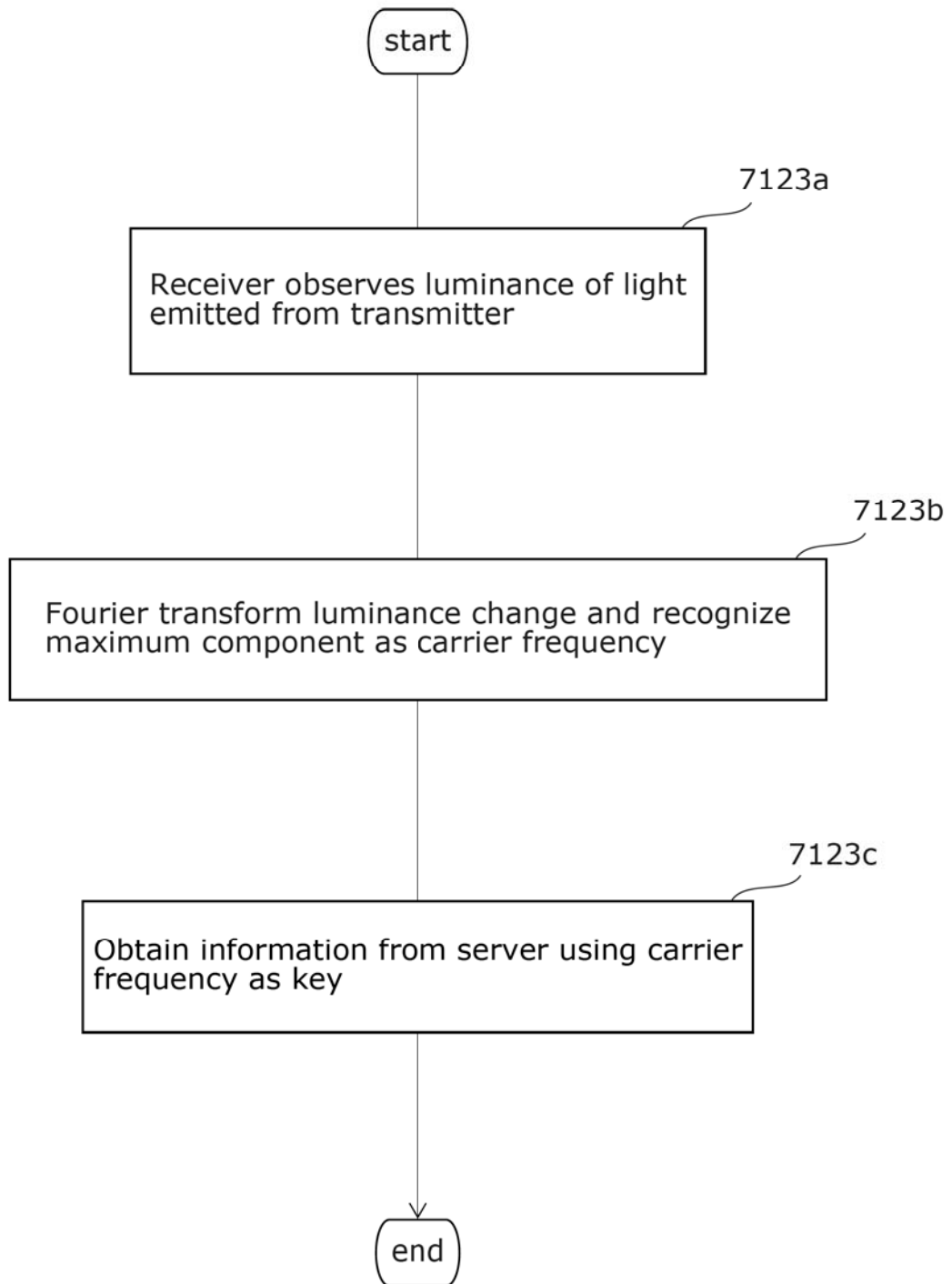


FIG. 257

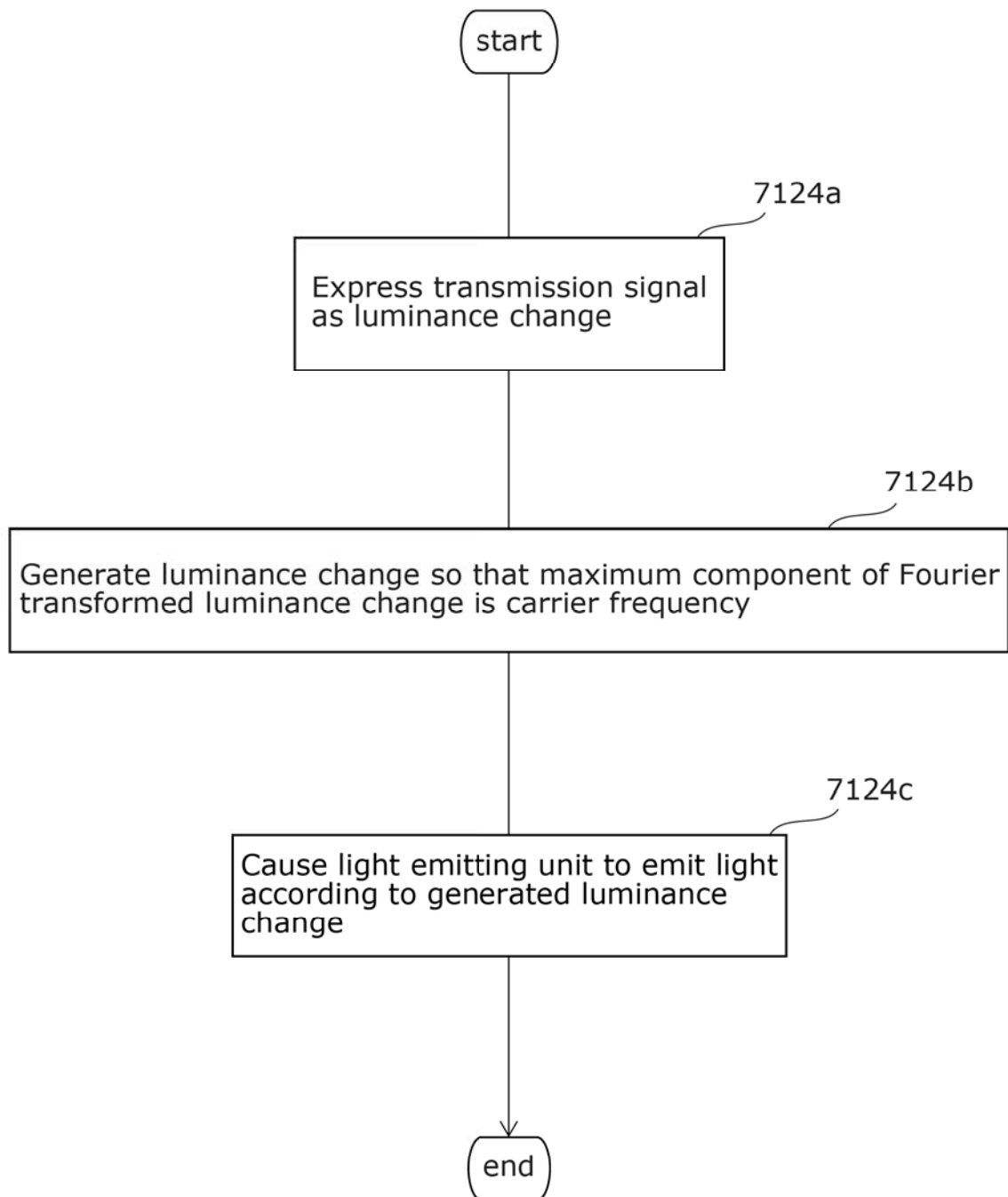


FIG. 258

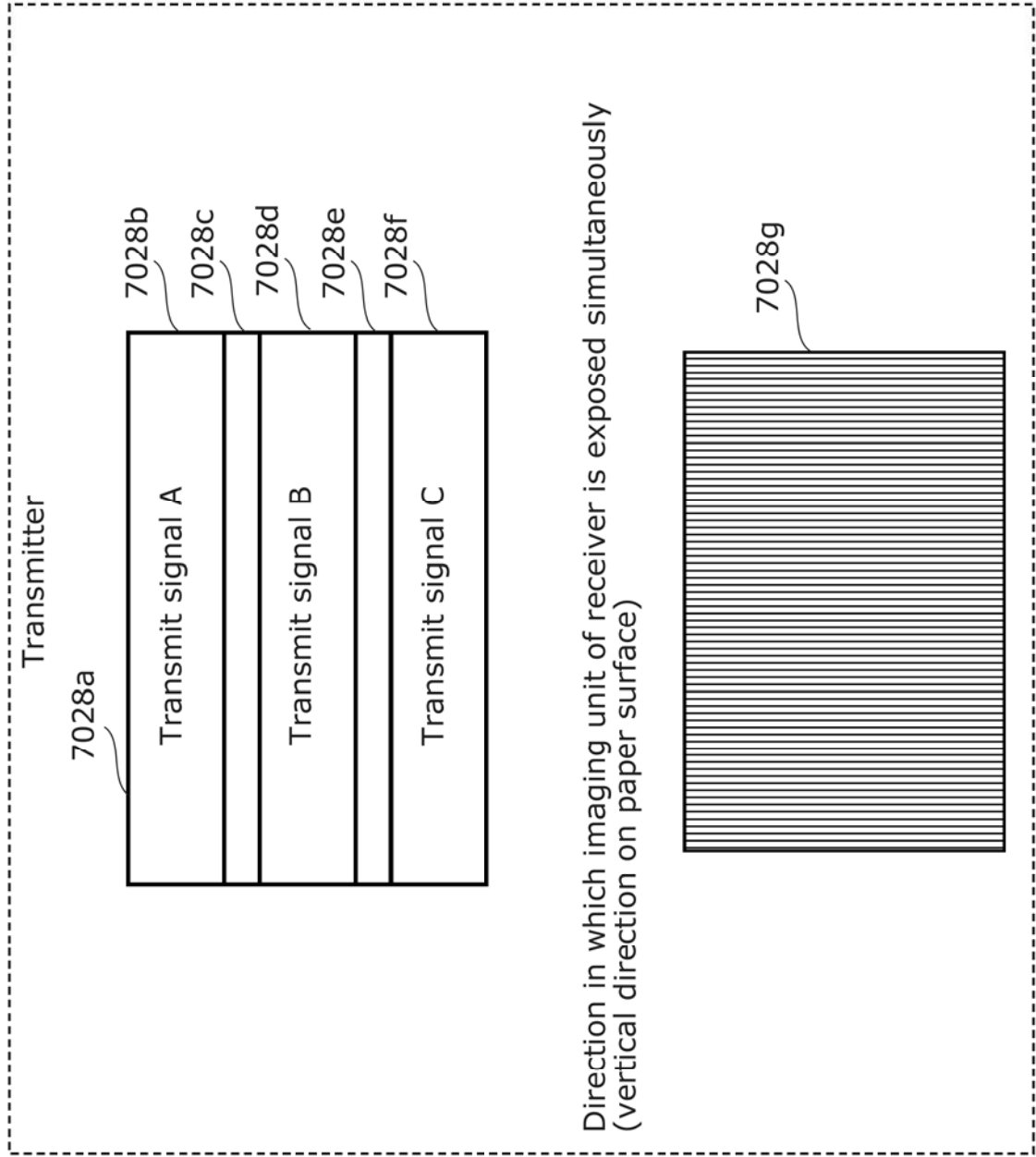




FIG. 259

Transmitter

|   |   |   |
|---|---|---|
| A | C | B |
| B | A | C |
| C | B | A |

7029a

FIG. 260

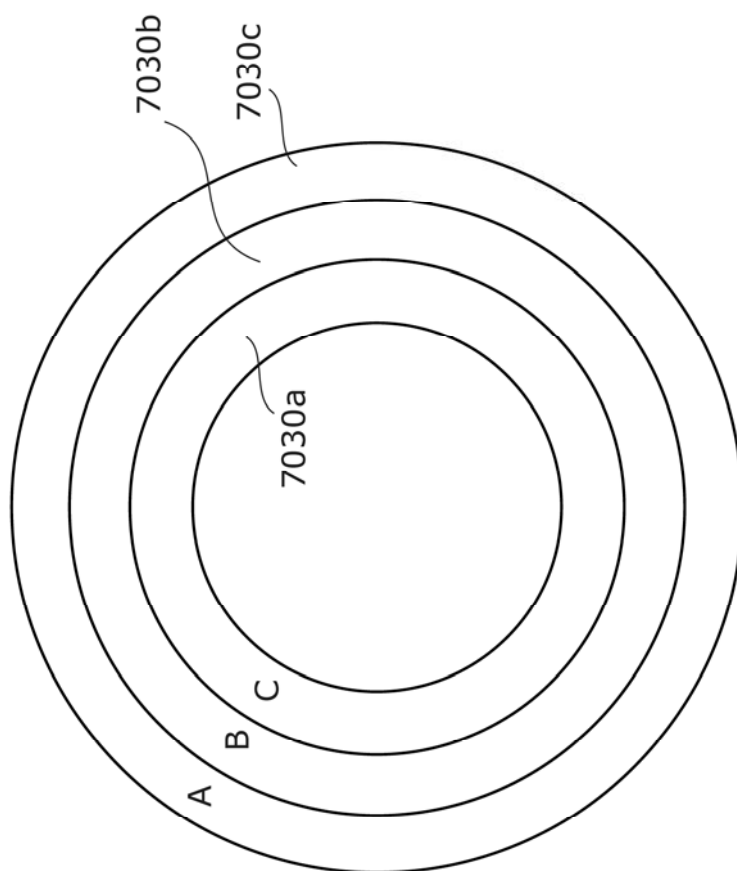


FIG. 261

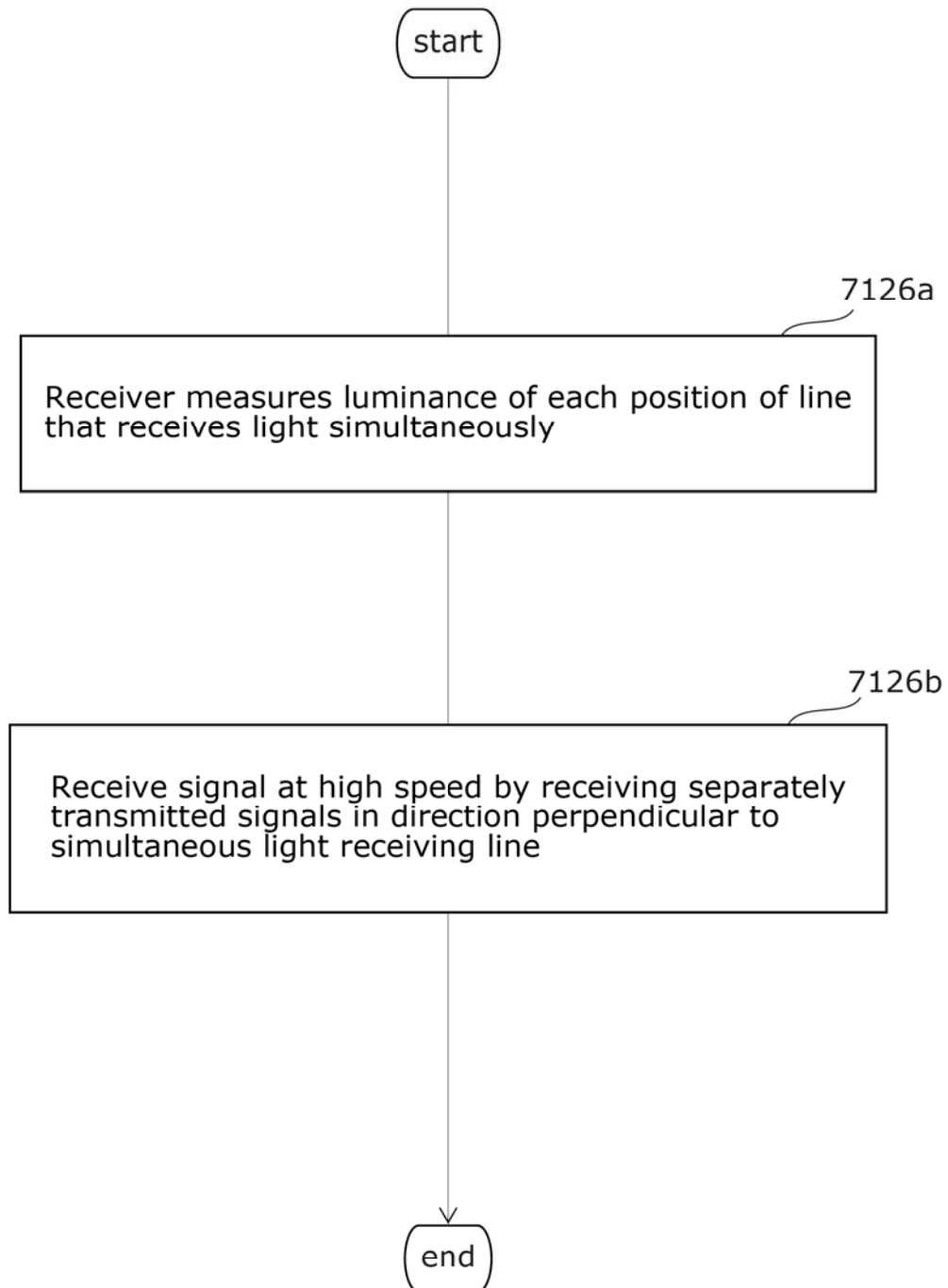


FIG. 262

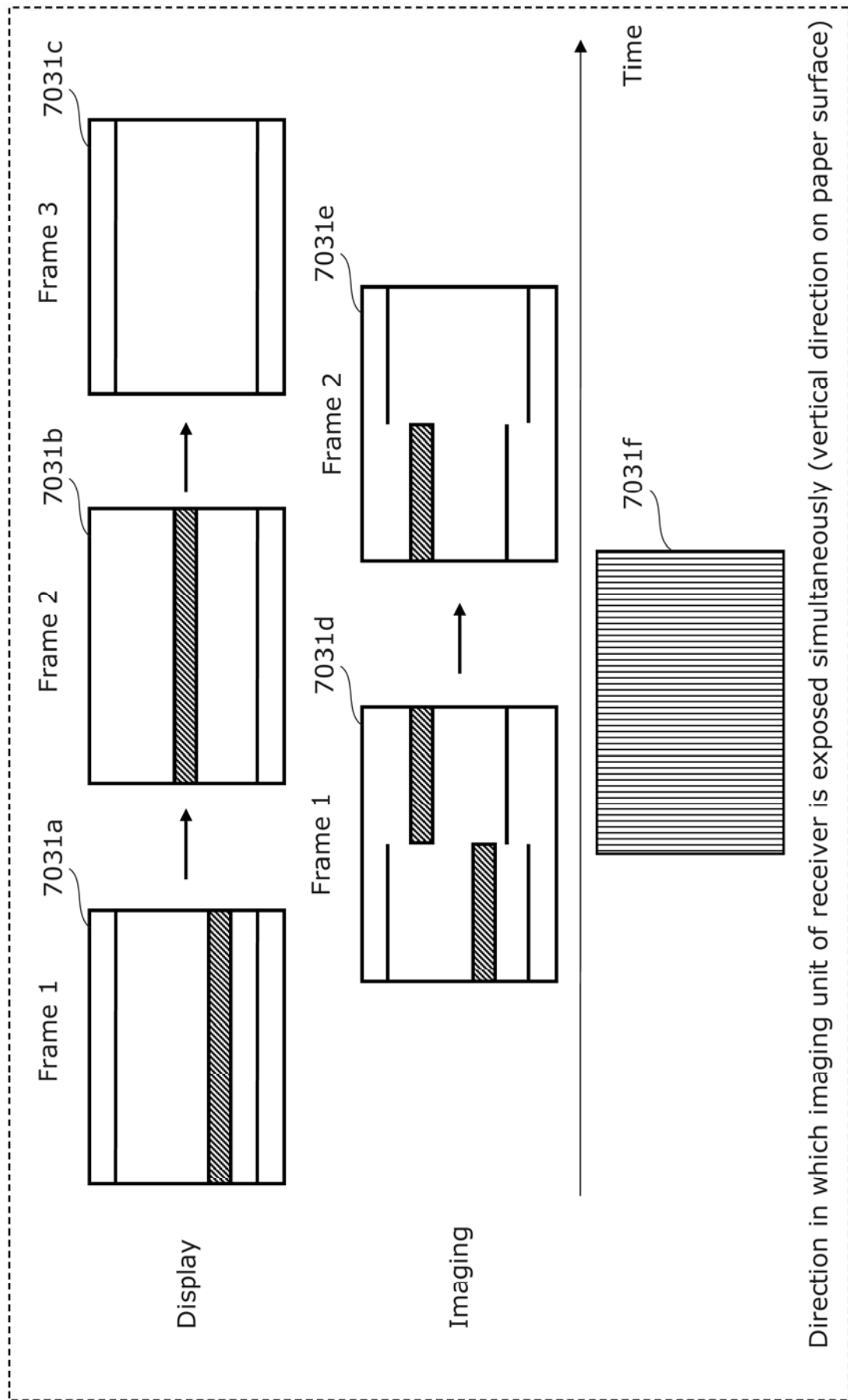


FIG. 263

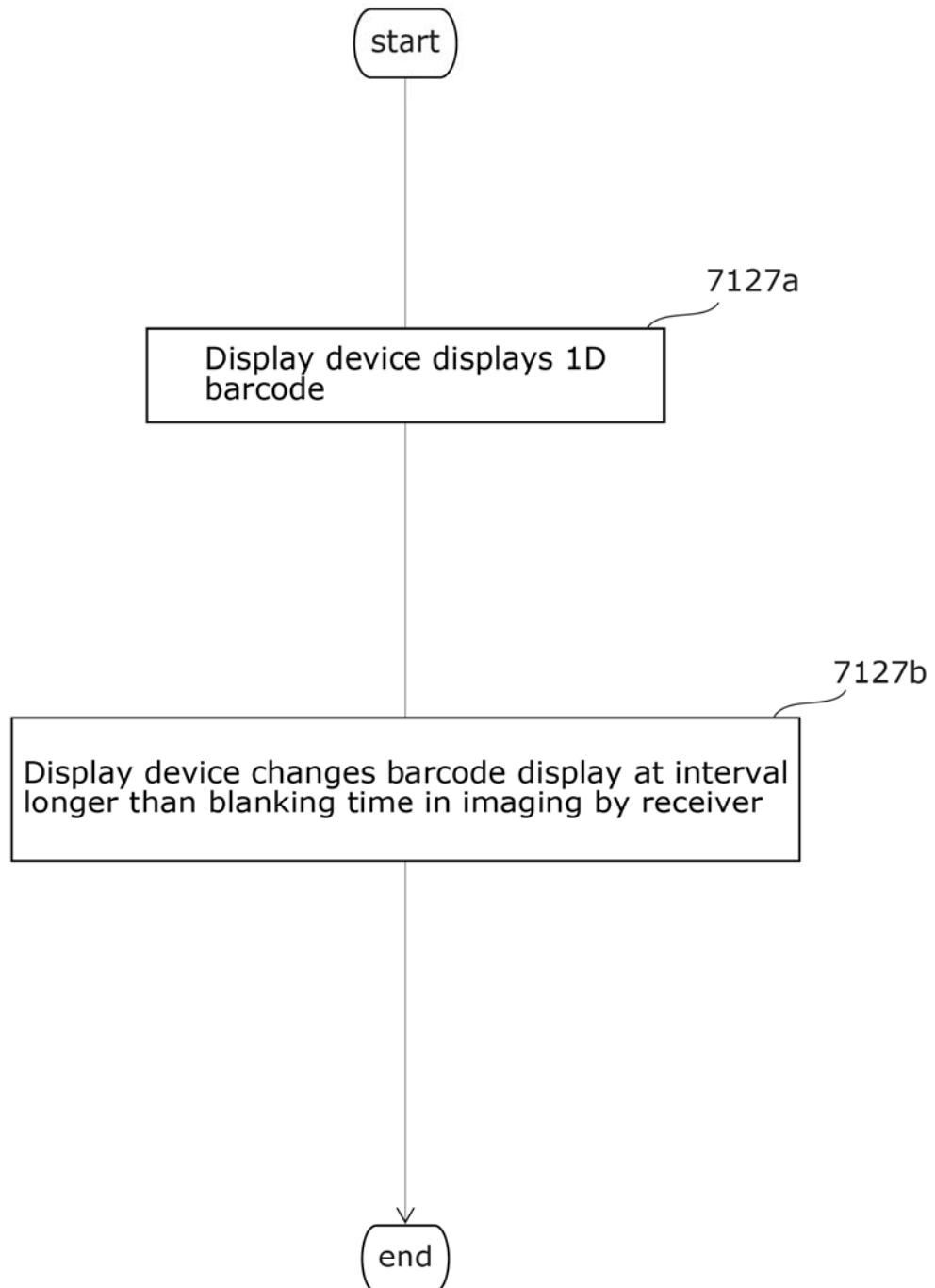


FIG. 264

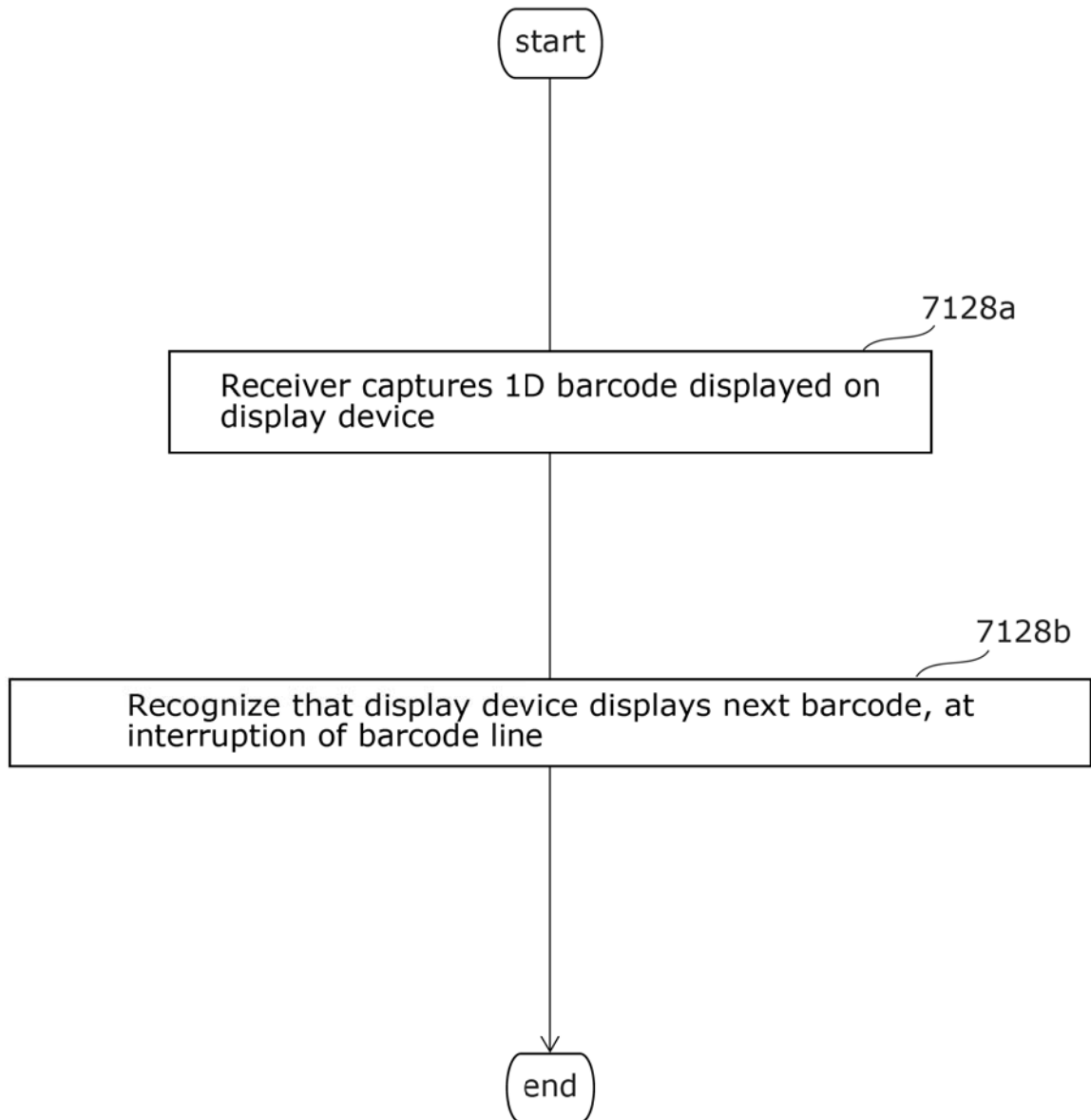


FIG. 265

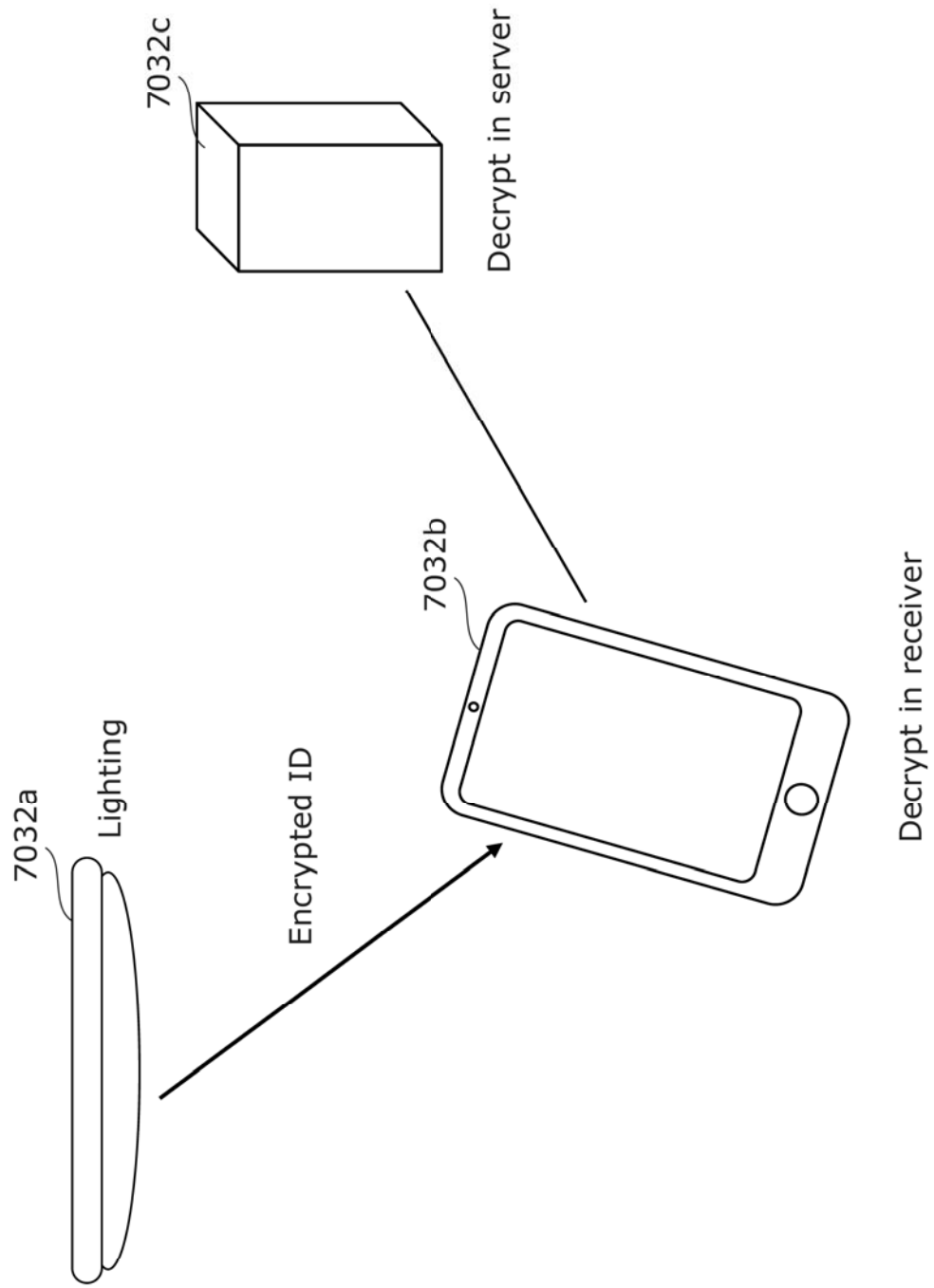


FIG. 266

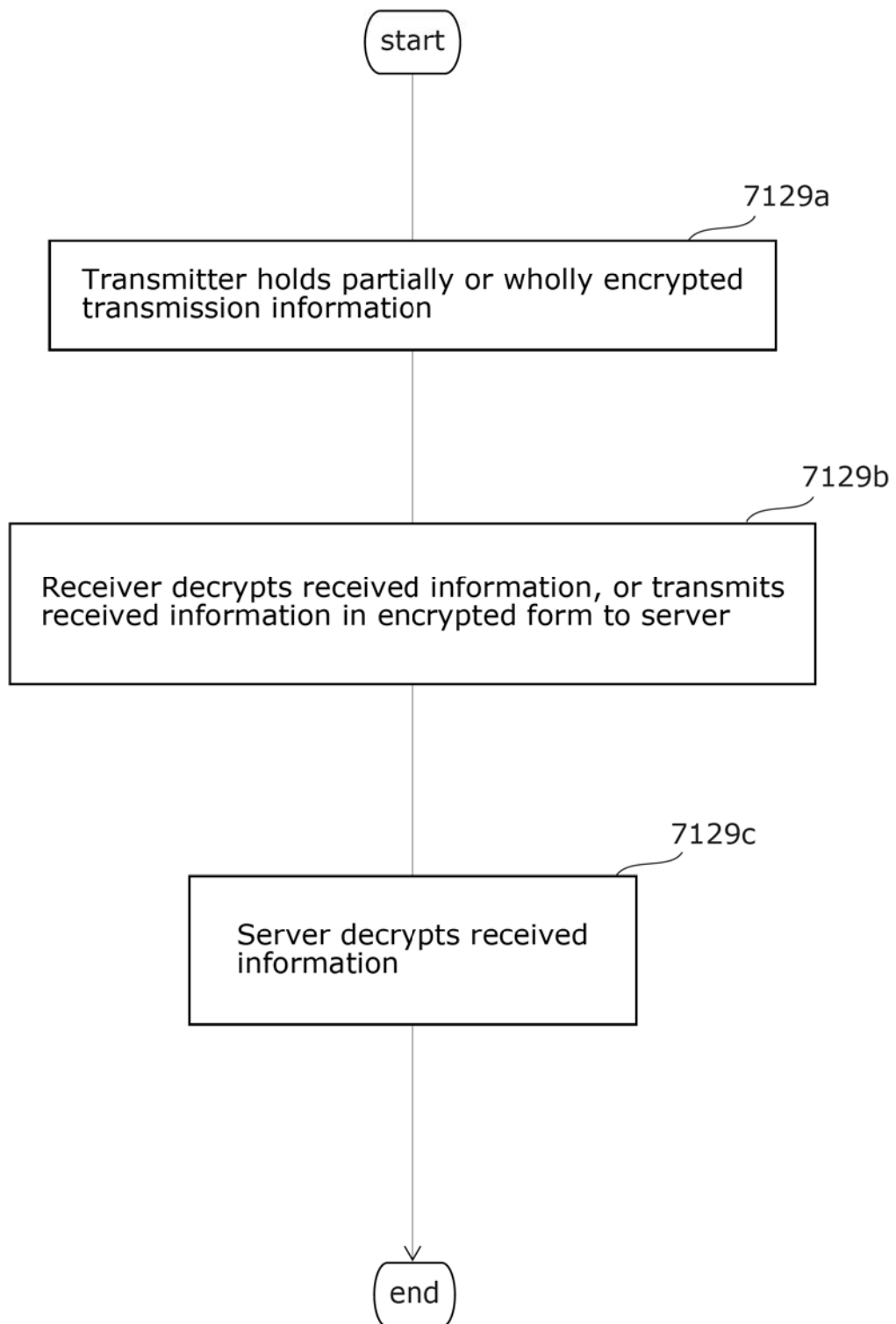
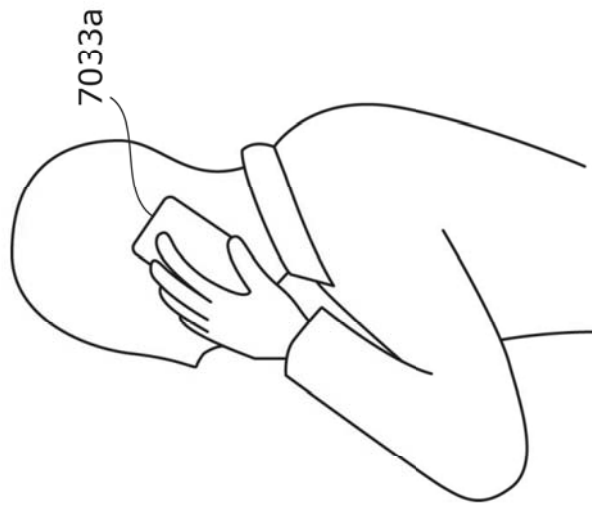




FIG. 267



Stop reception in the case where value of  
illuminance sensor is low and receiver is estimated  
to be in call state

FIG. 268

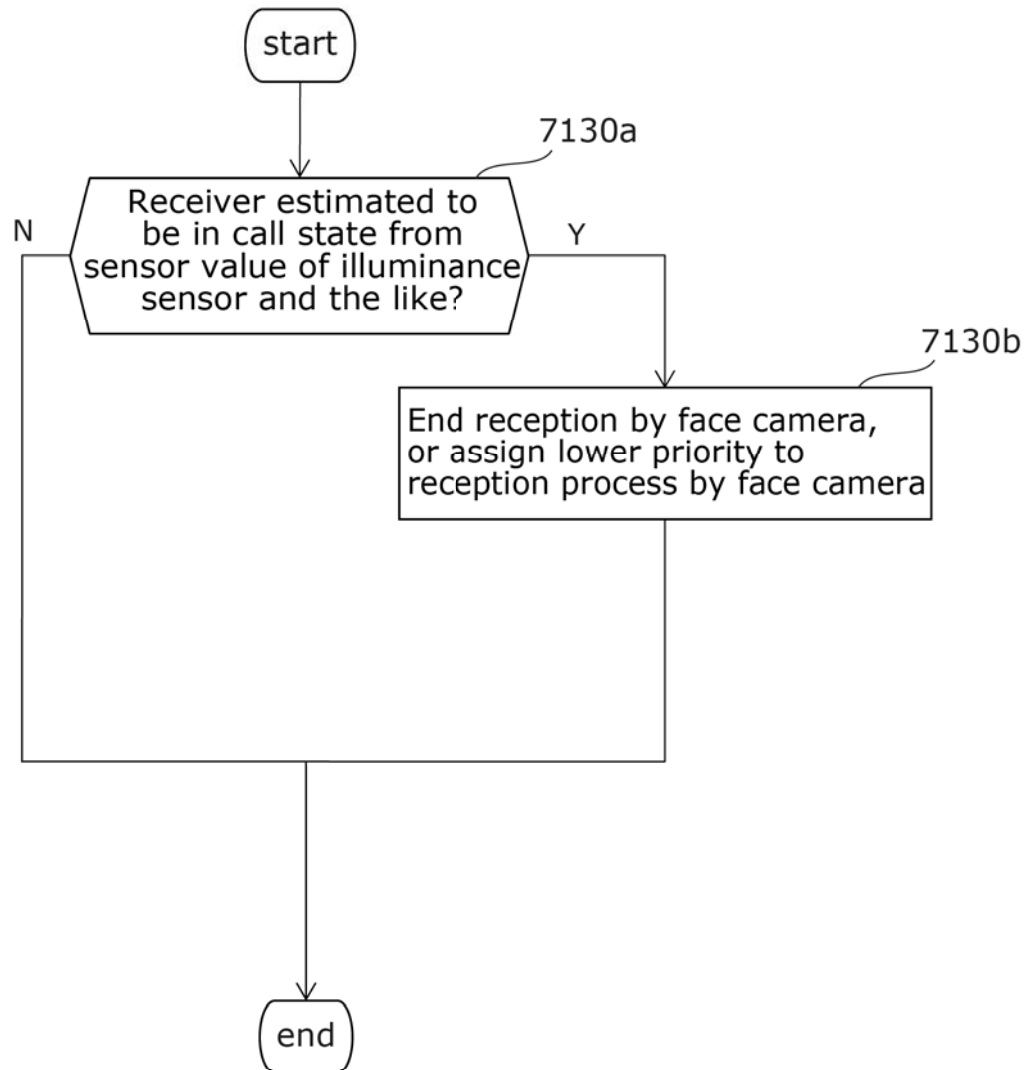
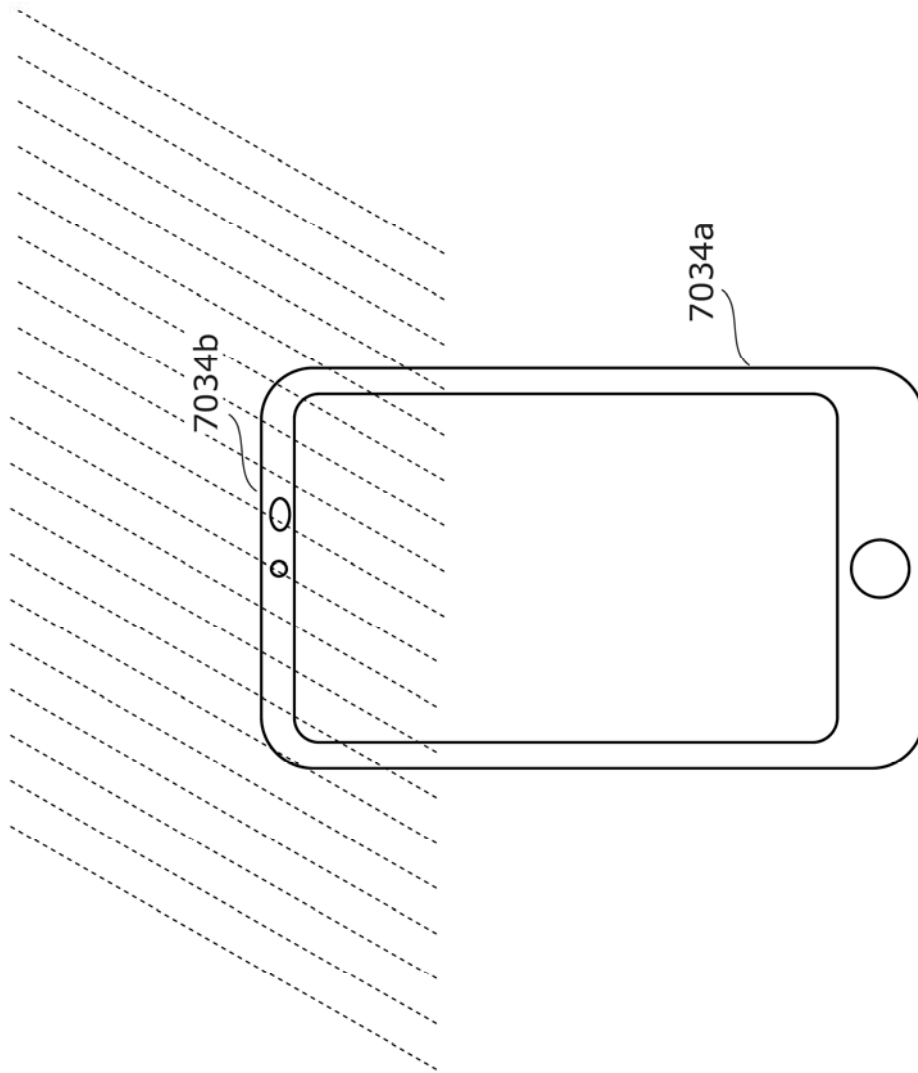


FIG. 269



Stop reception process by imaging device on illuminance sensor side or assign lower priority to reception process, in the case where measurement value of illuminance sensor is less than or equal to predetermined value

FIG. 270

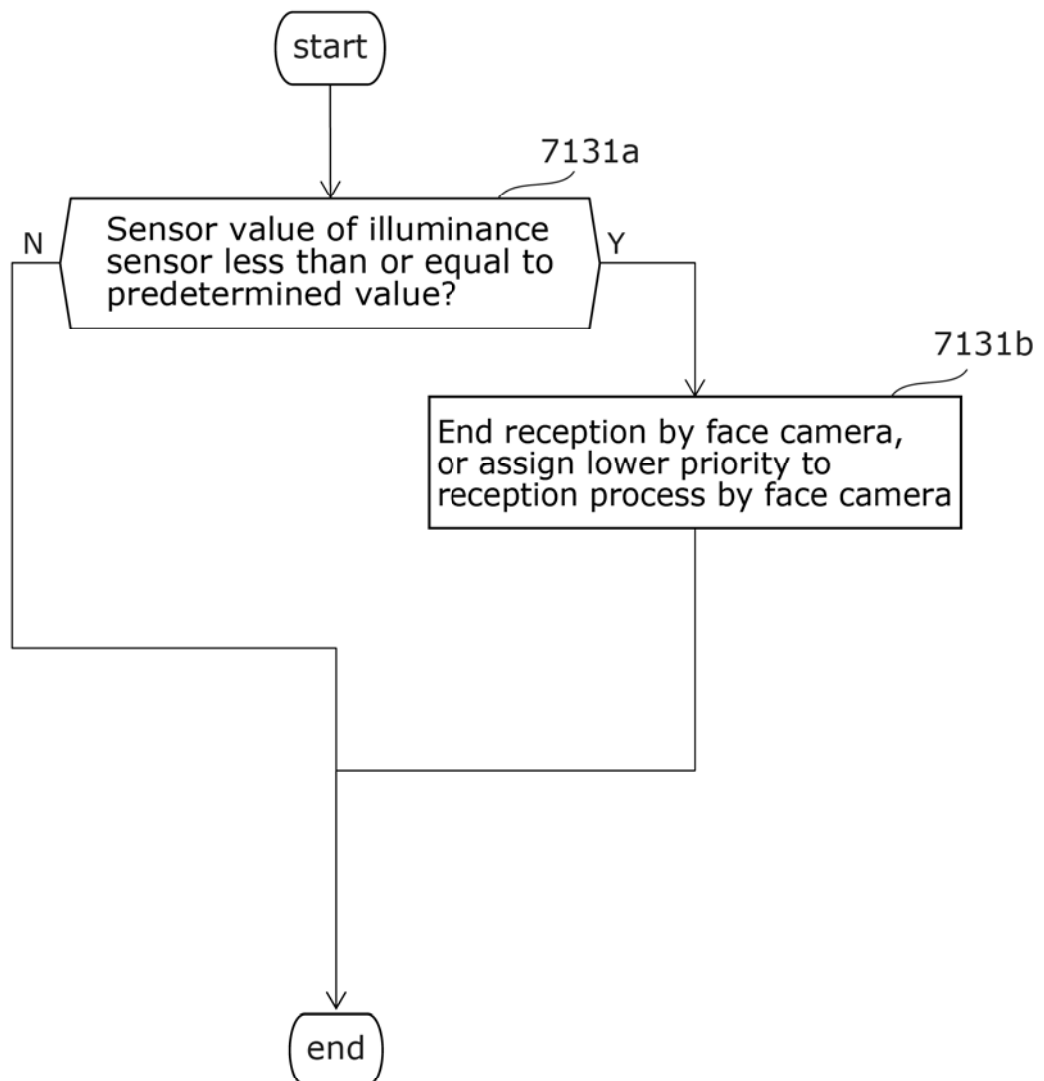


FIG. 271

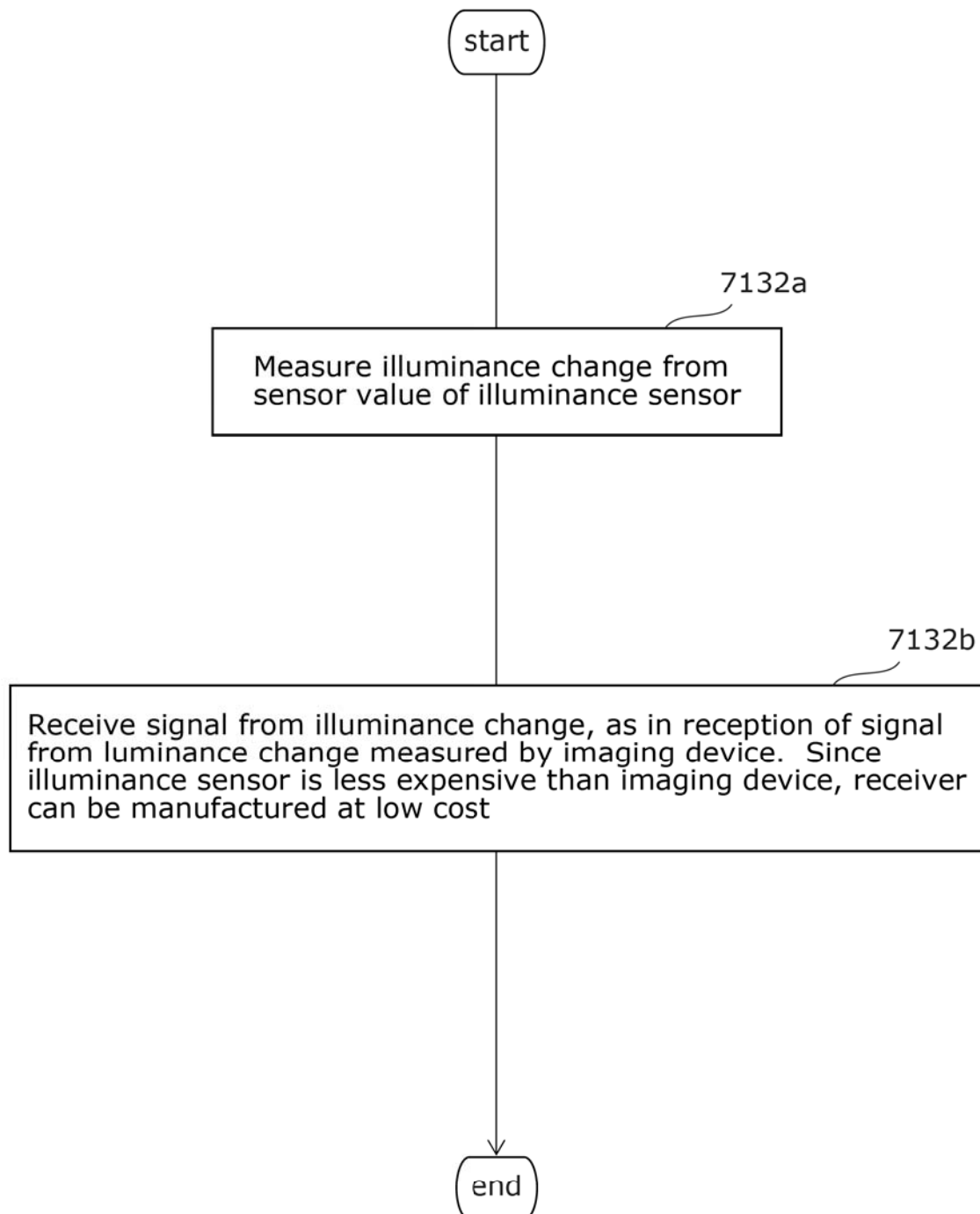


FIG. 272

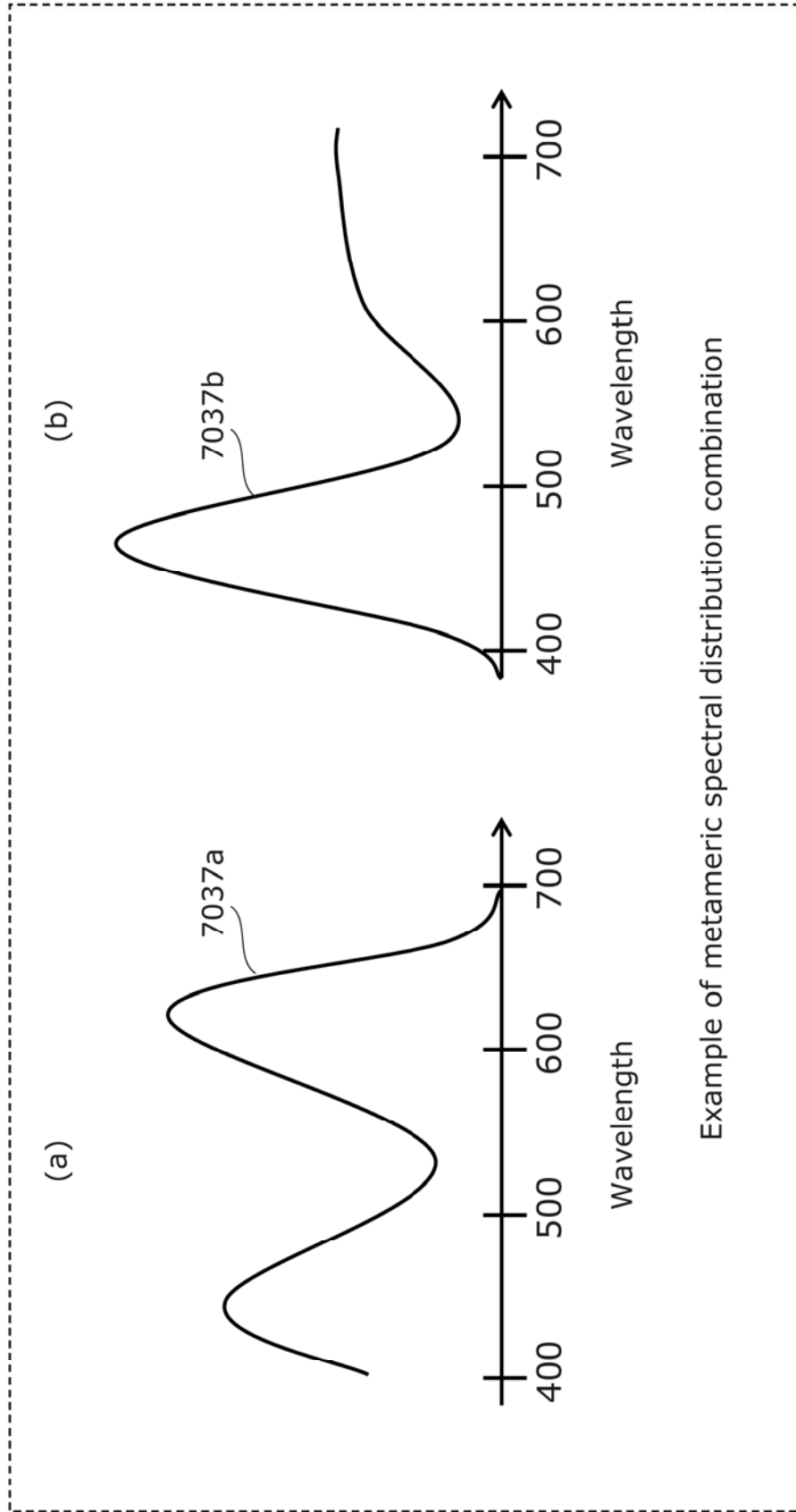


FIG. 273

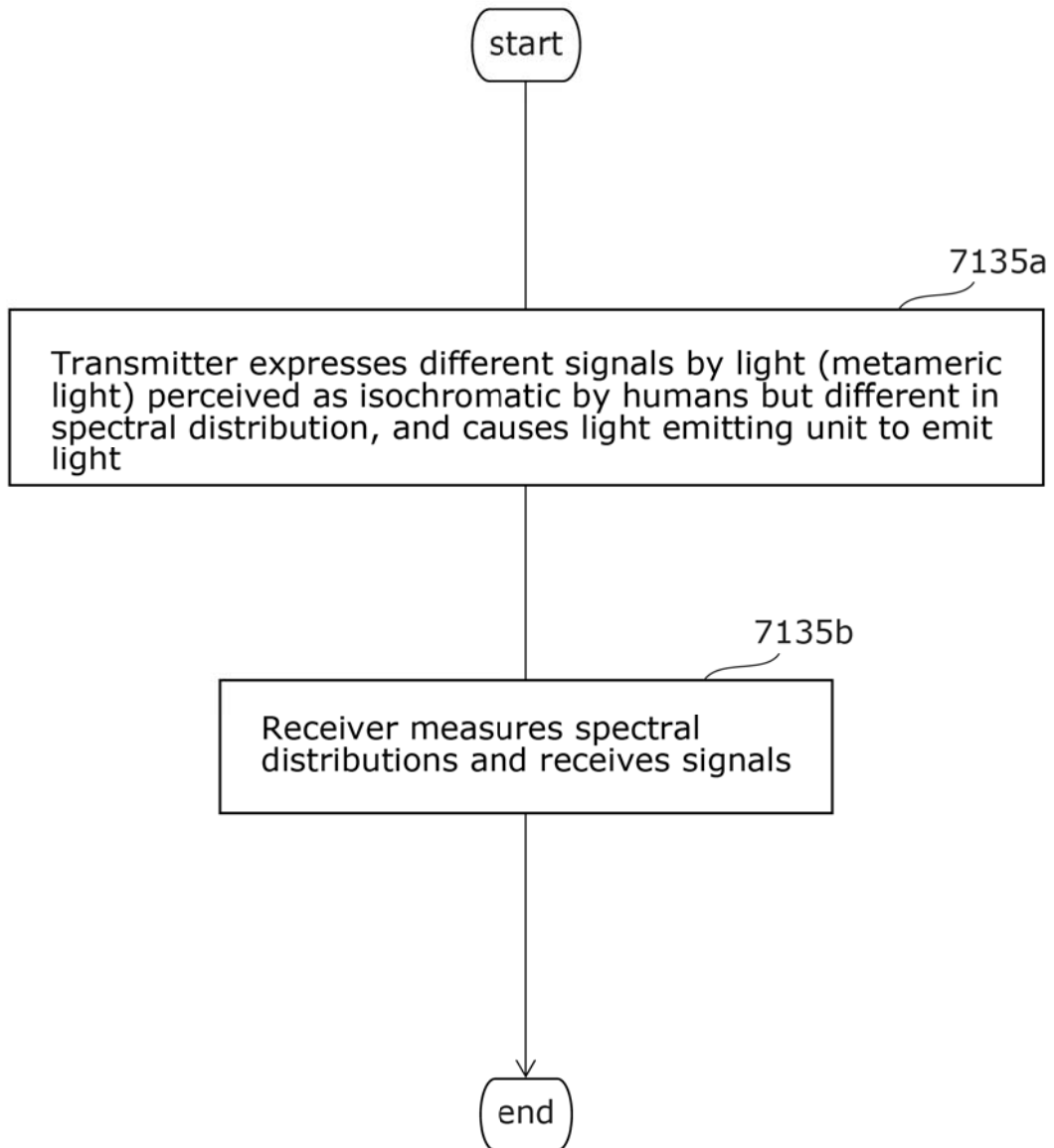


FIG. 274

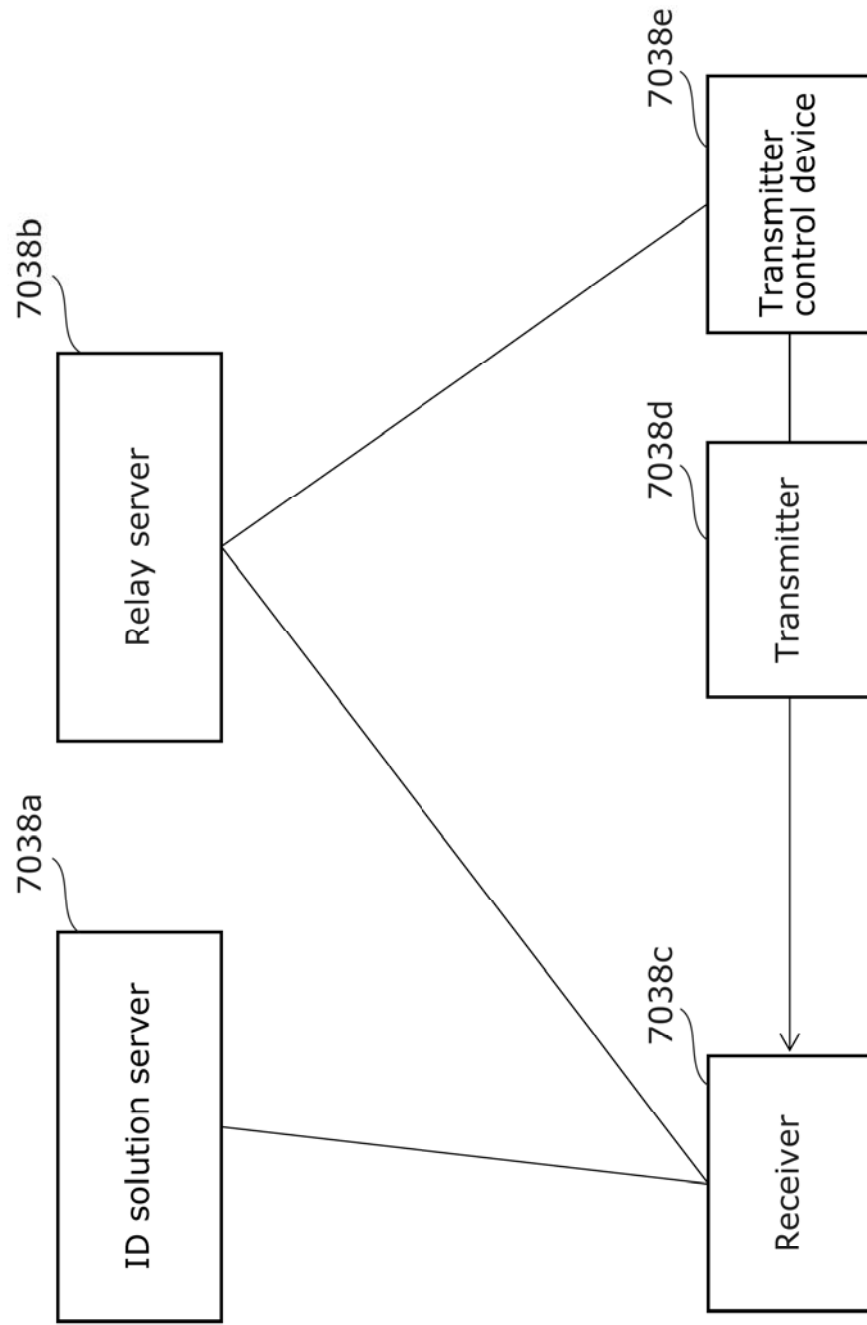




FIG. 275

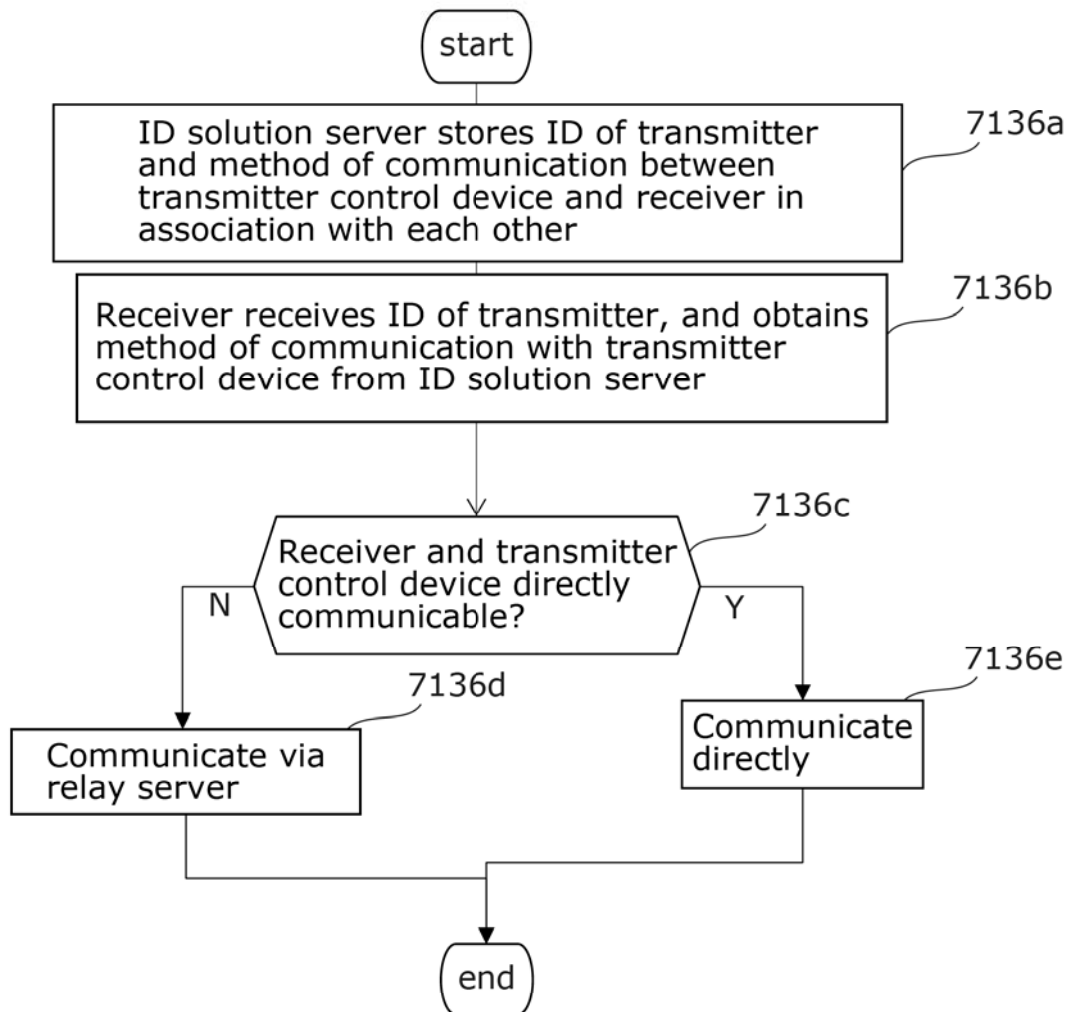


FIG. 276

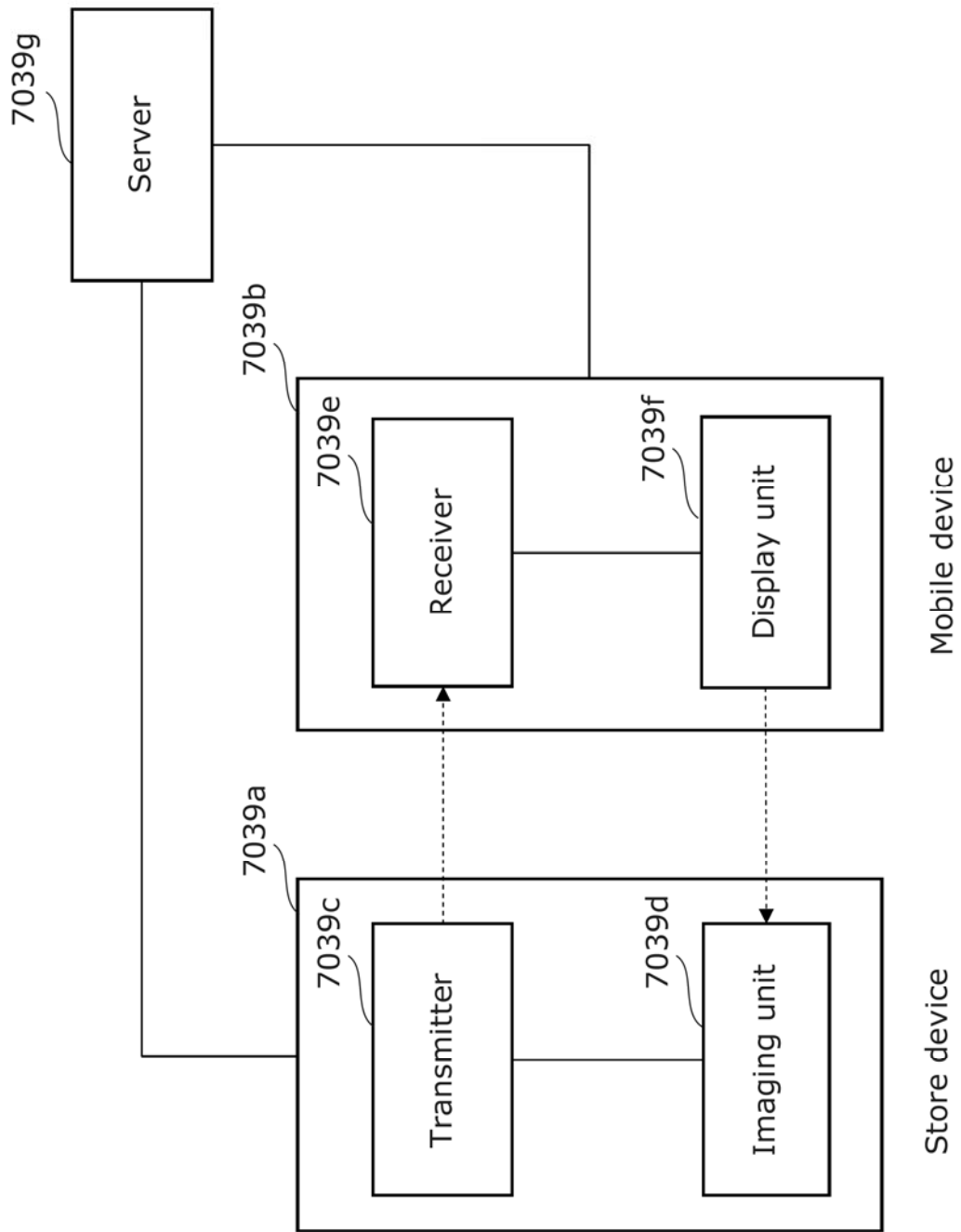


FIG. 277

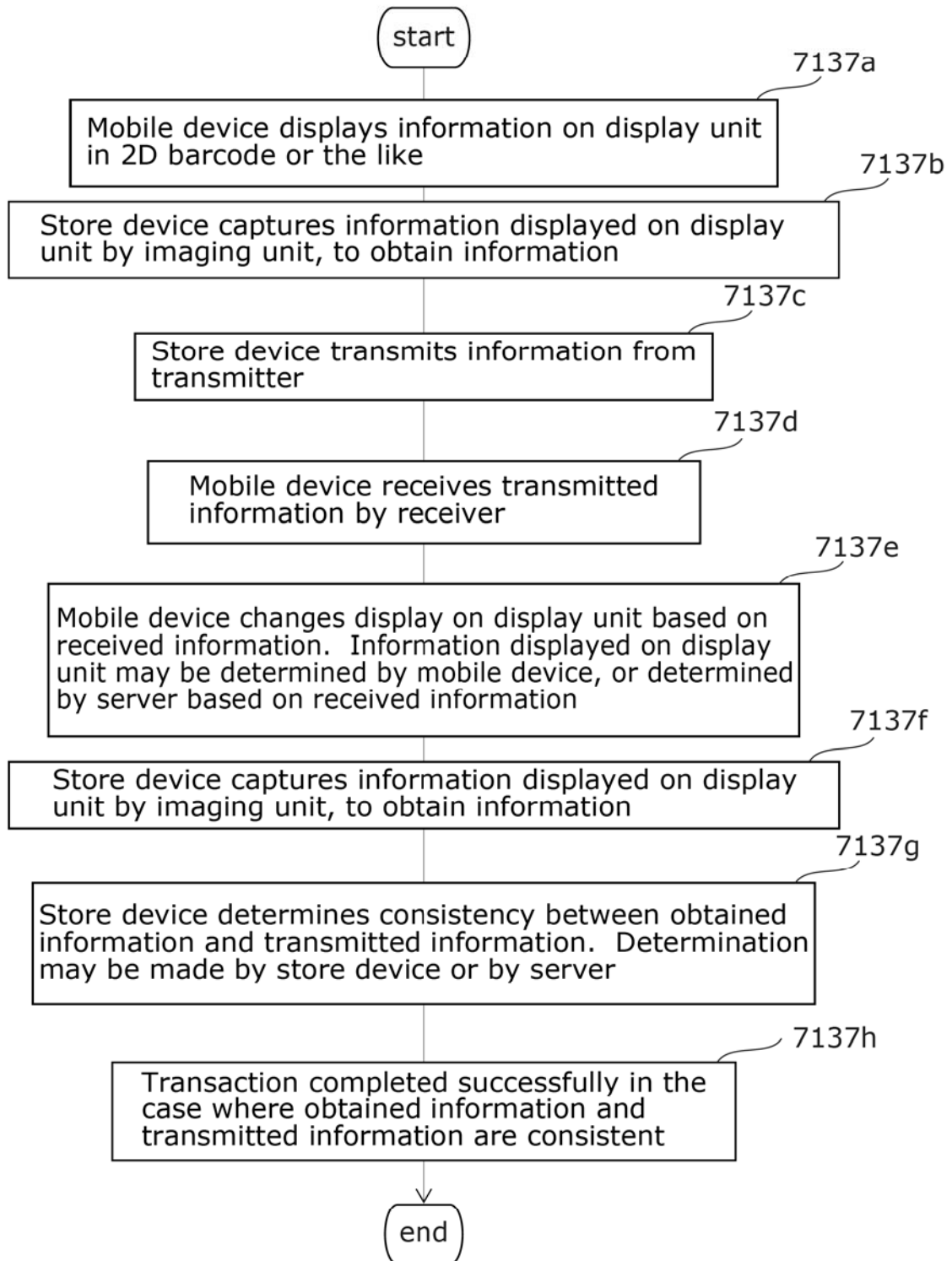


FIG. 278

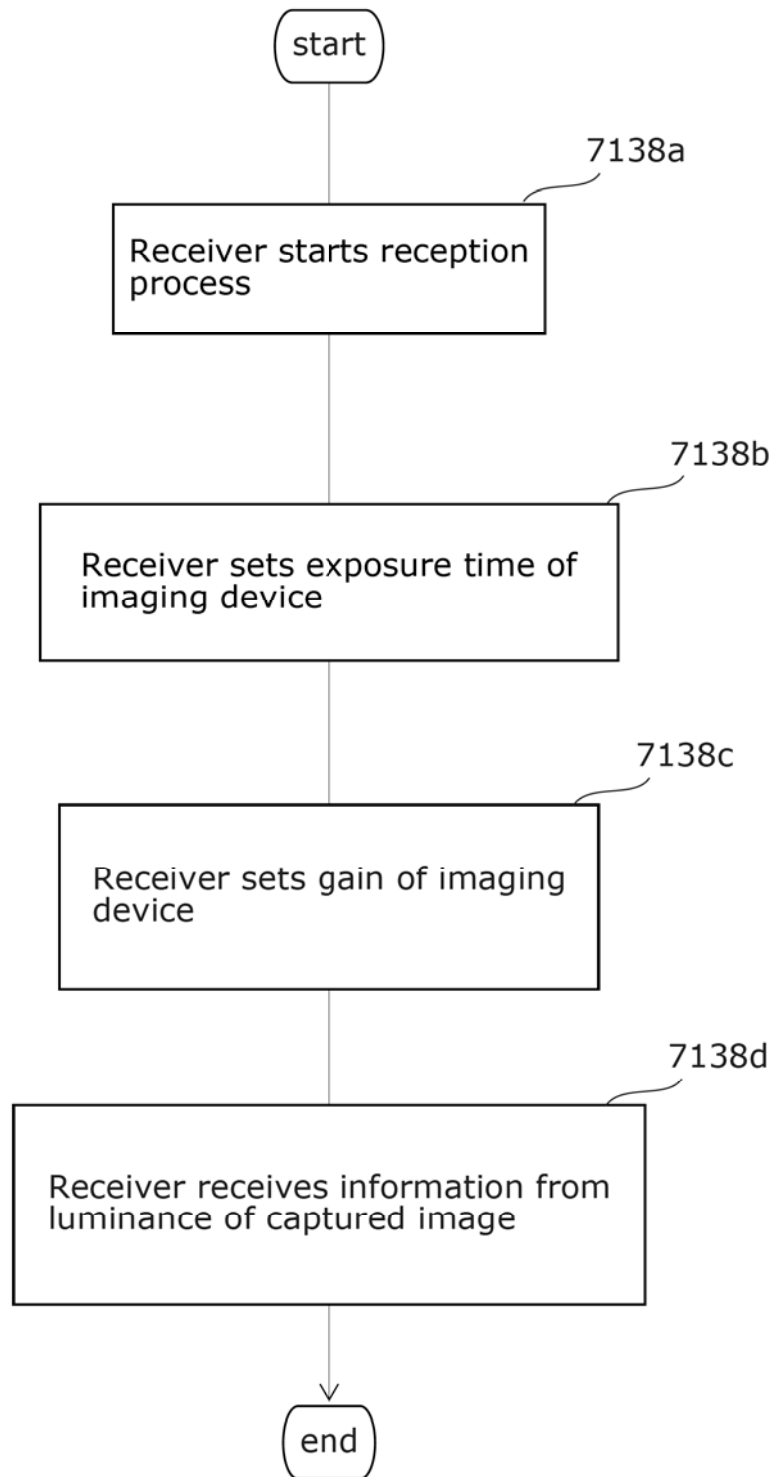


FIG. 279

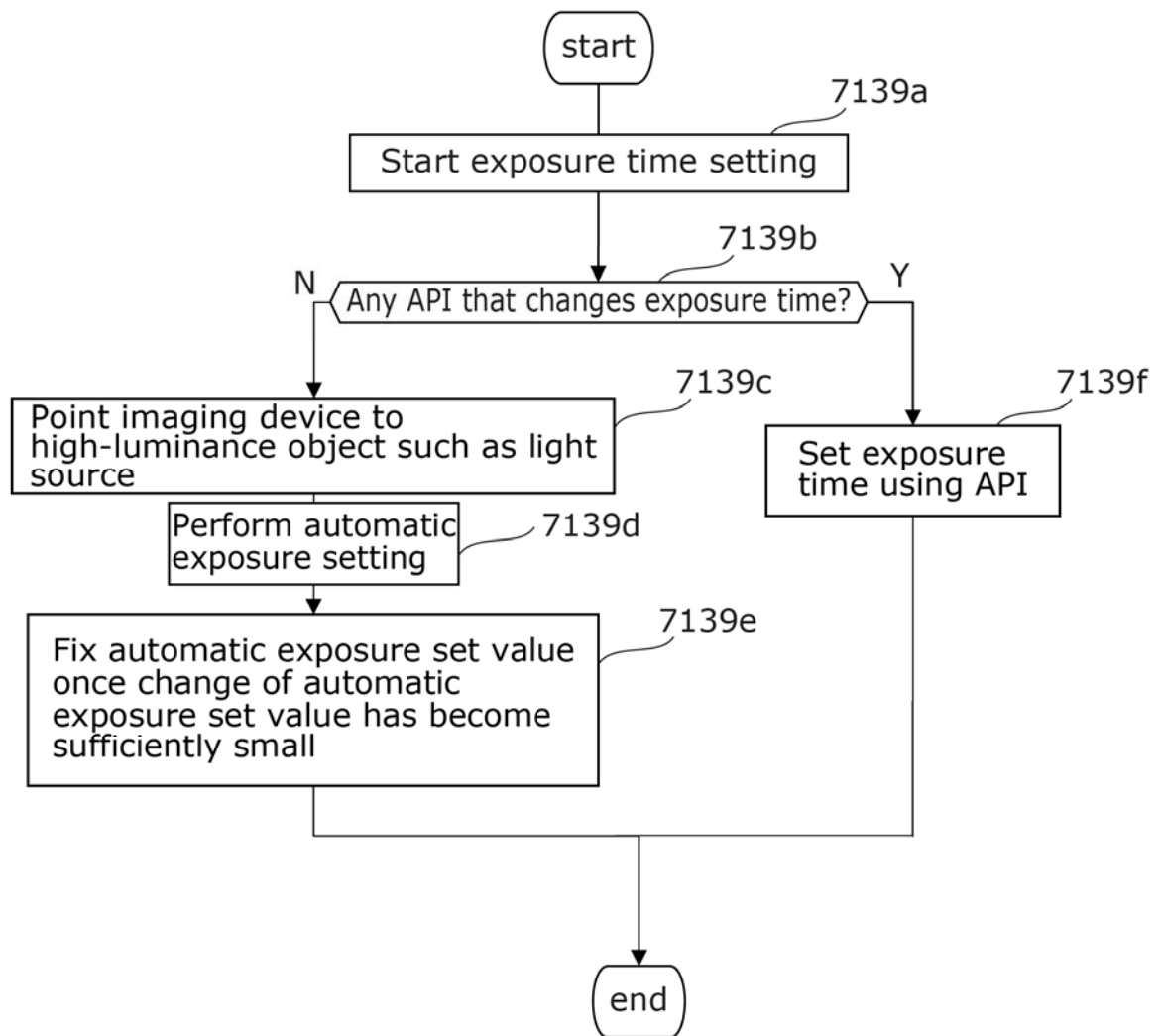


FIG. 280

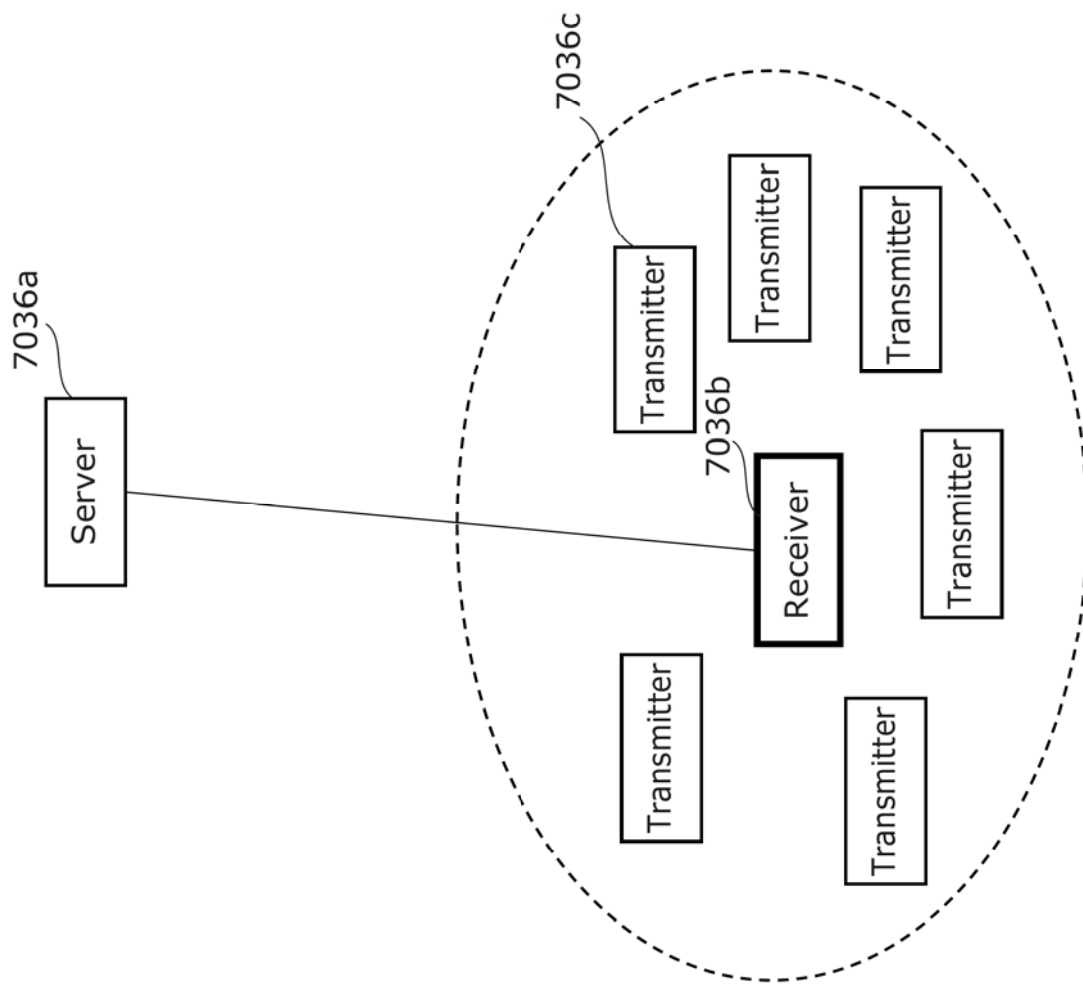


FIG. 281

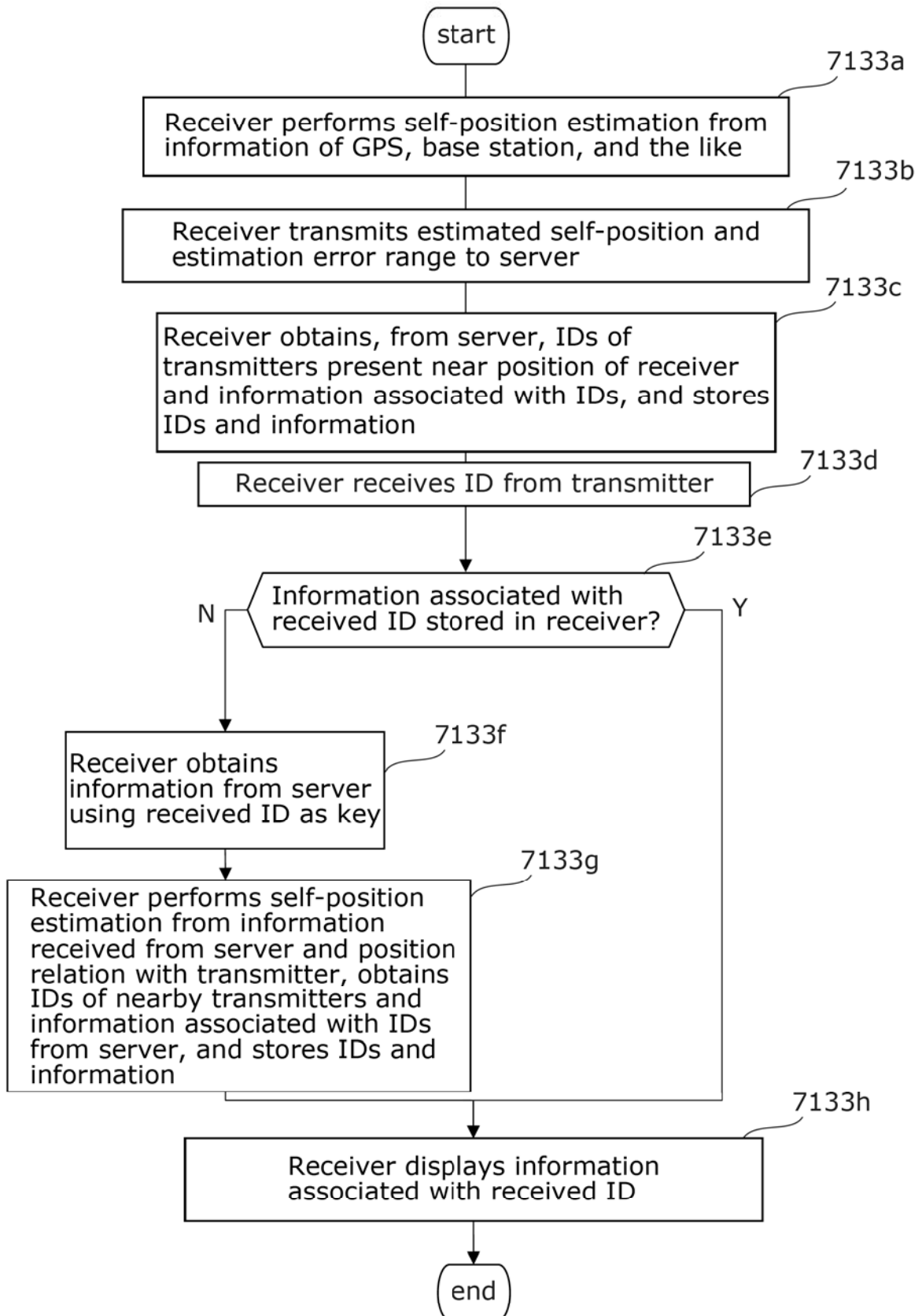


FIG. 282

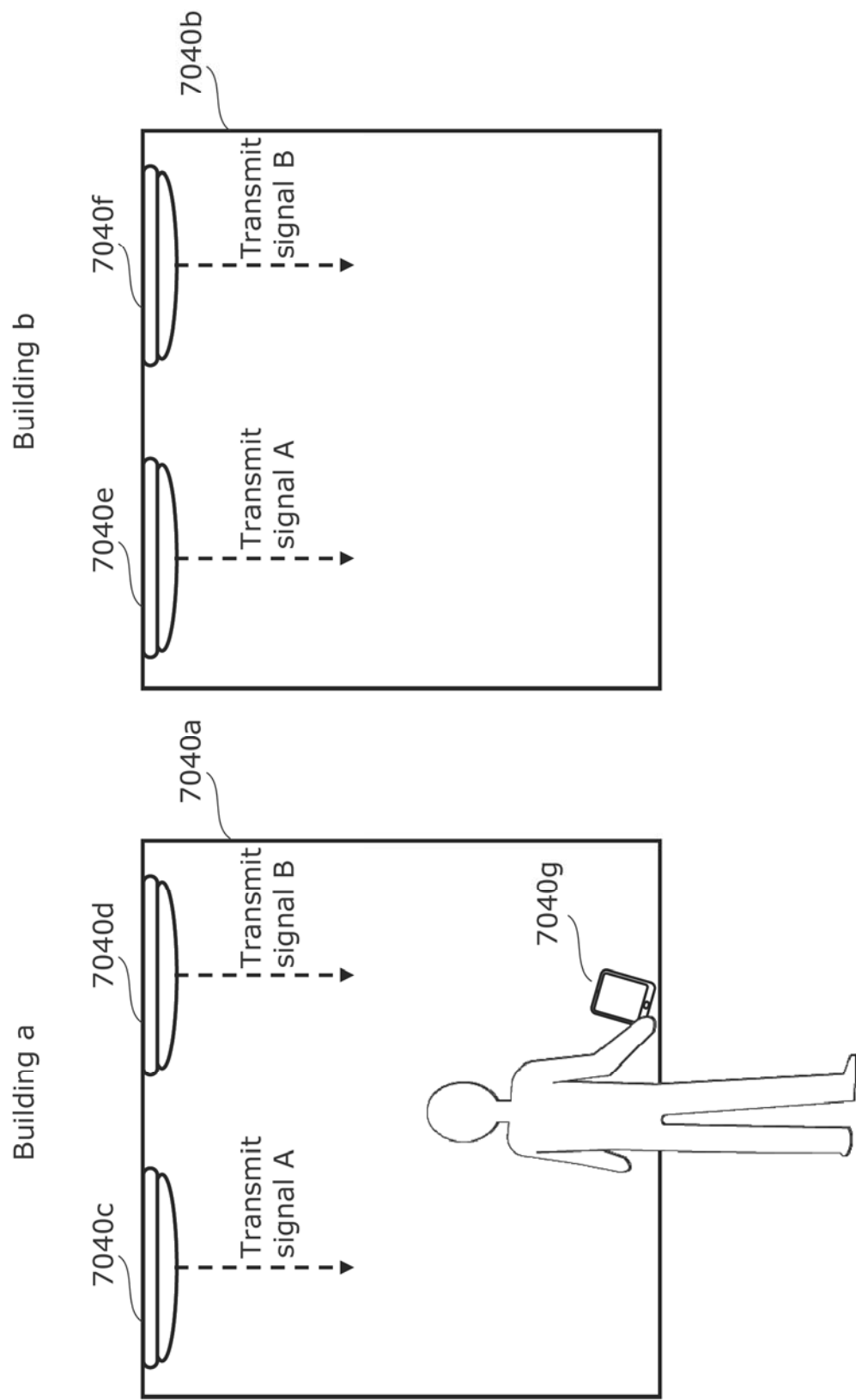




FIG. 283

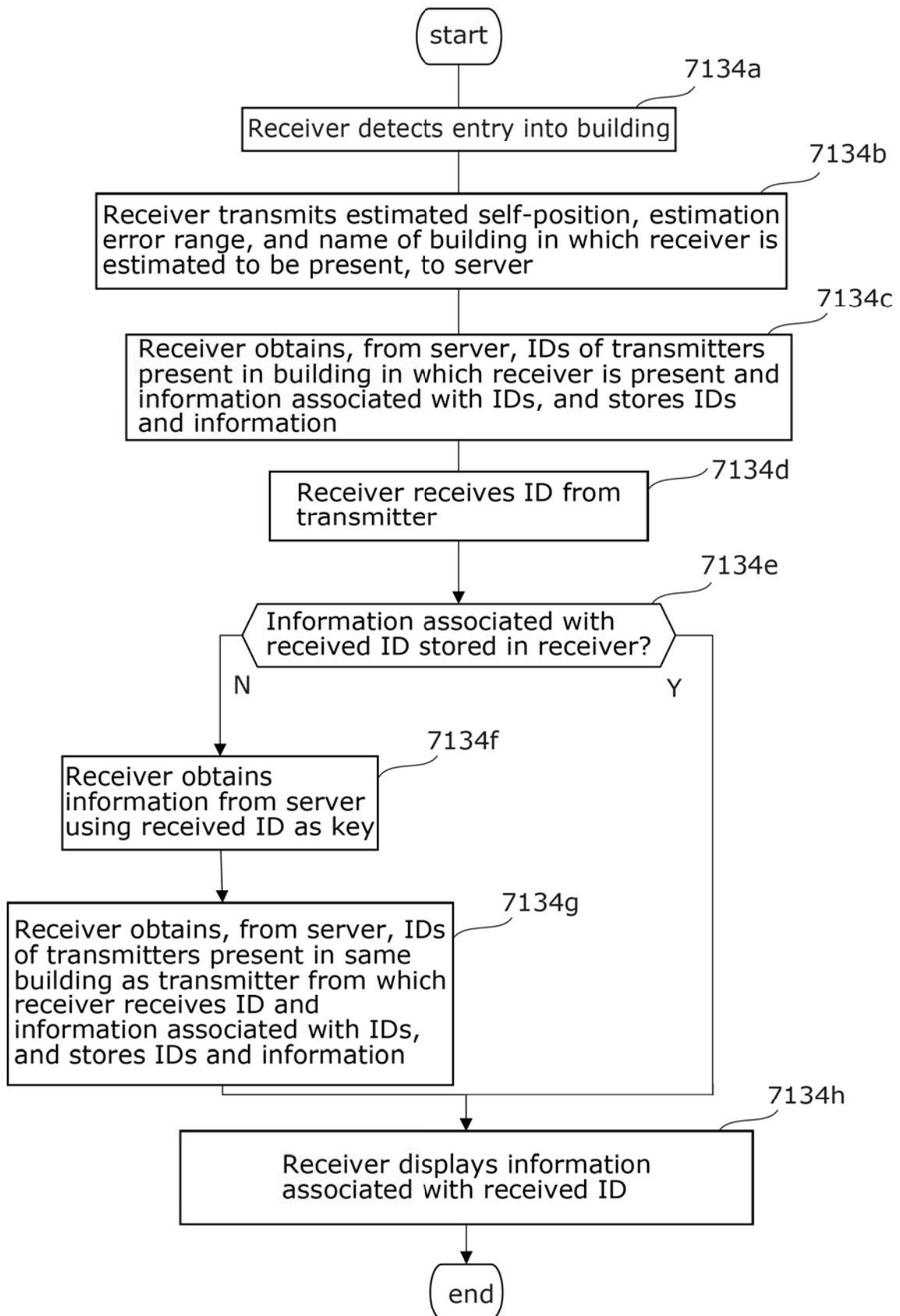


FIG. 284

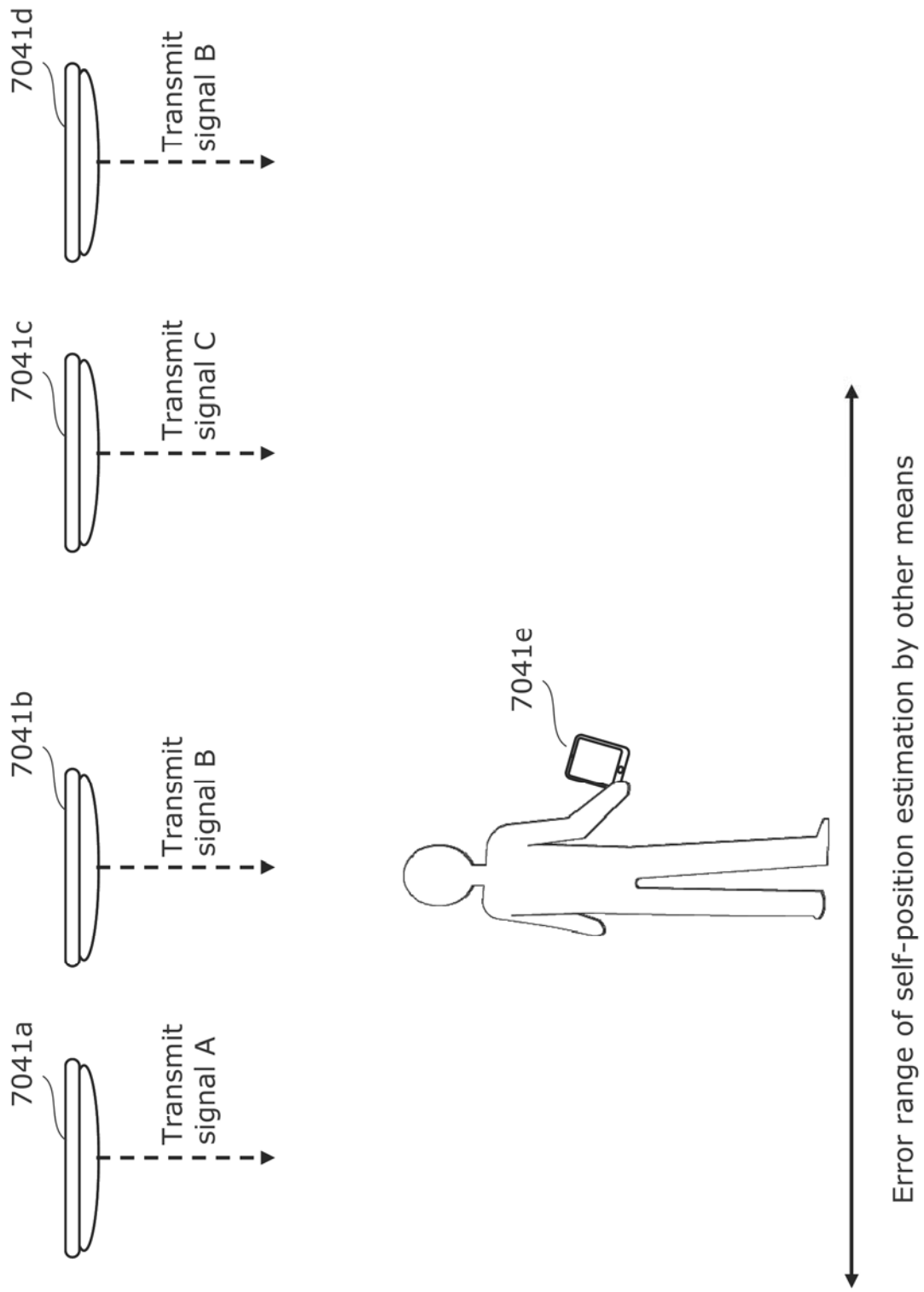


FIG. 285

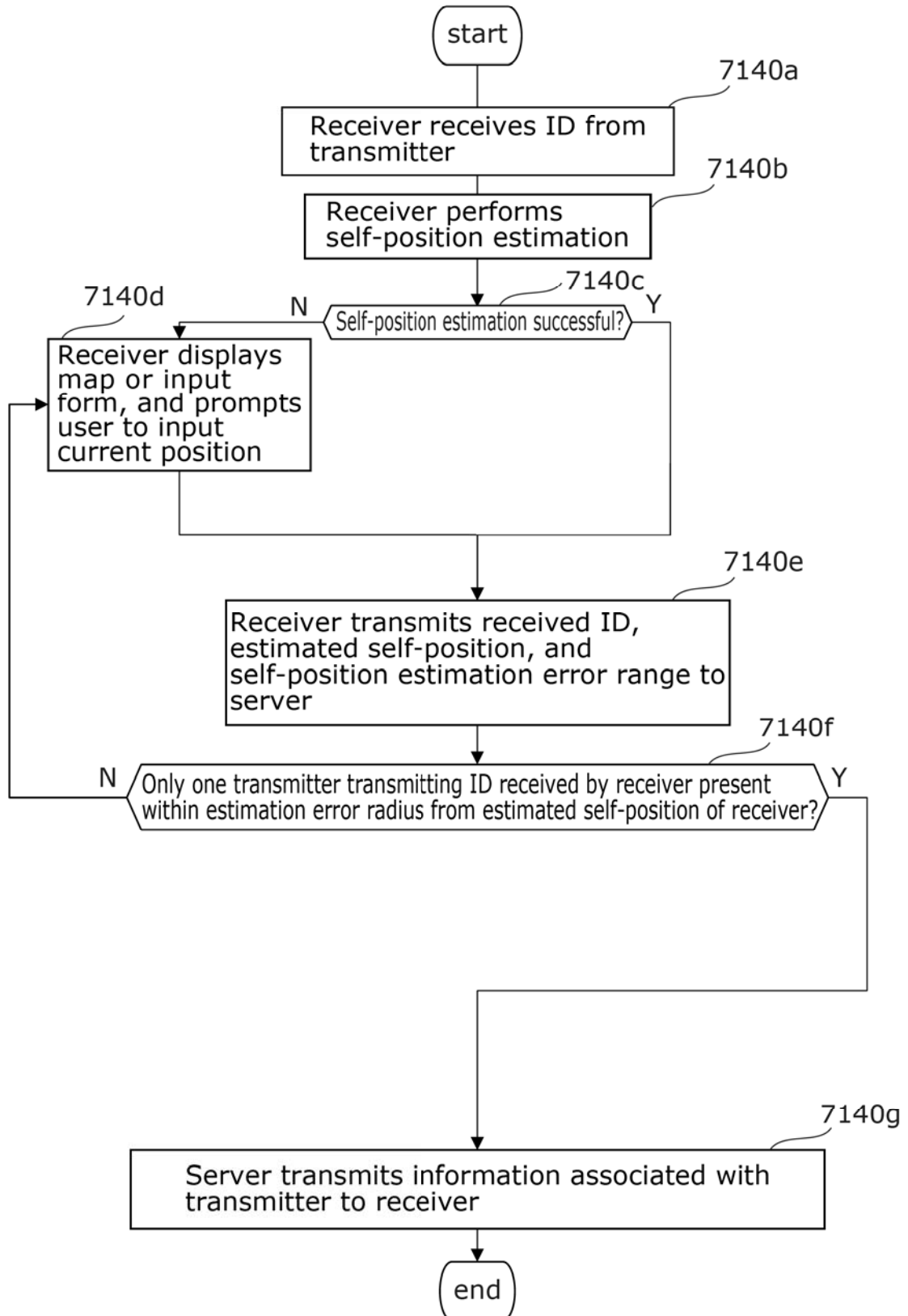


FIG. 286

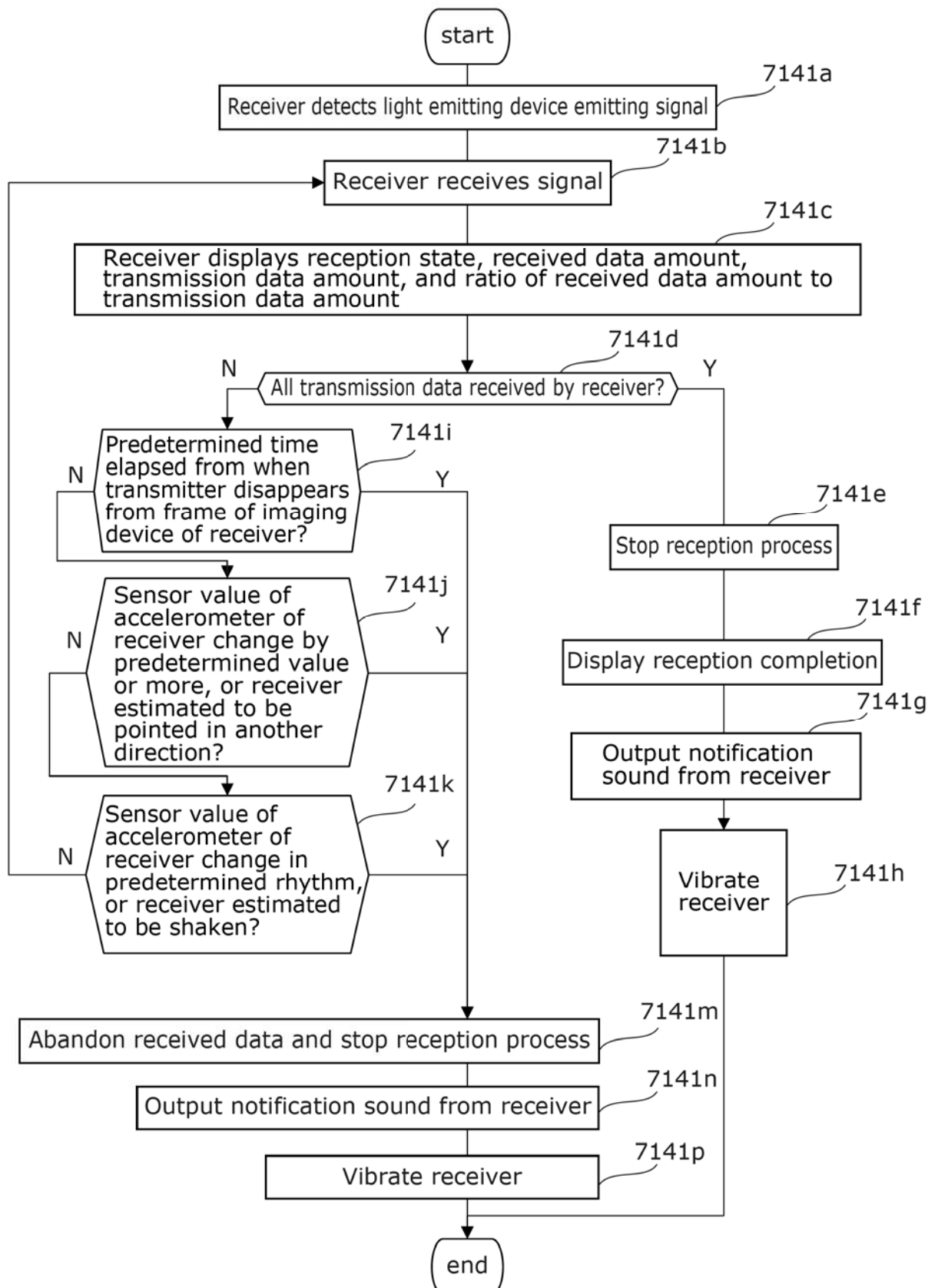


FIG. 287A

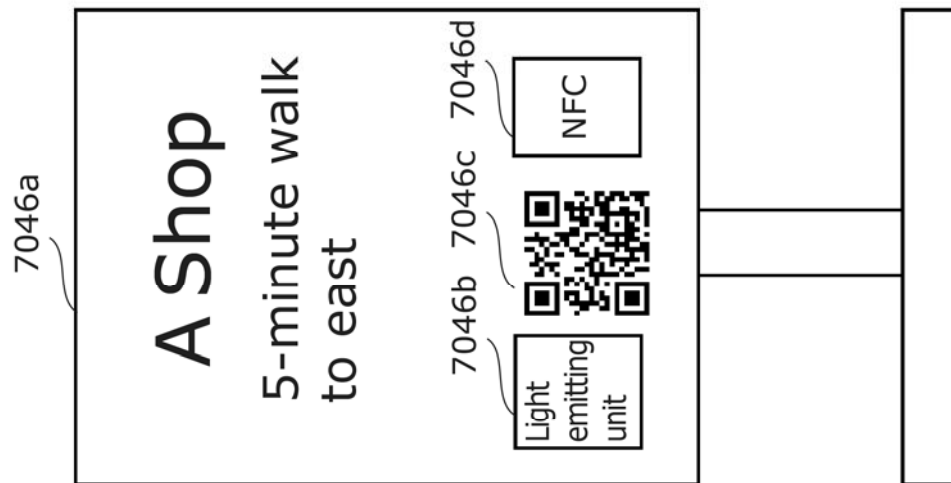


FIG. 287B

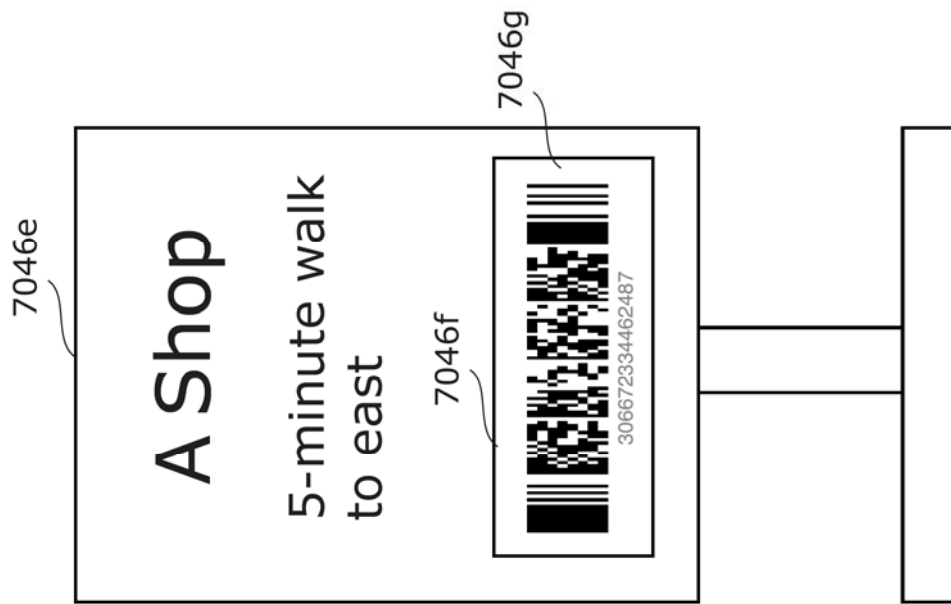


FIG. 288

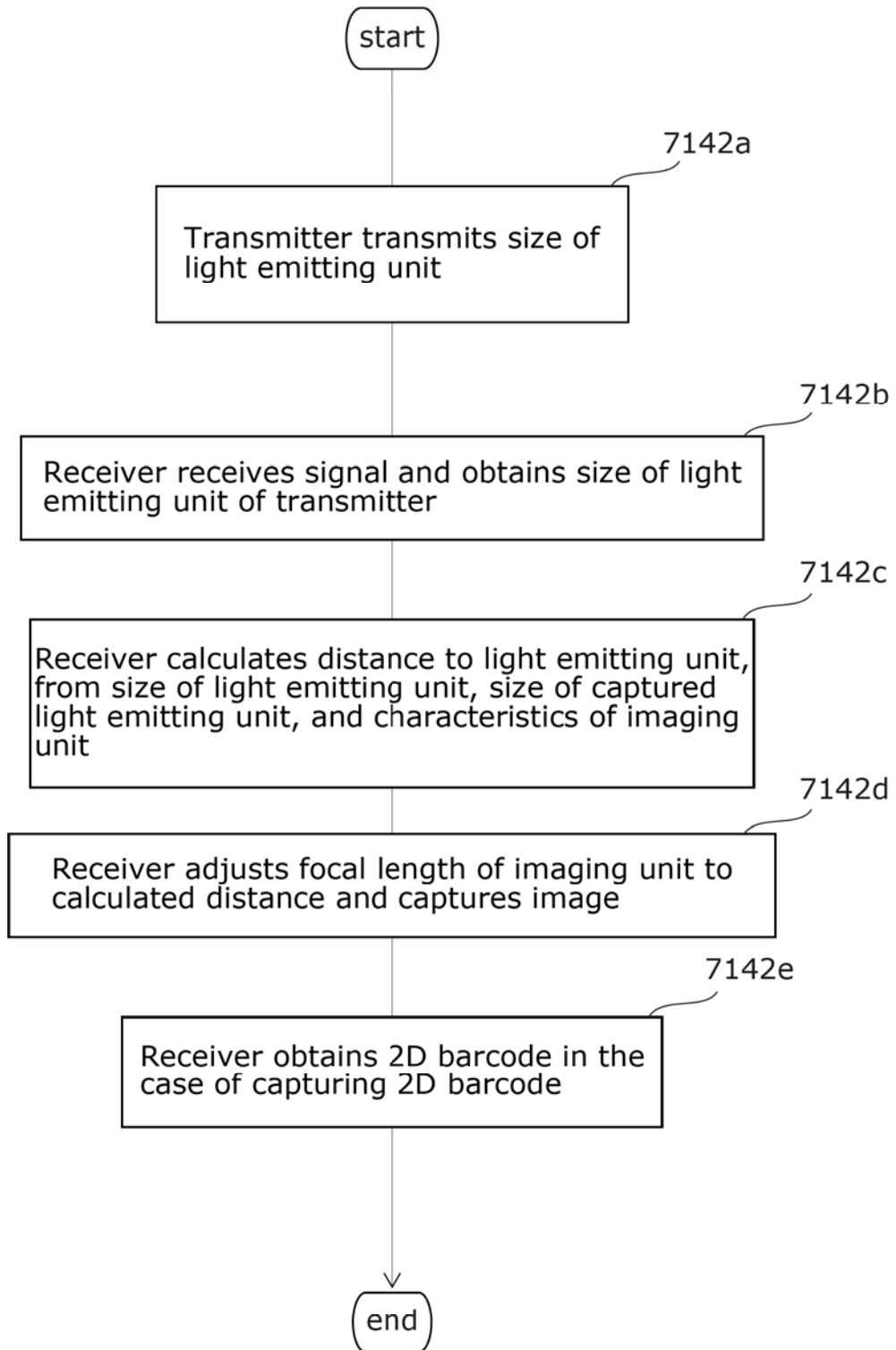


FIG. 289

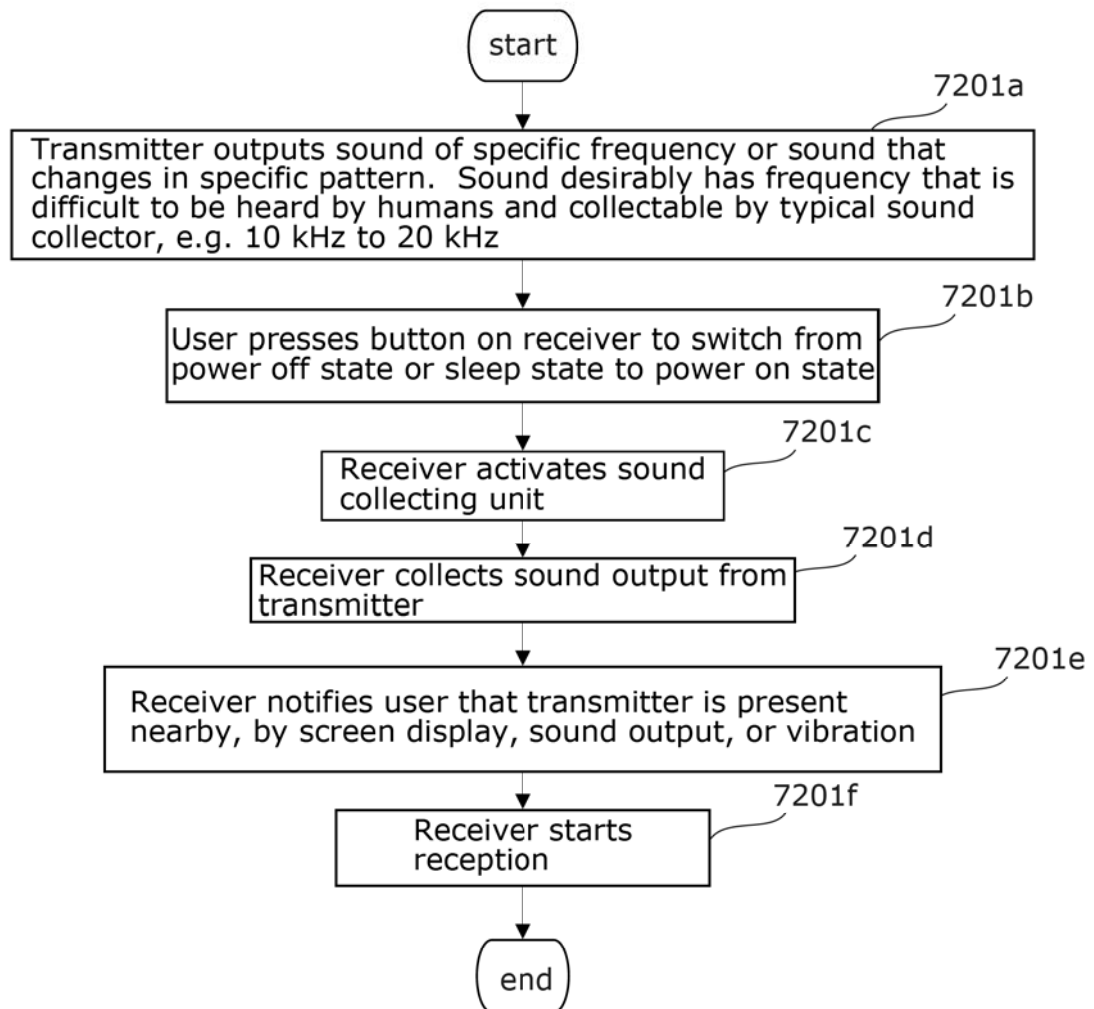


FIG. 290

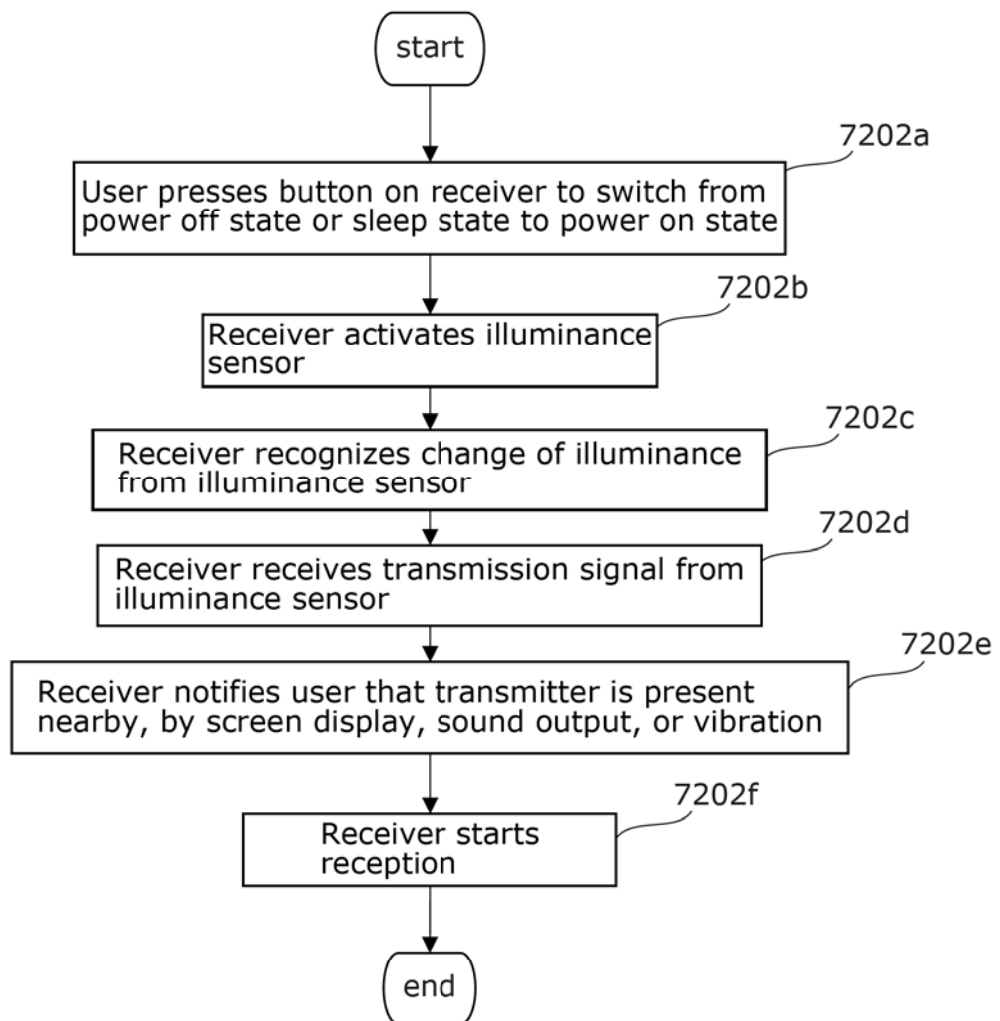




FIG. 291

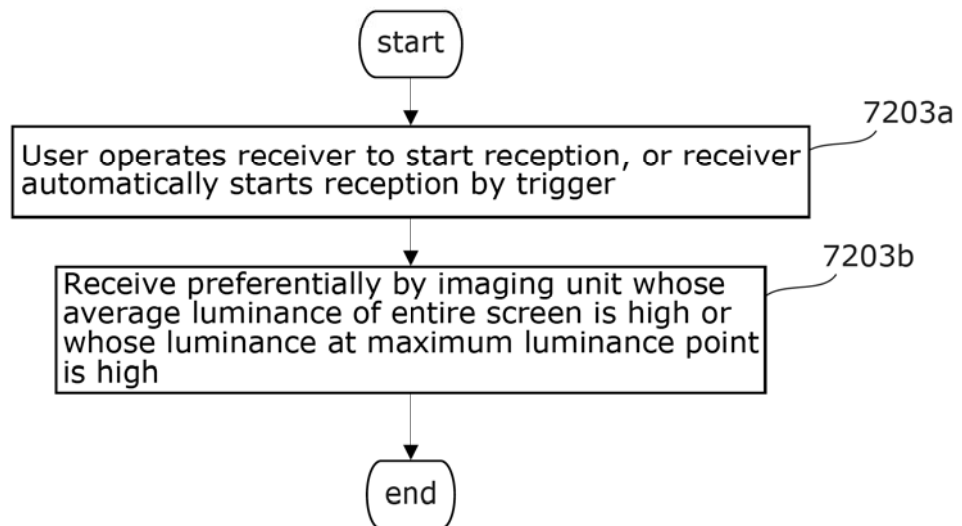


FIG. 292

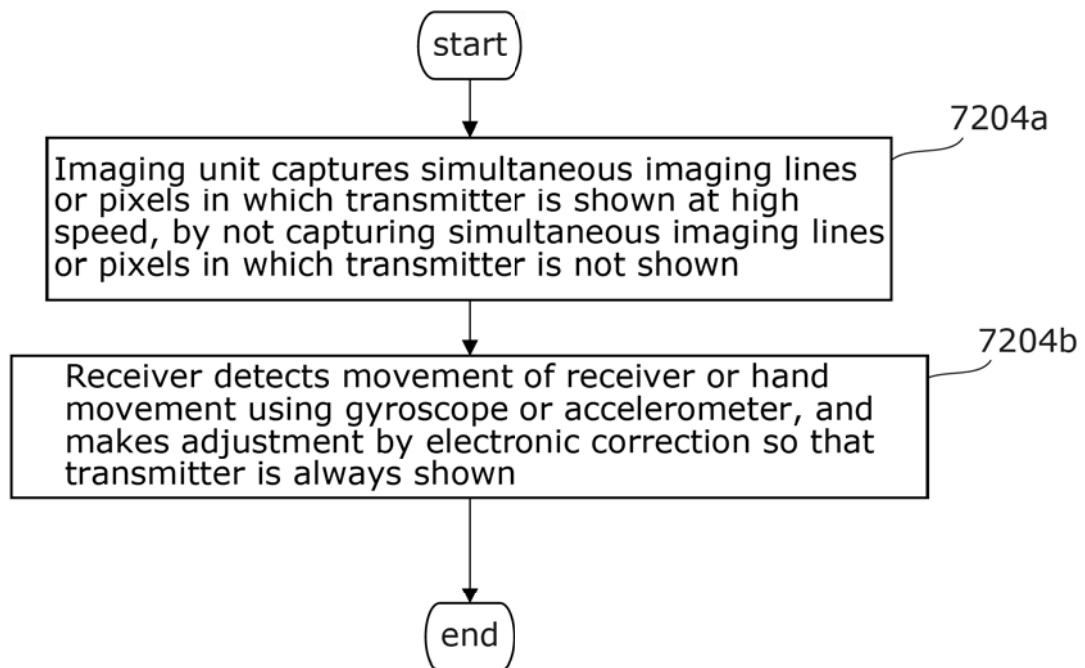


FIG. 293

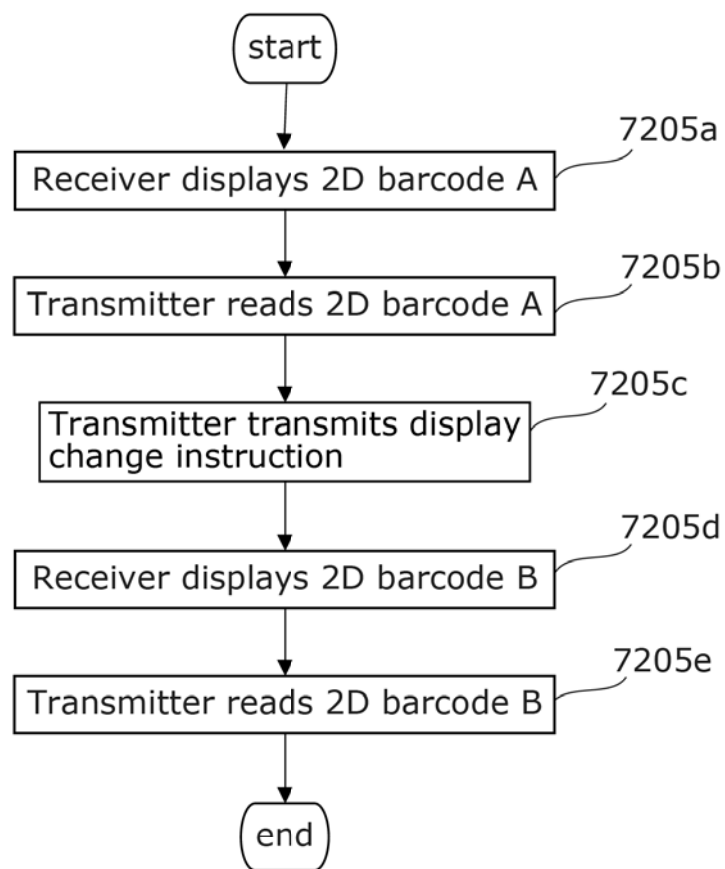


FIG. 294

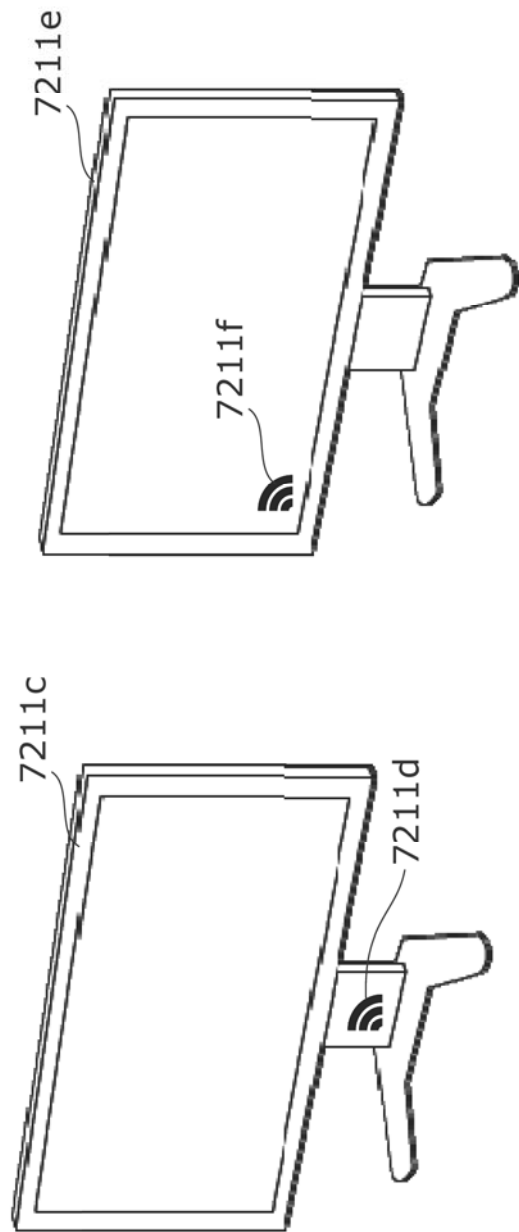
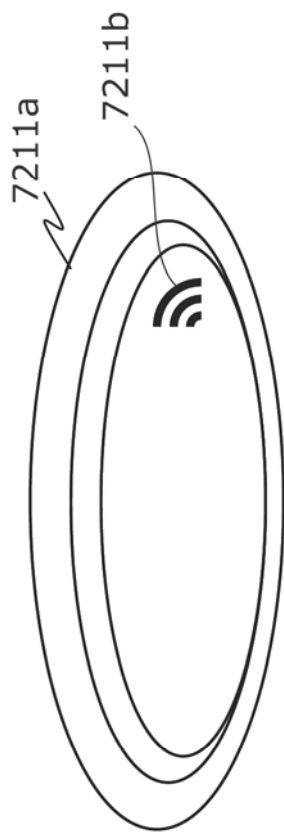


FIG. 295

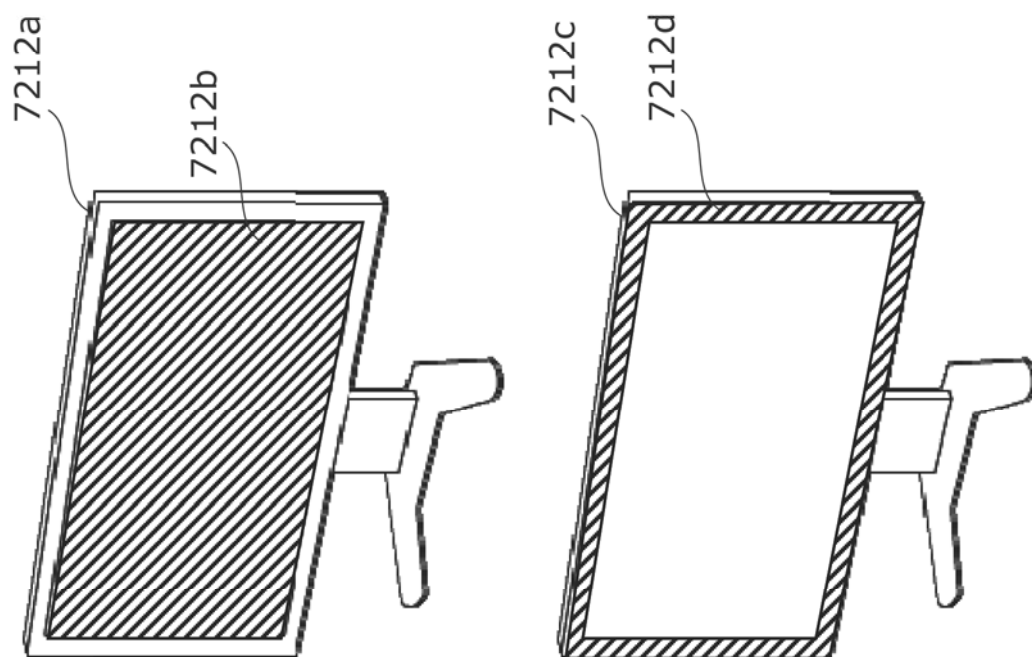


FIG. 296

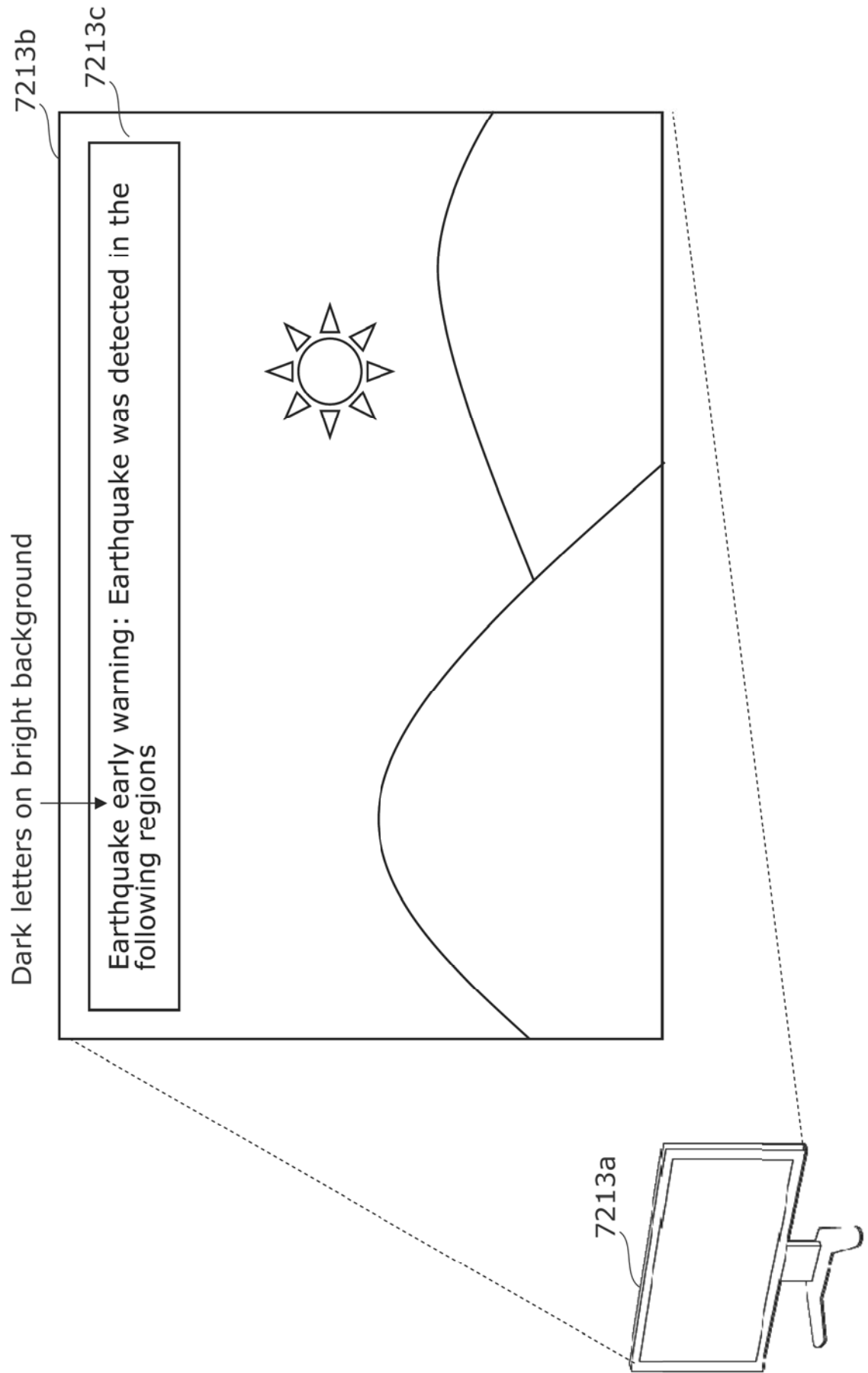


FIG. 297

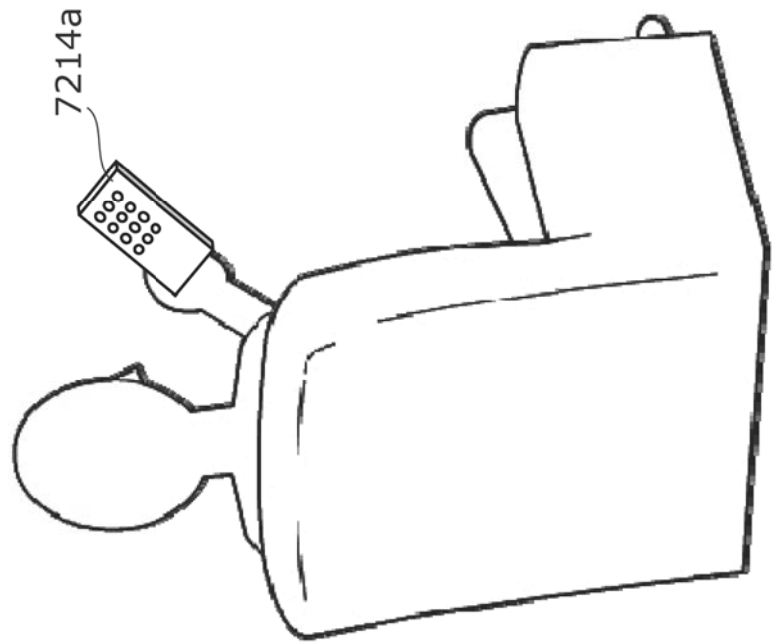
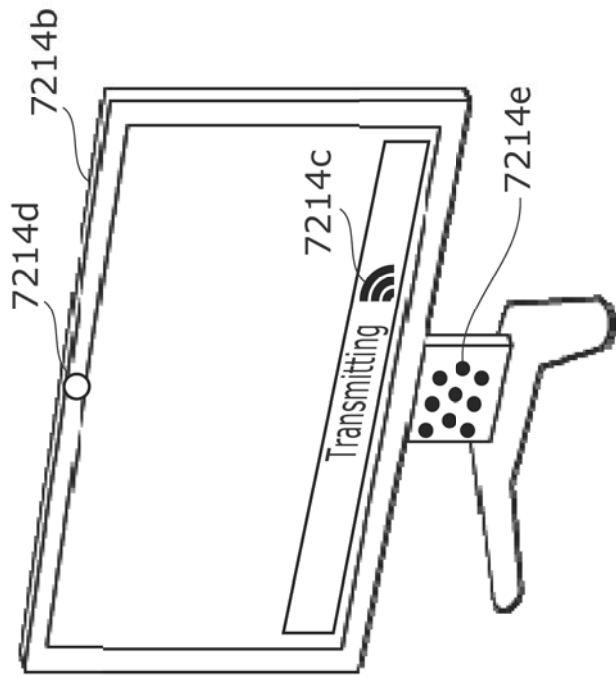


FIG. 298

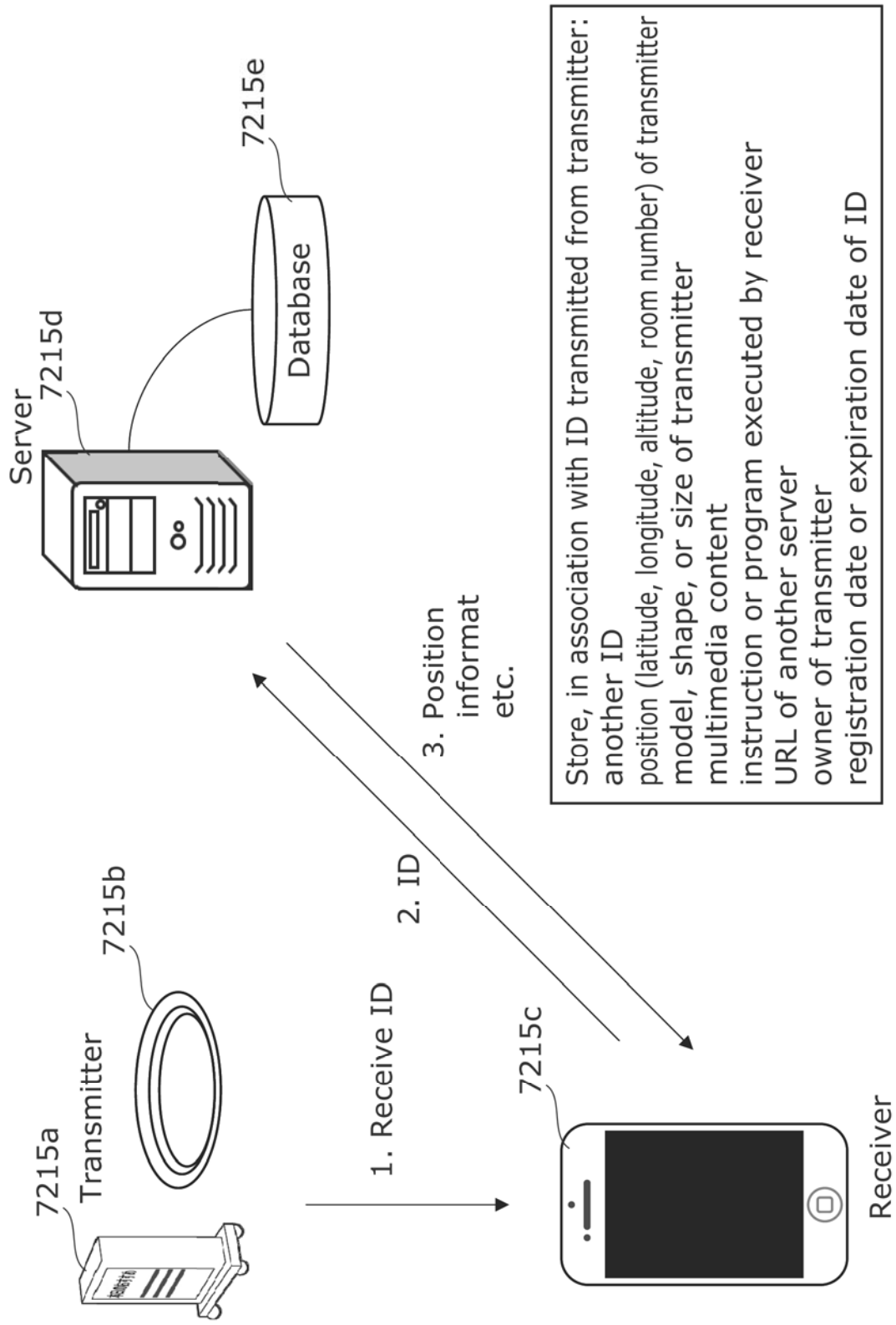




FIG. 299

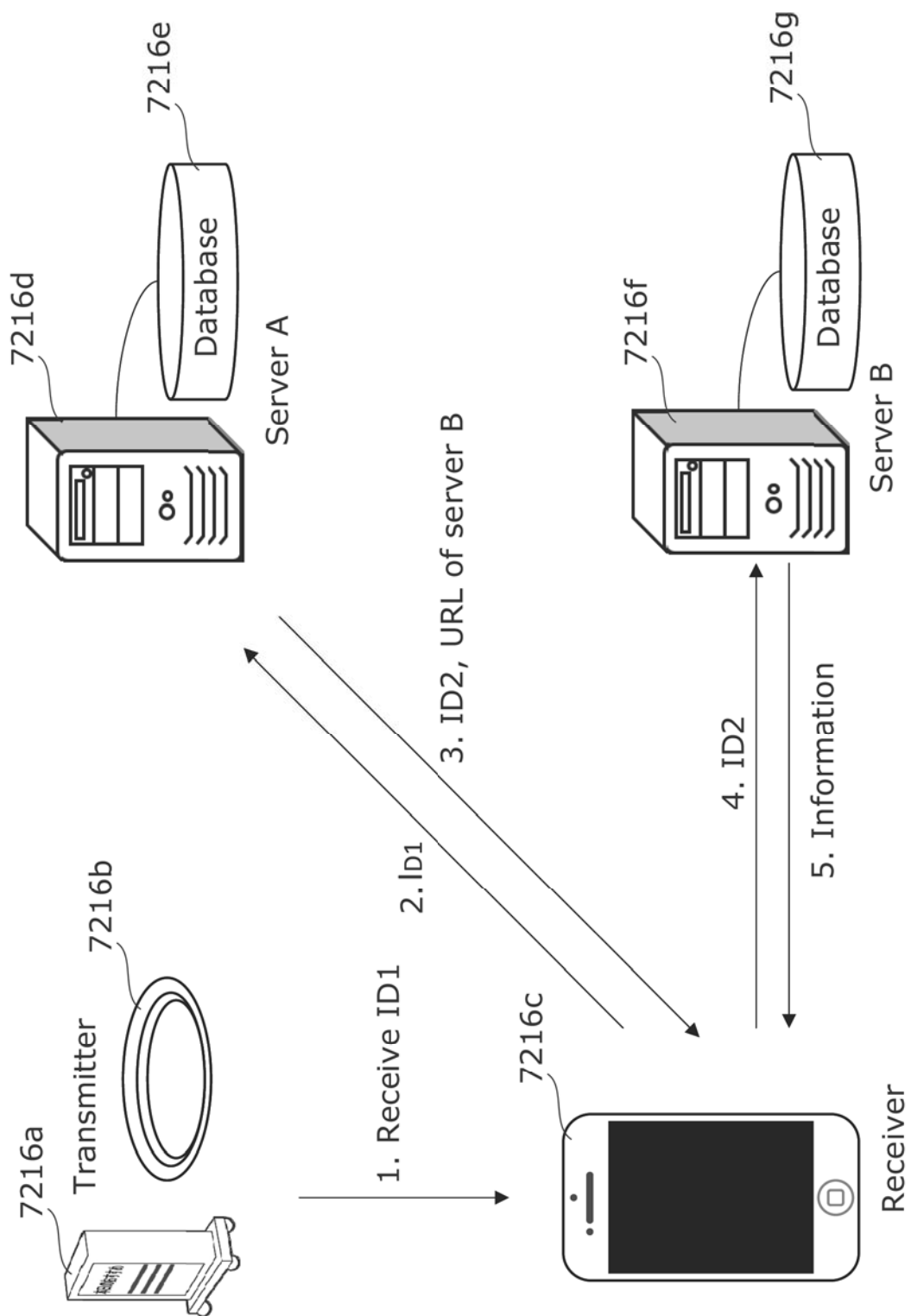


FIG. 300

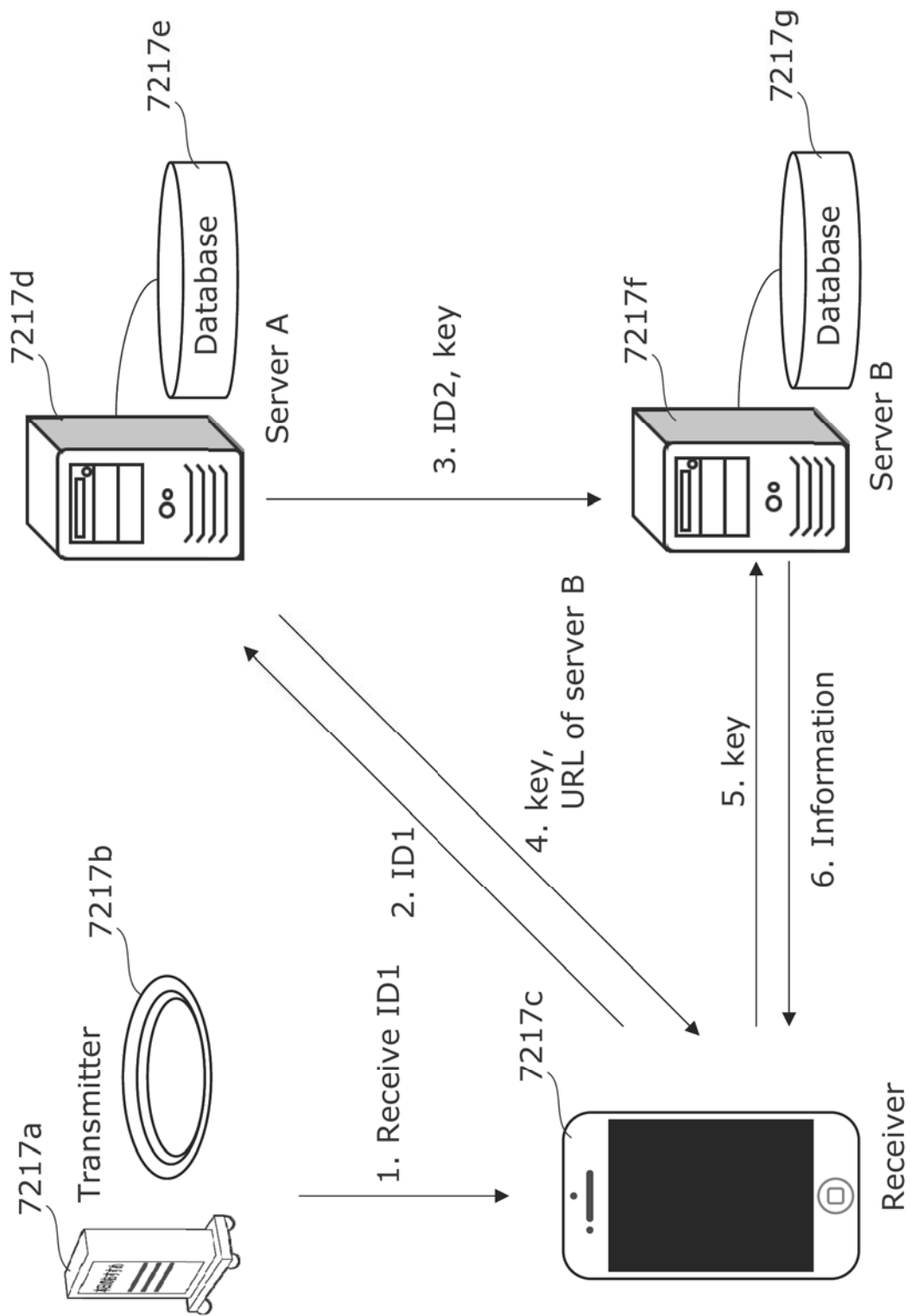


FIG. 301A

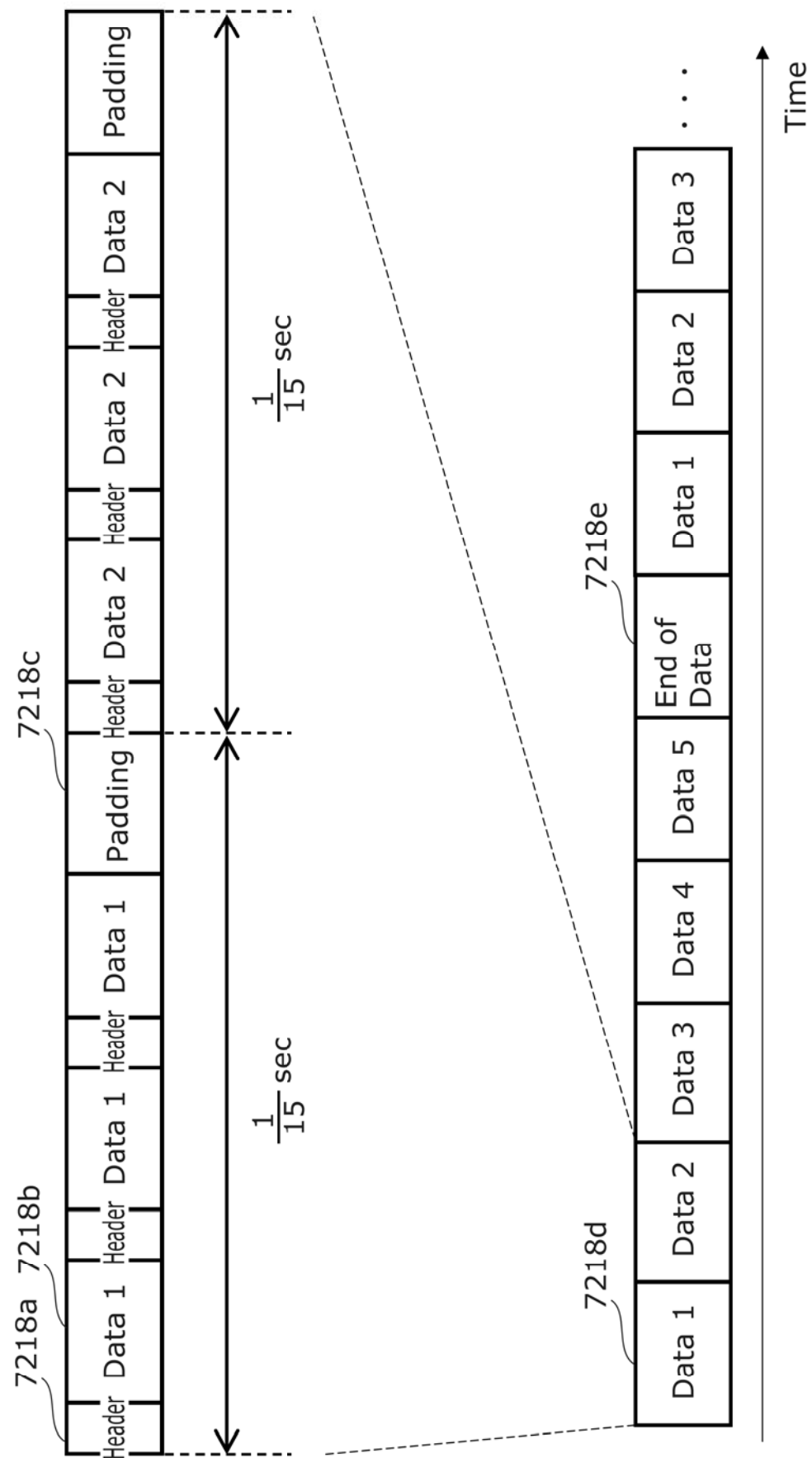


FIG. 301B

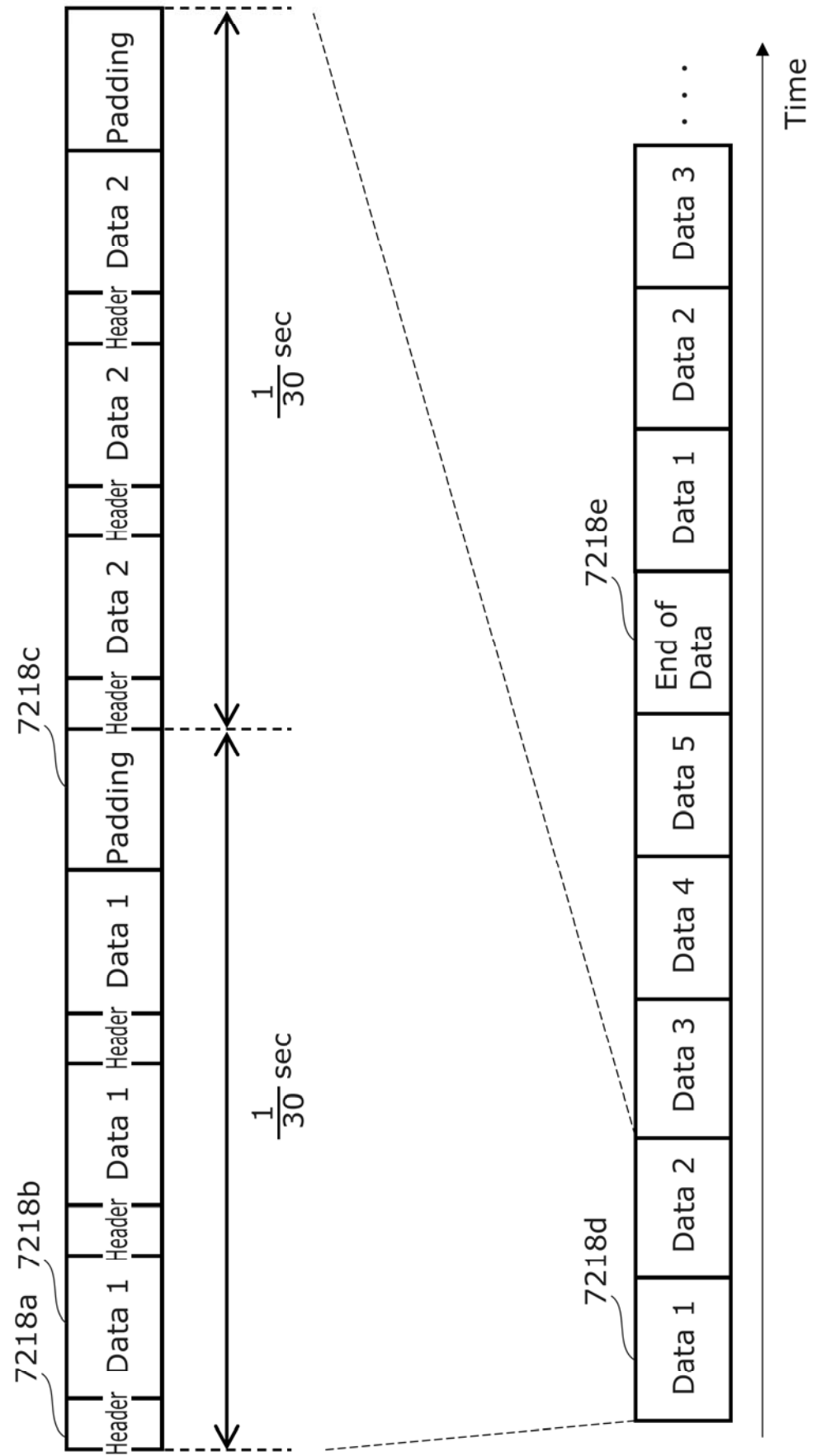


FIG. 302

| Transmission signal | Modulated signal |
|---------------------|------------------|
| 00 (0)              | 01111            |
| 01 (1)              | 10111            |
| 10 (2)              | 11011            |
| 11 (3)              | 11101            |
| Header              | 11110            |

7219a

FIG. 303A

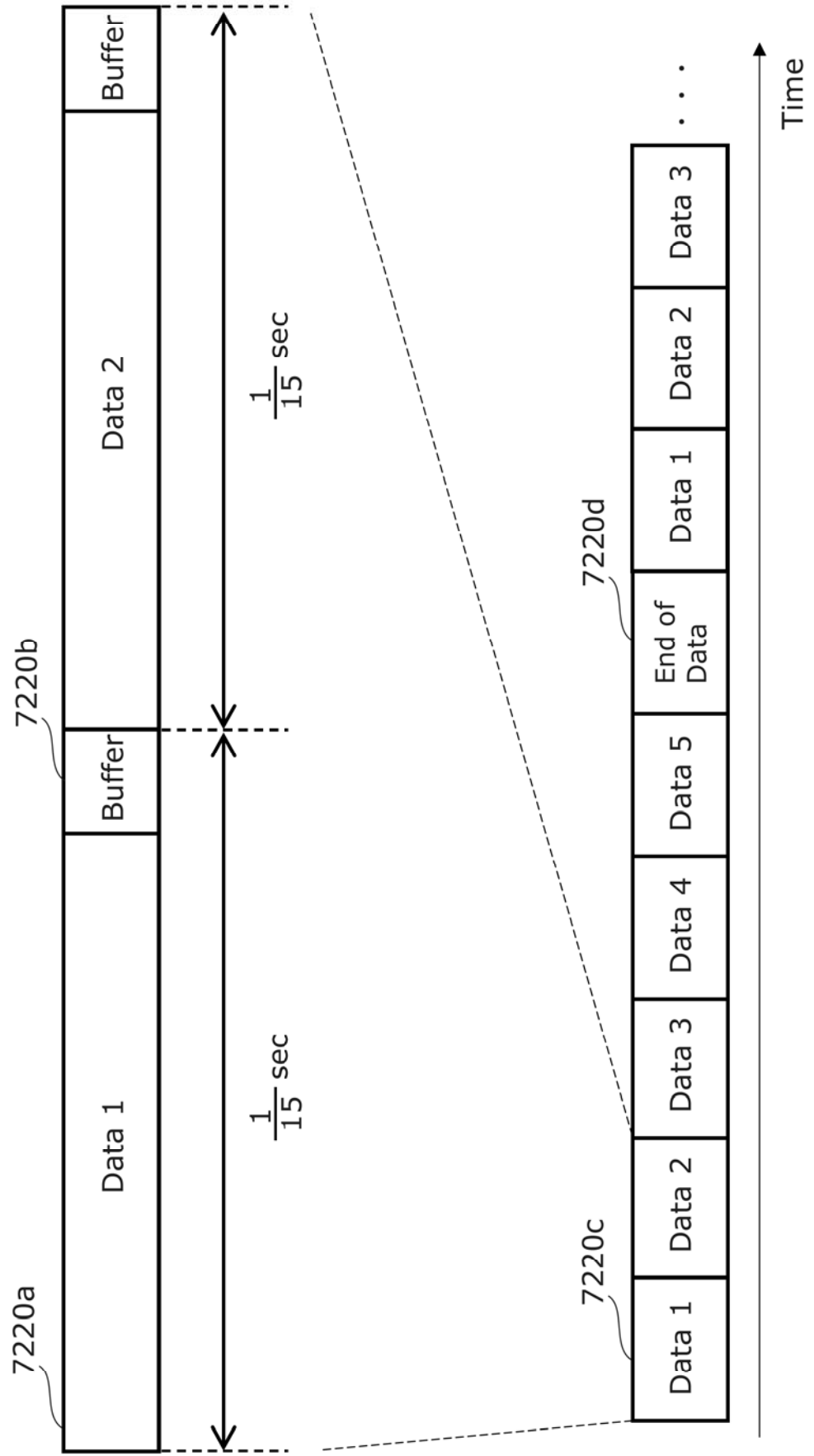


FIG. 303B

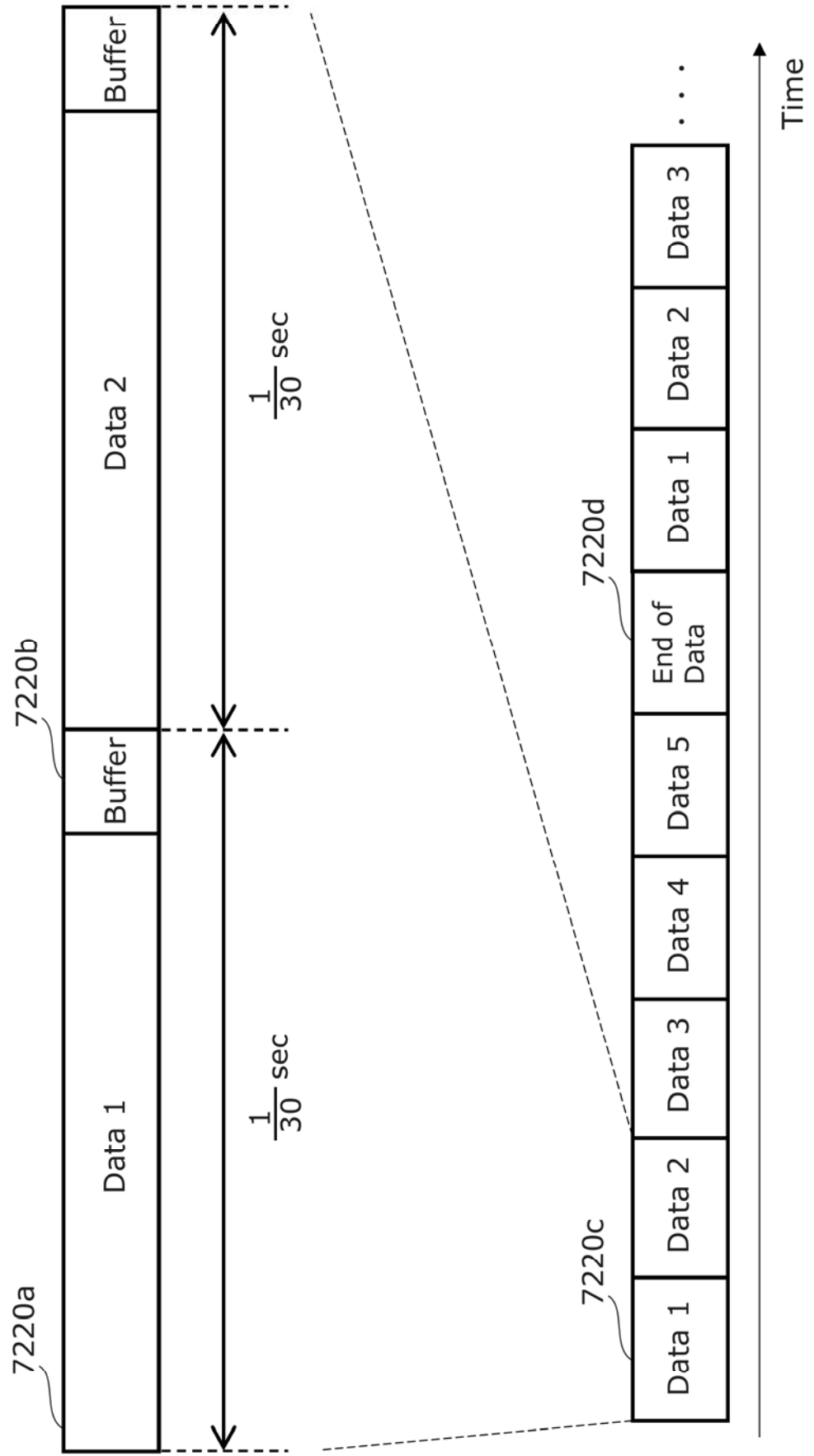


FIG. 304

7221a

| Transmission signal | Modulation frequency |
|---------------------|----------------------|
| 00 (0)              | 500Hz                |
| 01 (1)              | 1000Hz               |
| 10 (2)              | 2000Hz               |
| 11 (3)              | 5000Hz               |



FIG. 305A

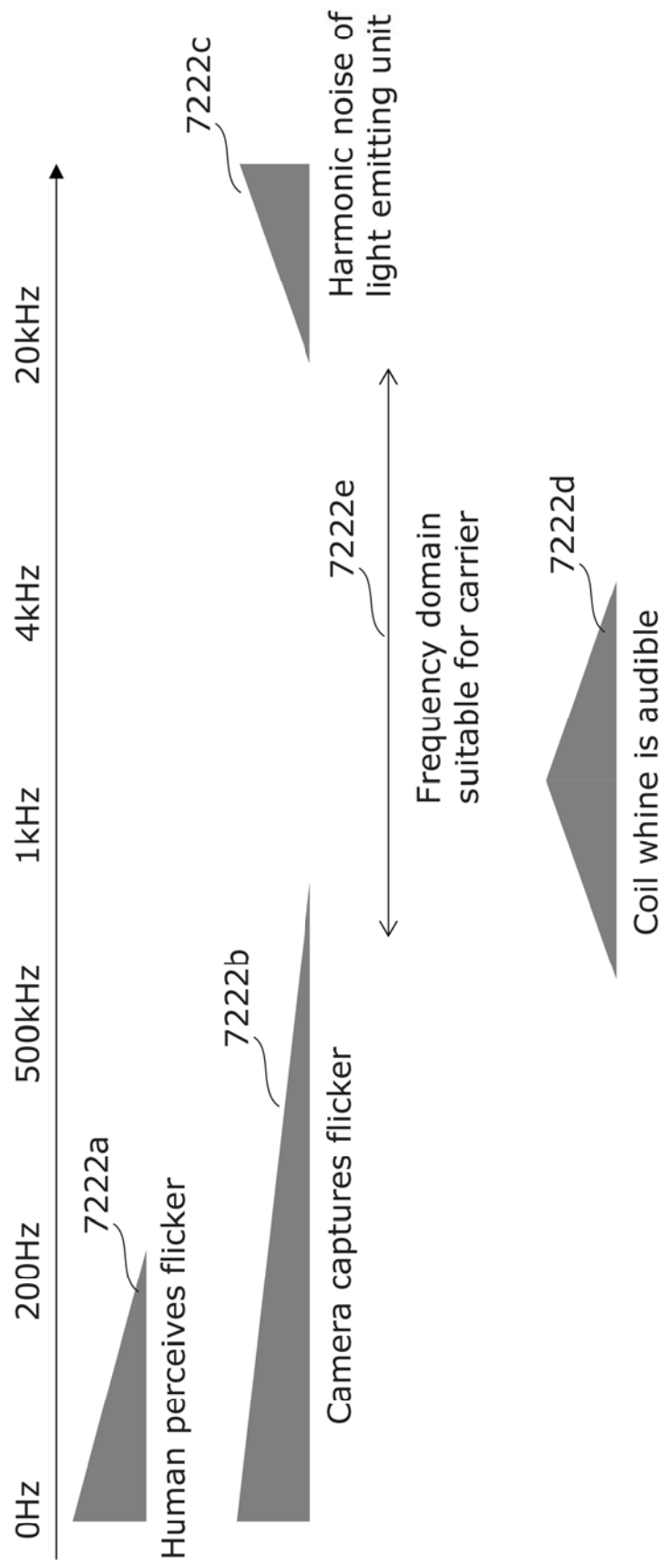


FIG. 305B

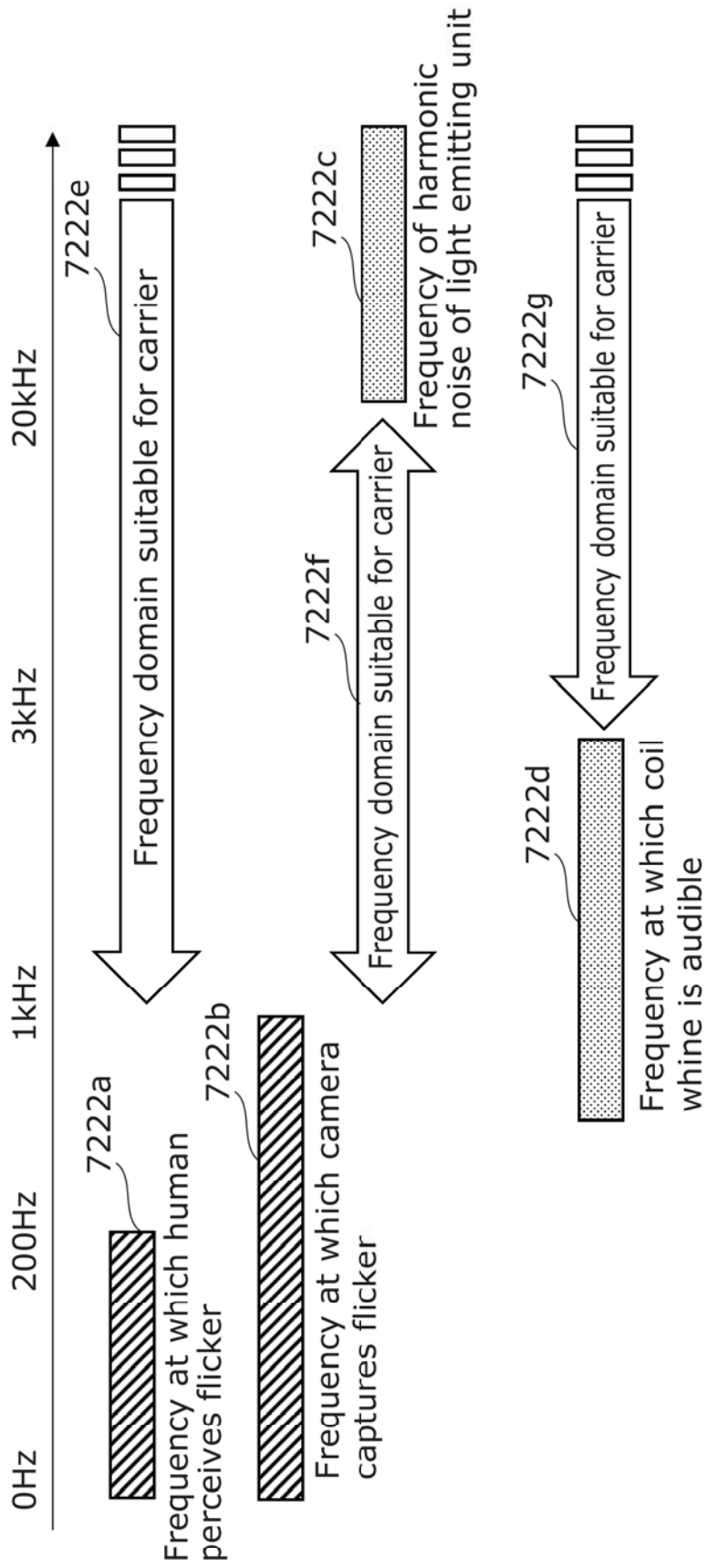


FIG. 306

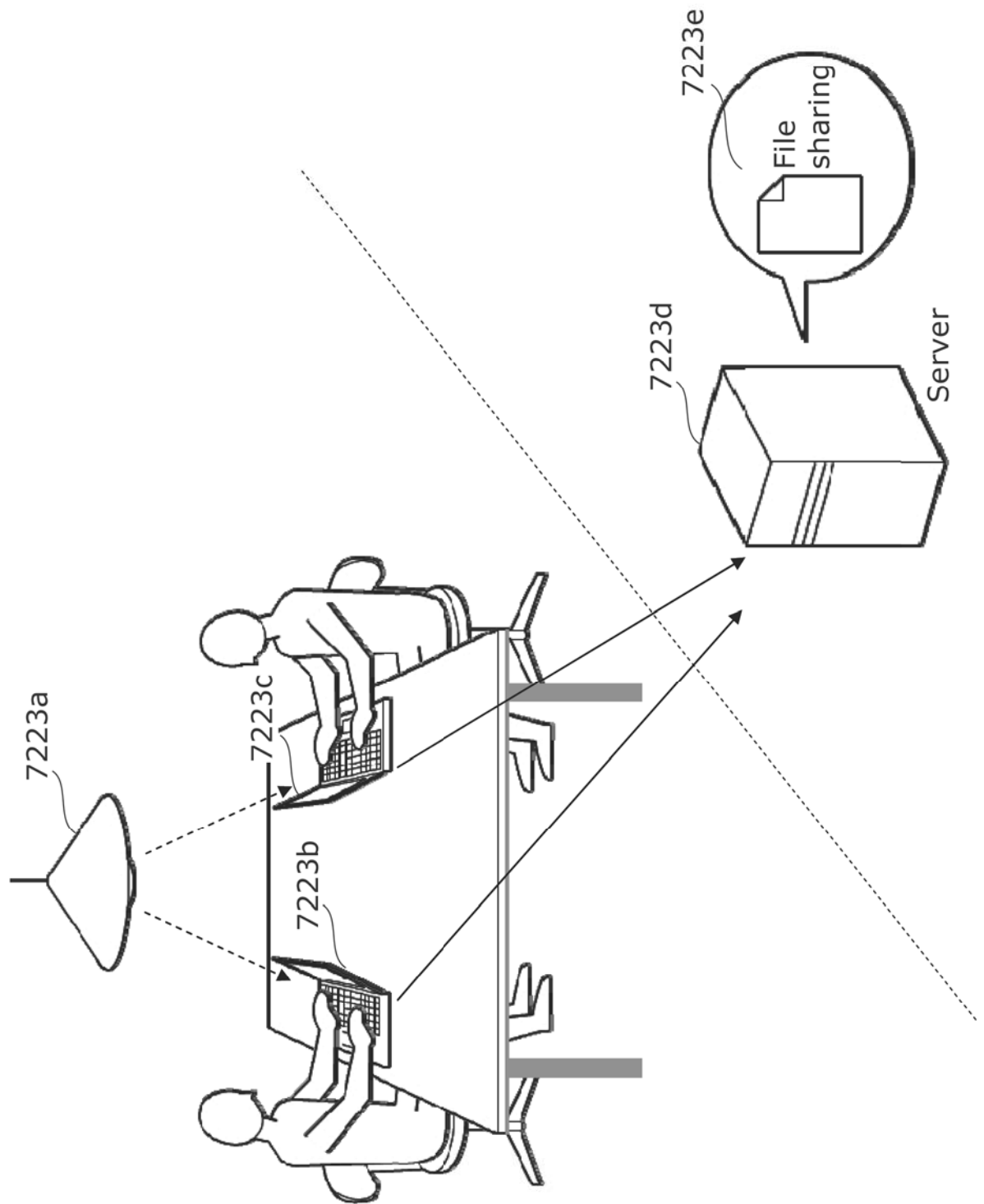


FIG. 307

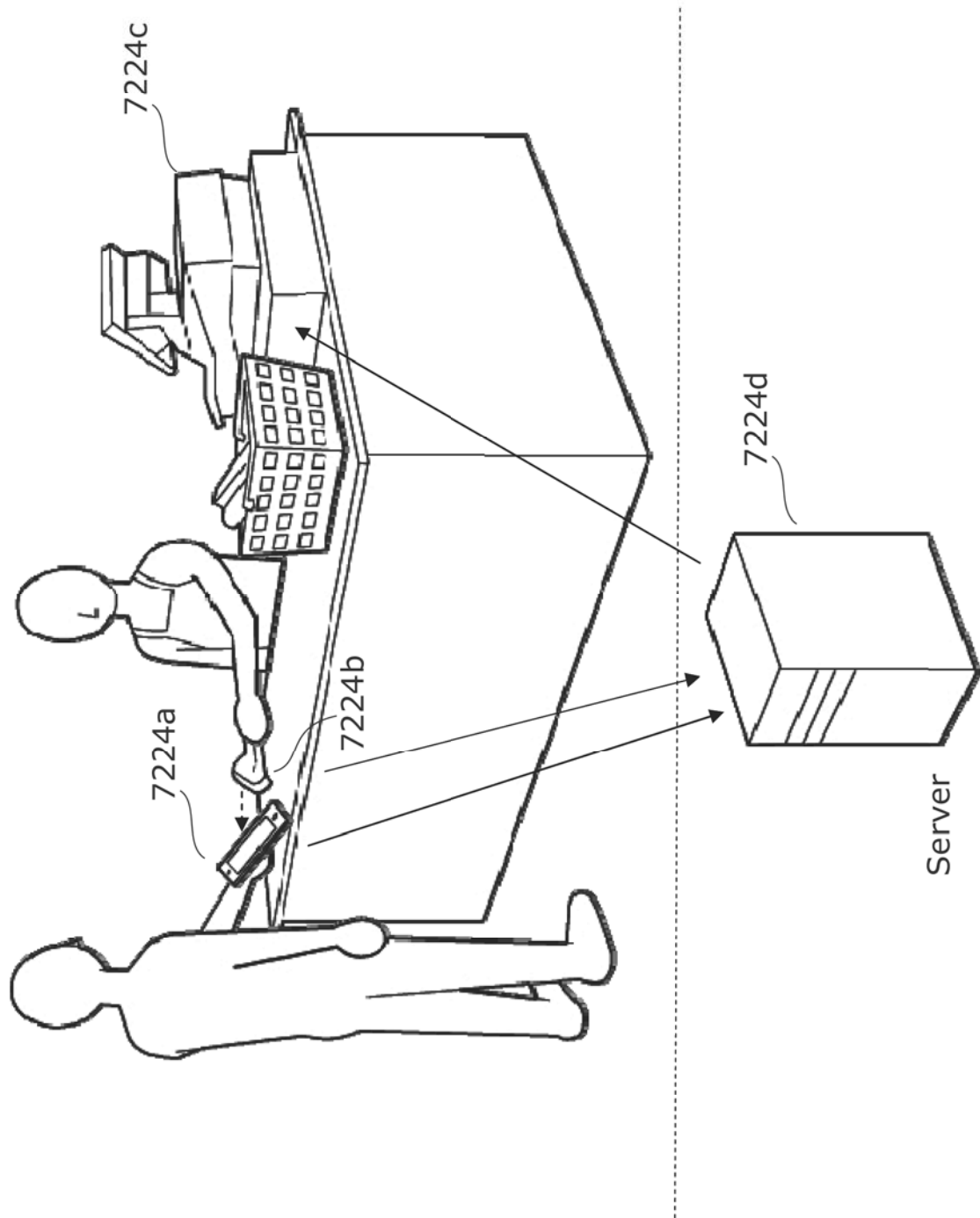


FIG. 308

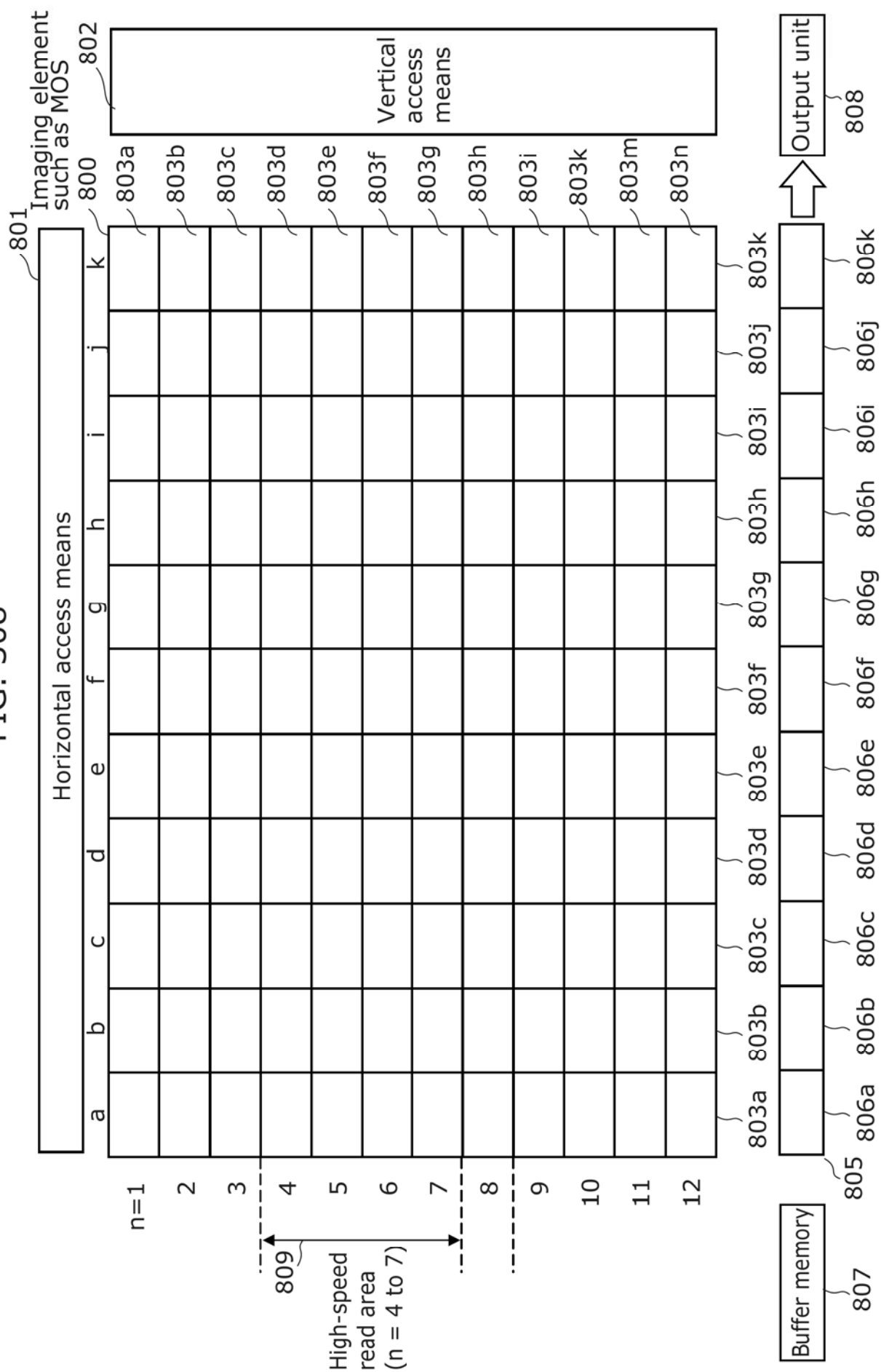


FIG. 309

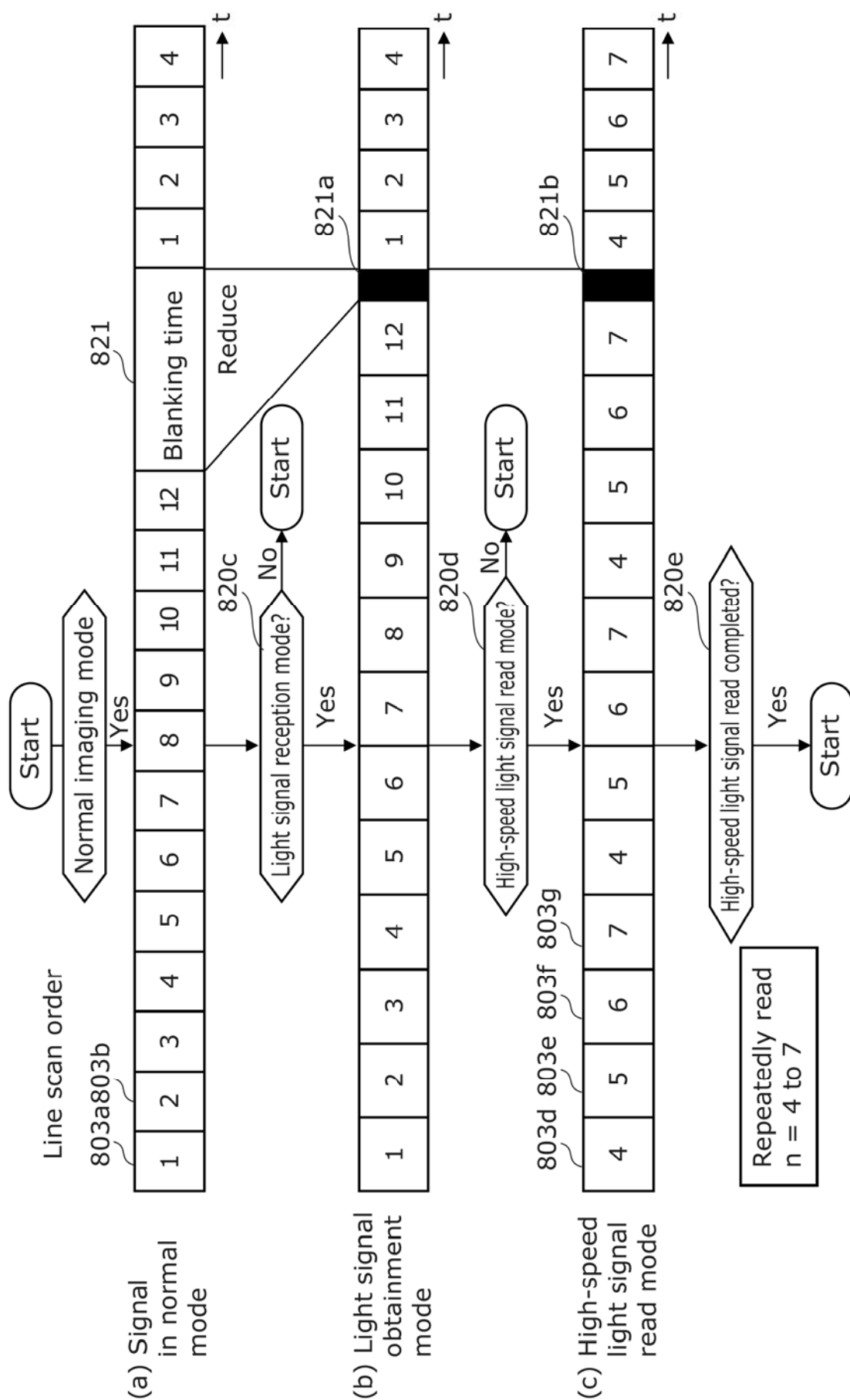


FIG. 310

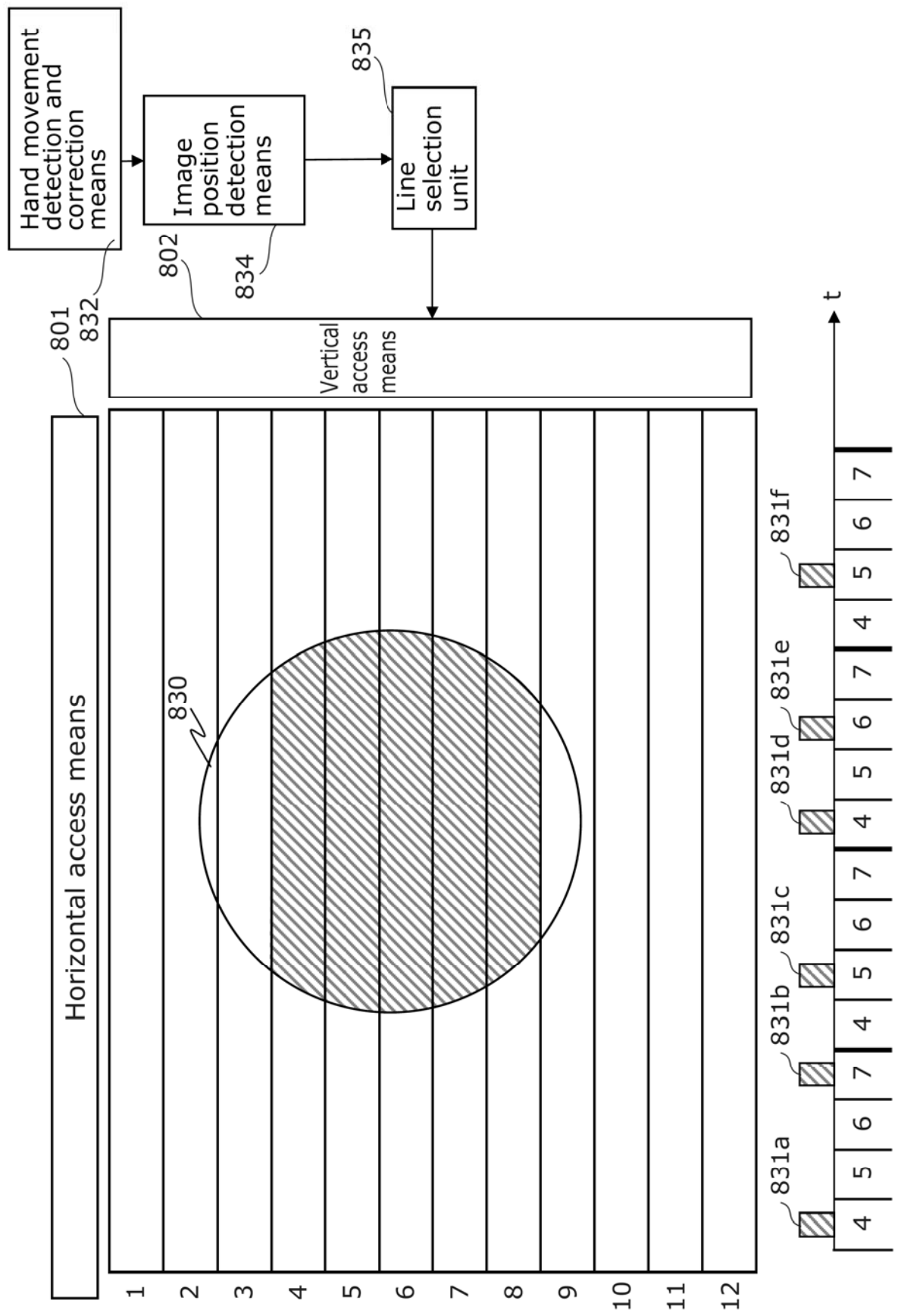


FIG. 311A

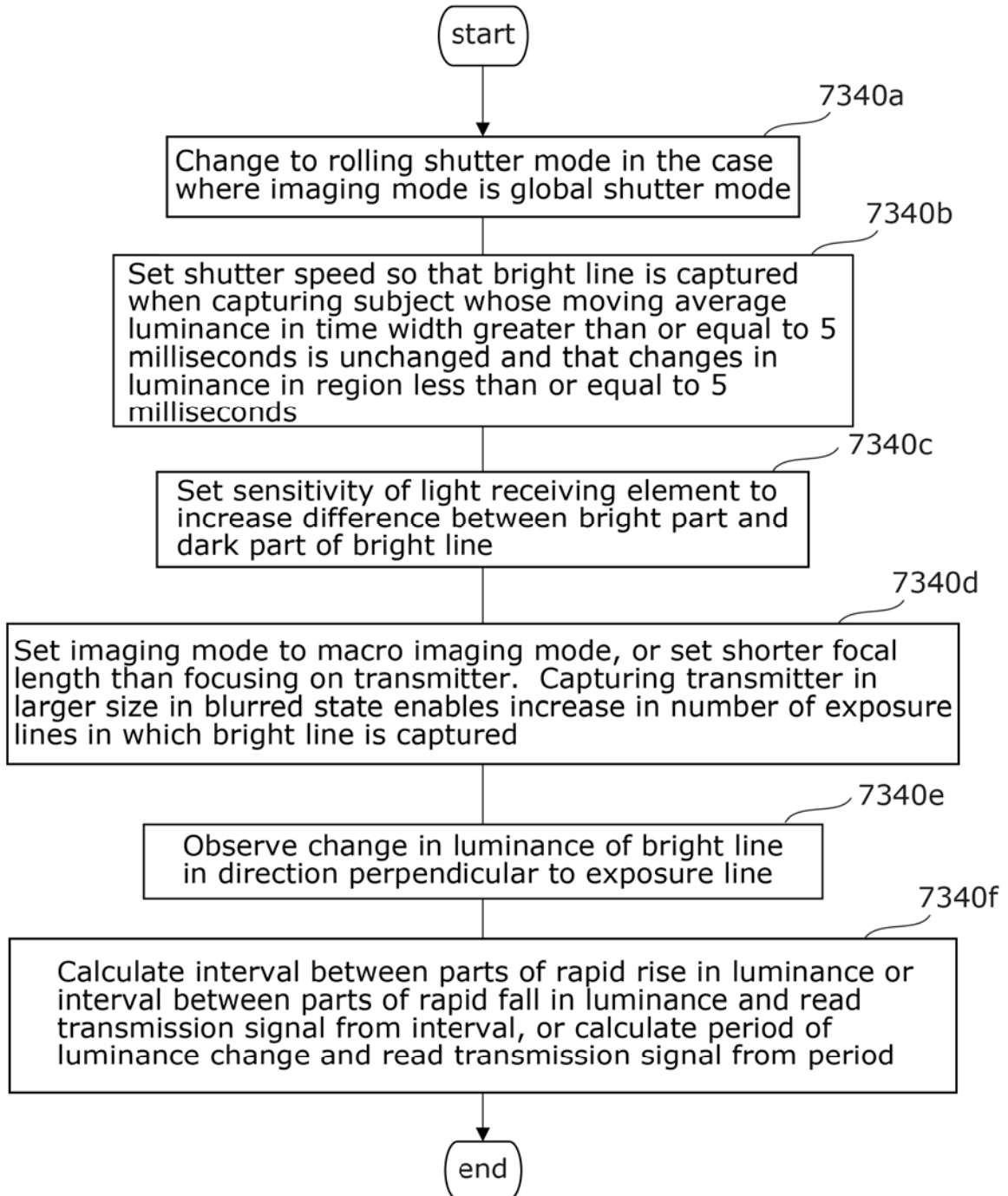




FIG. 311B

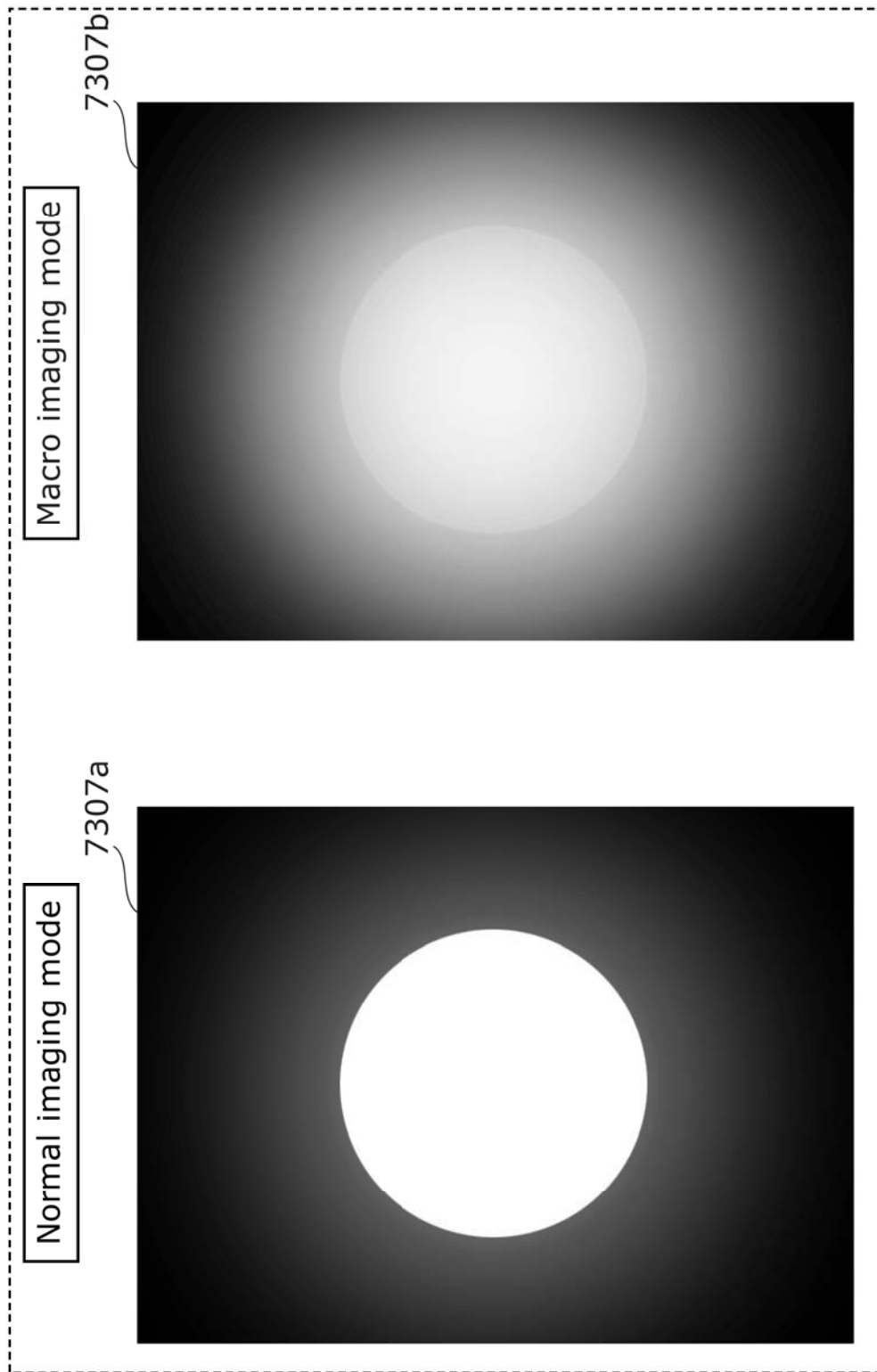


FIG. 312

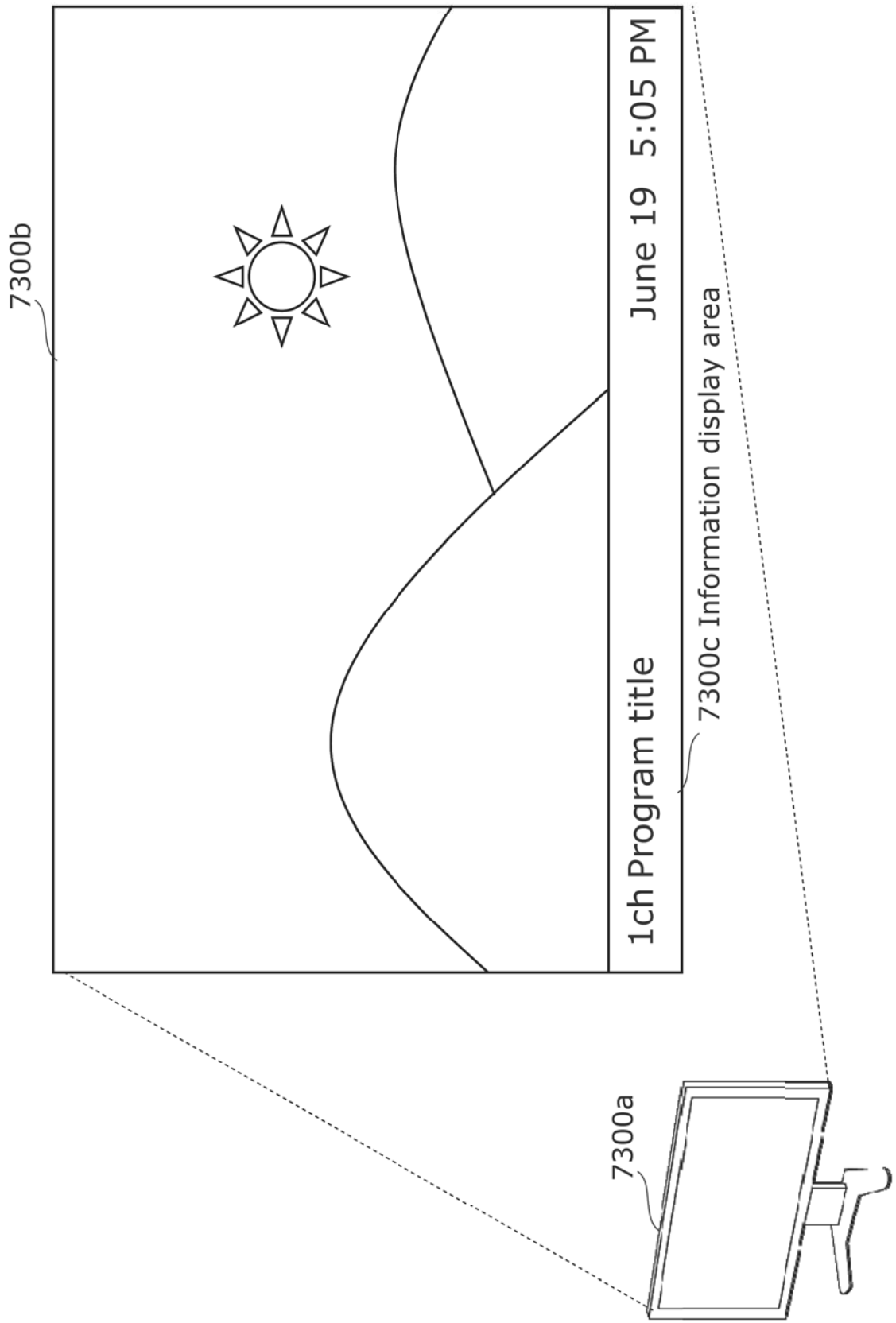


FIG. 313

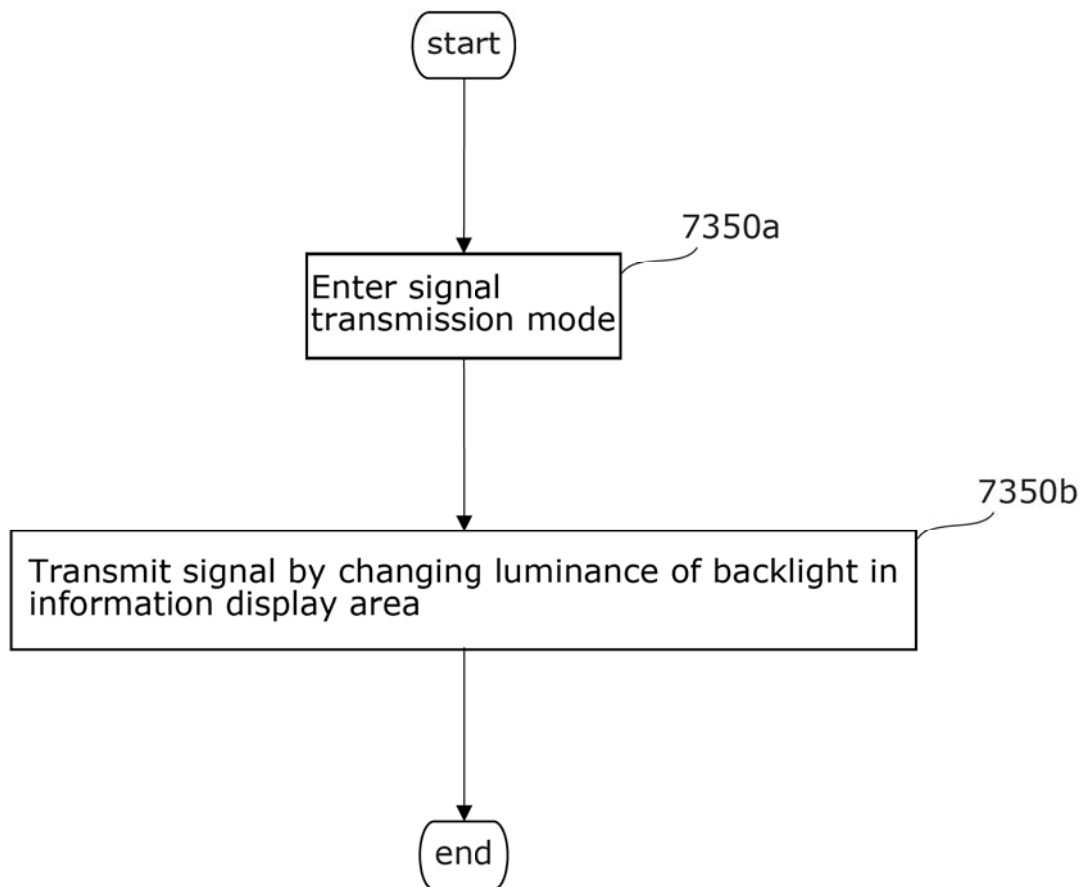


FIG. 314

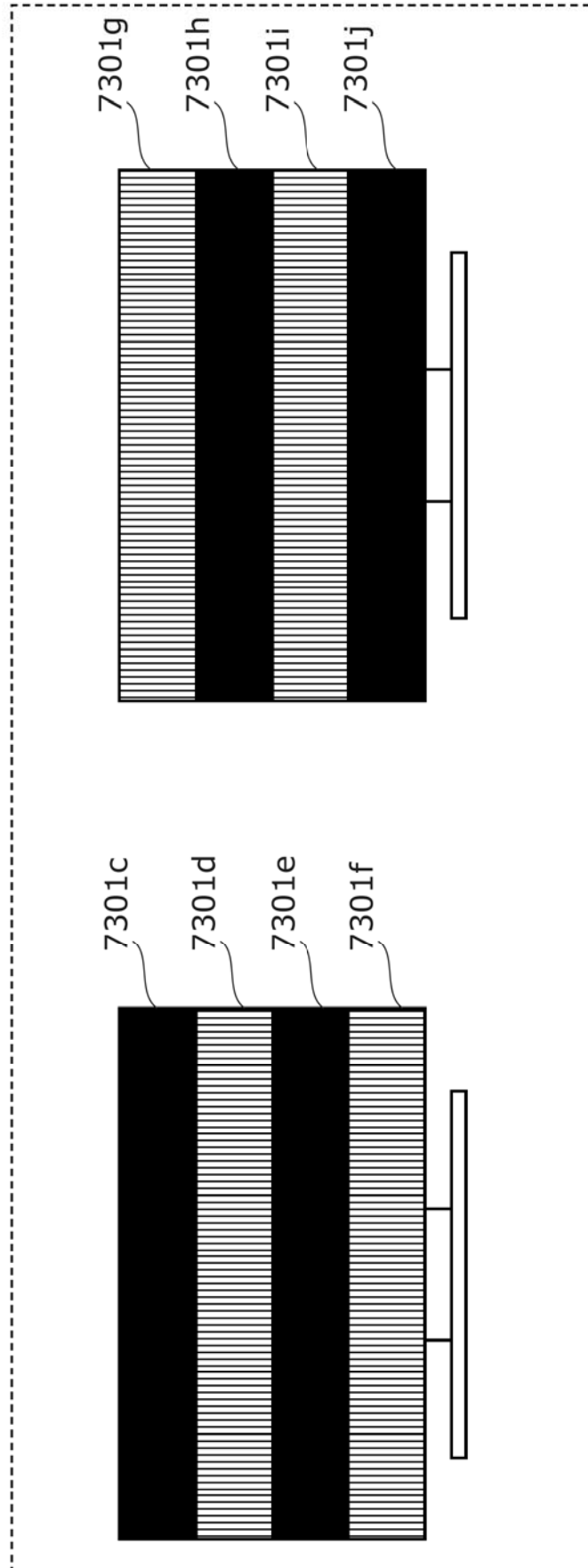


FIG. 315

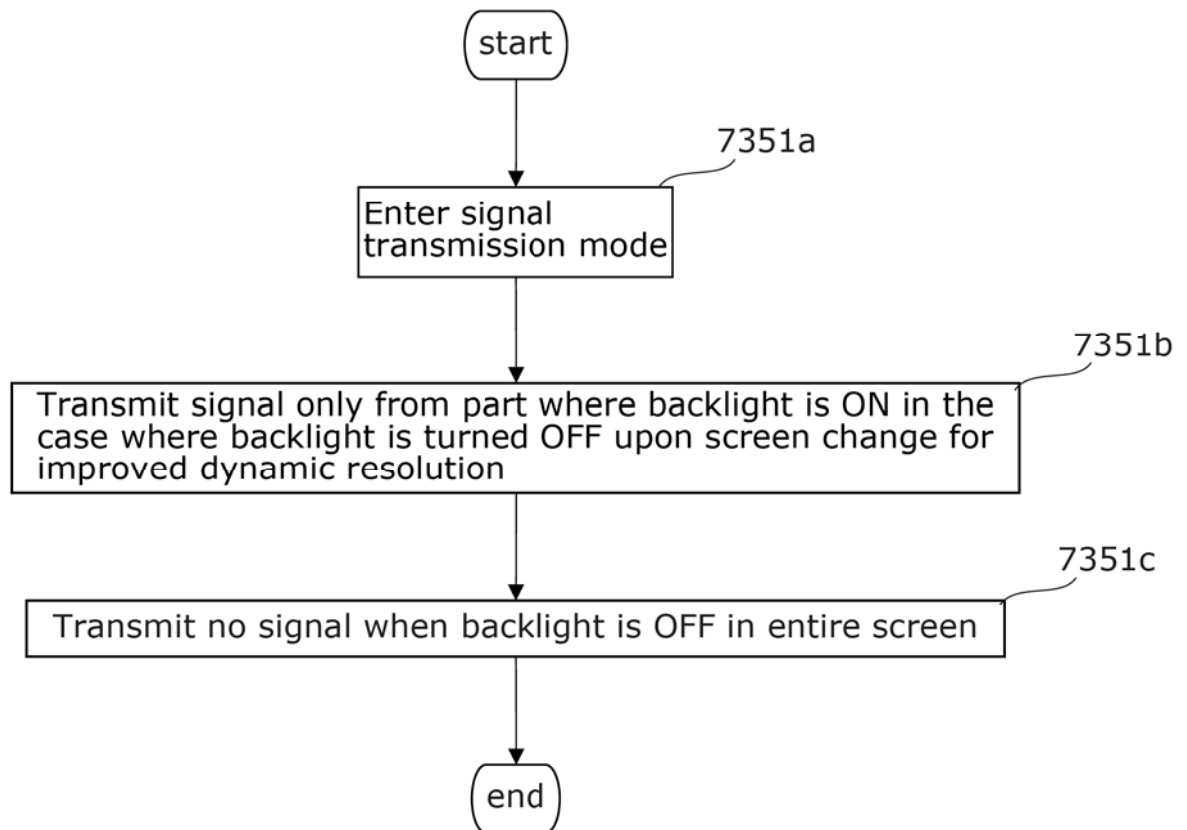


FIG. 316

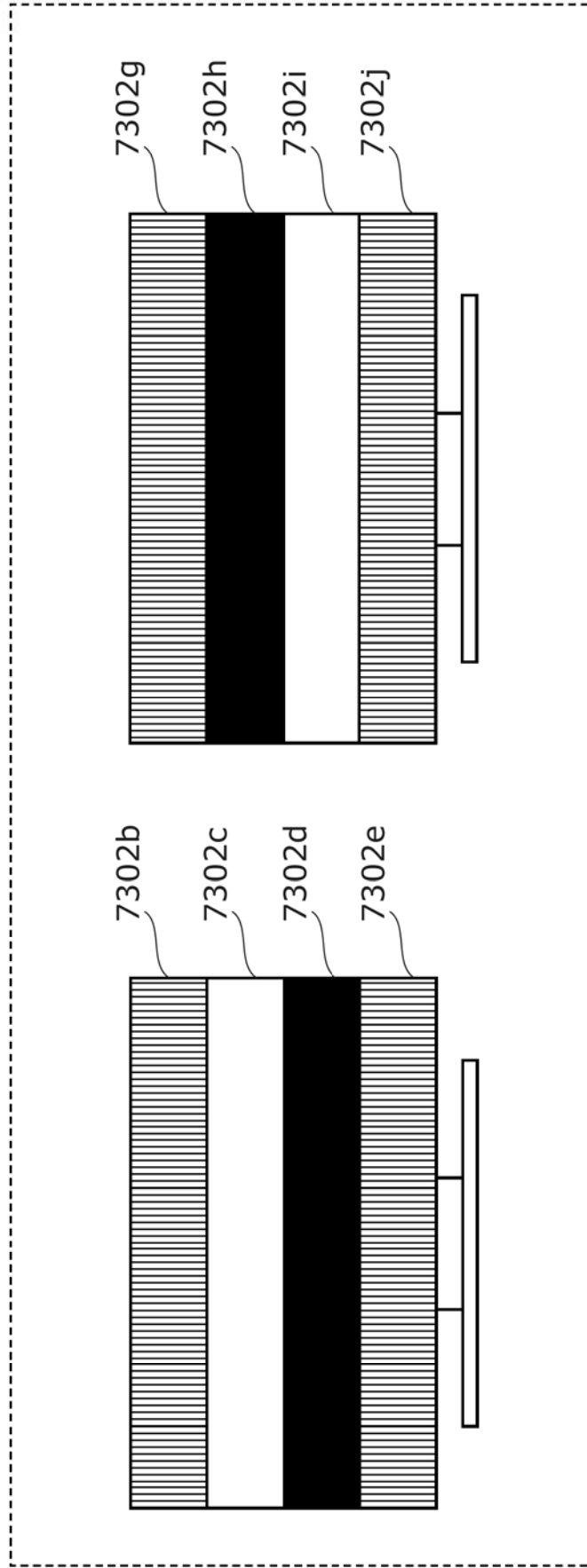


FIG. 317

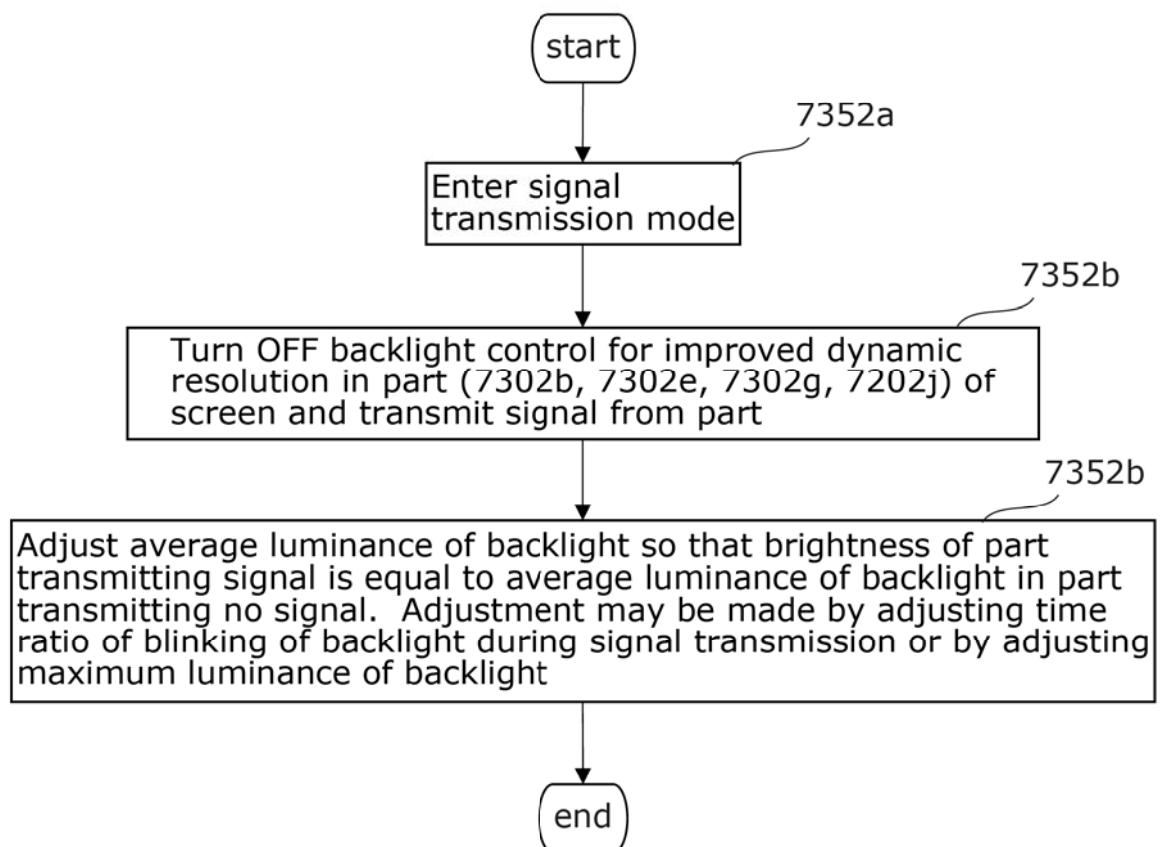


FIG. 318

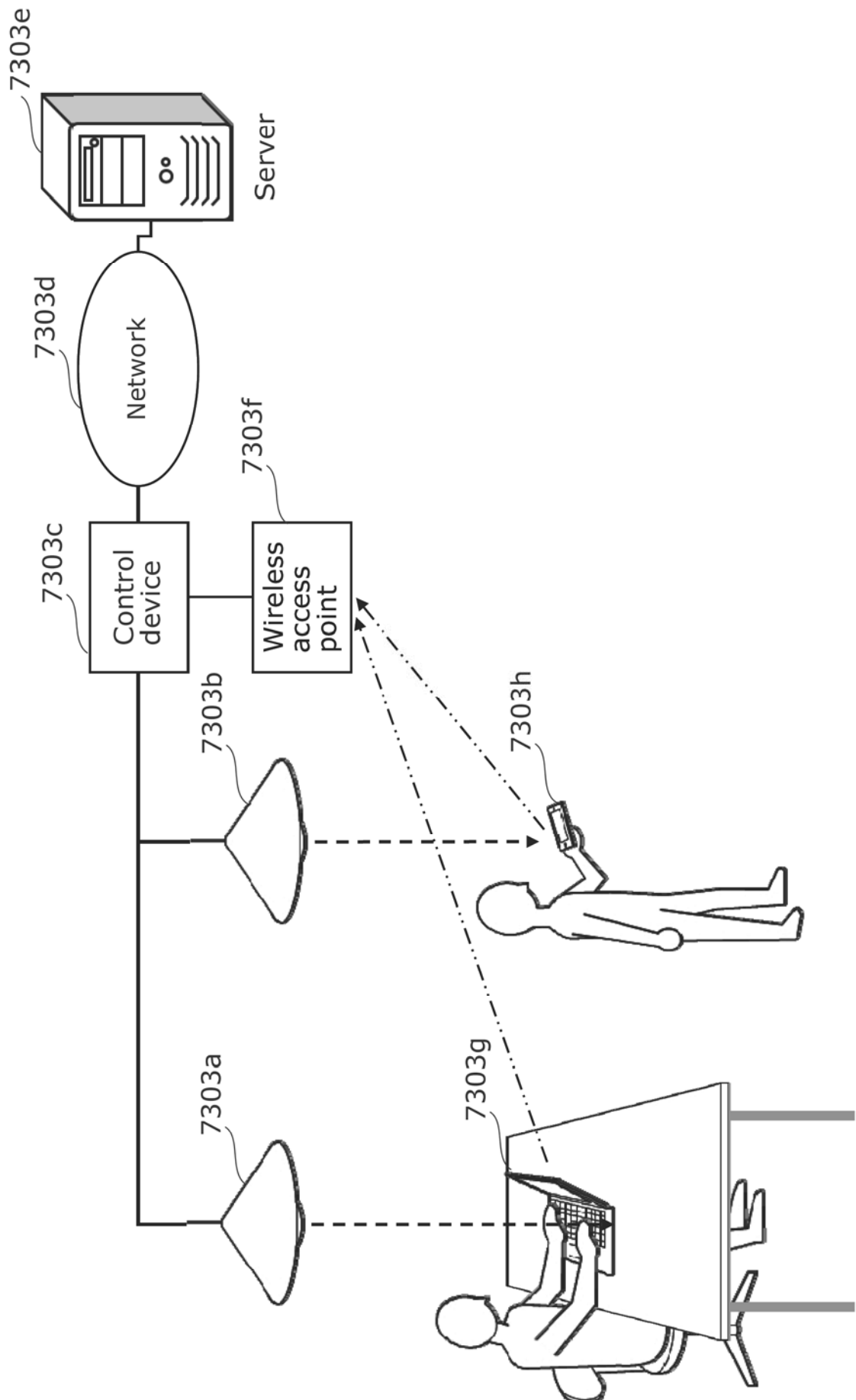




FIG. 319

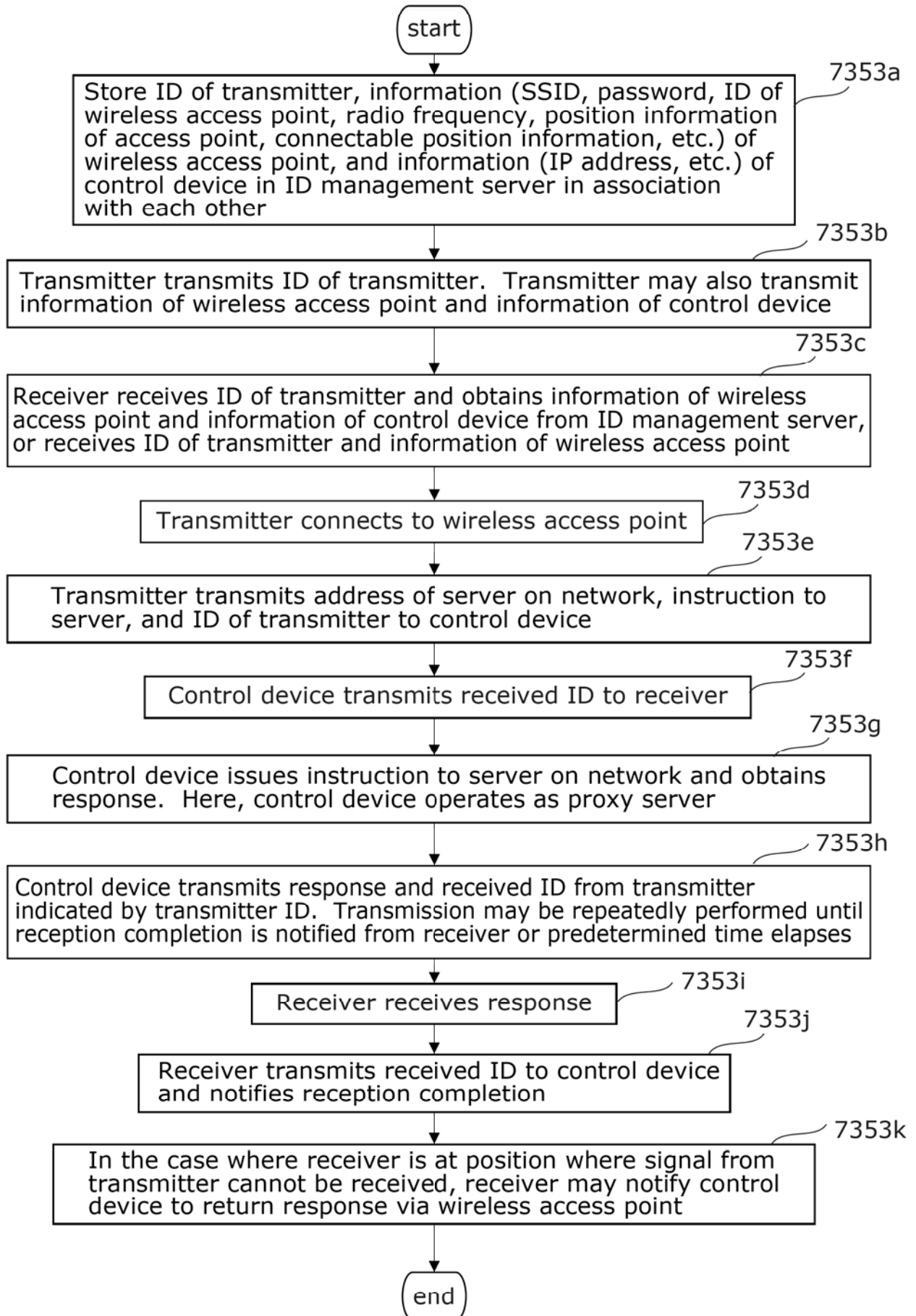


FIG. 320

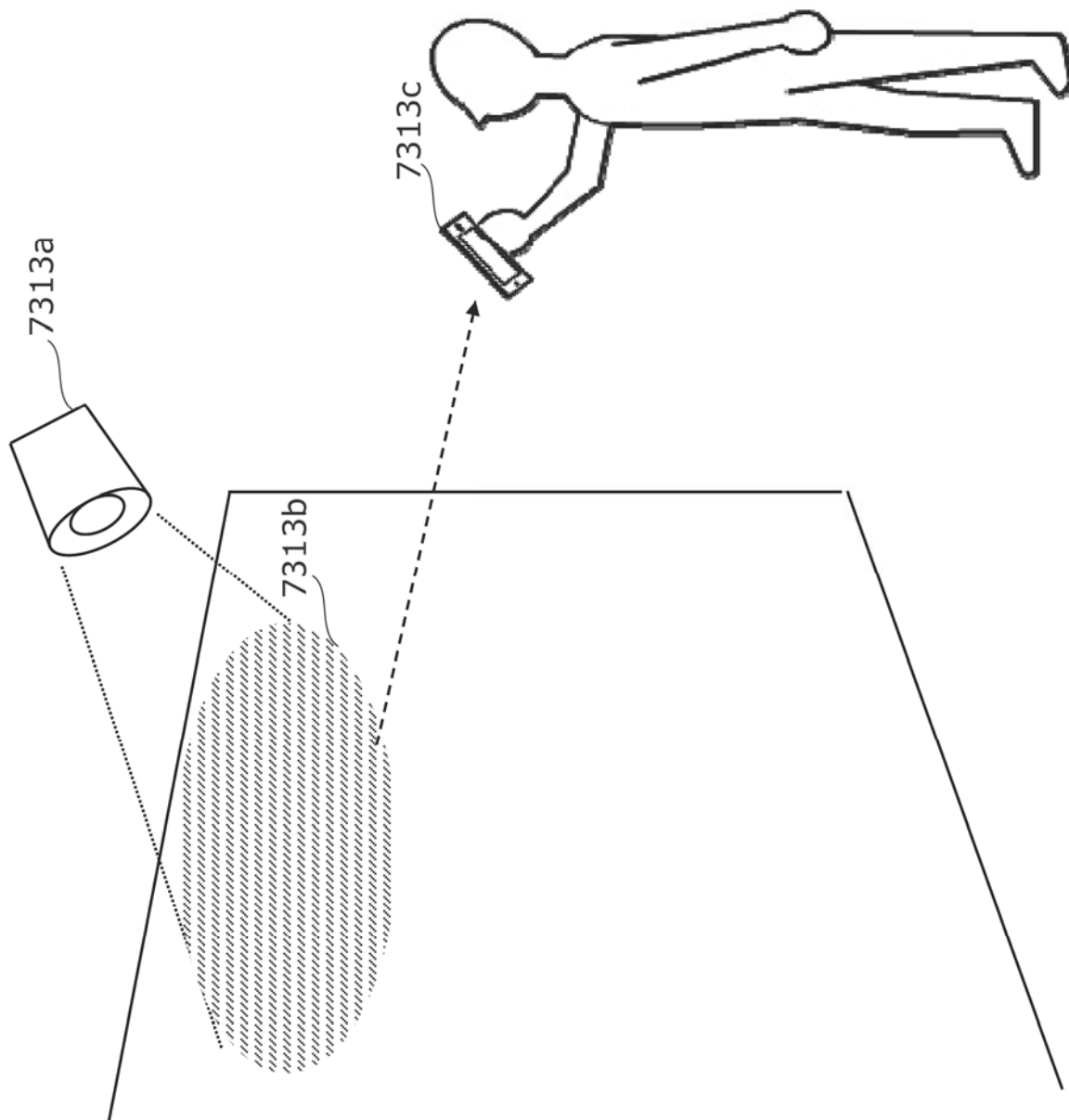


FIG. 321

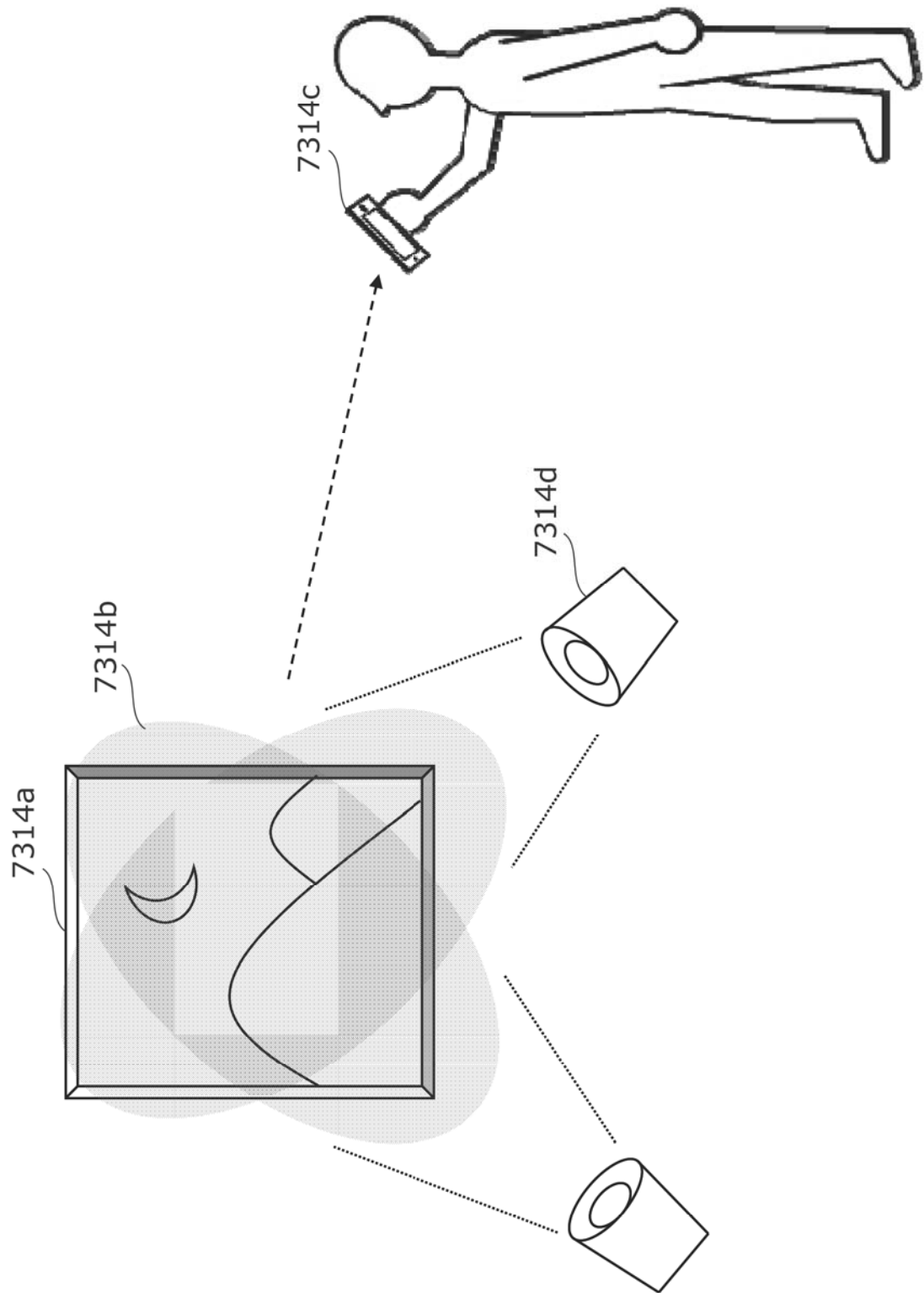


FIG. 322

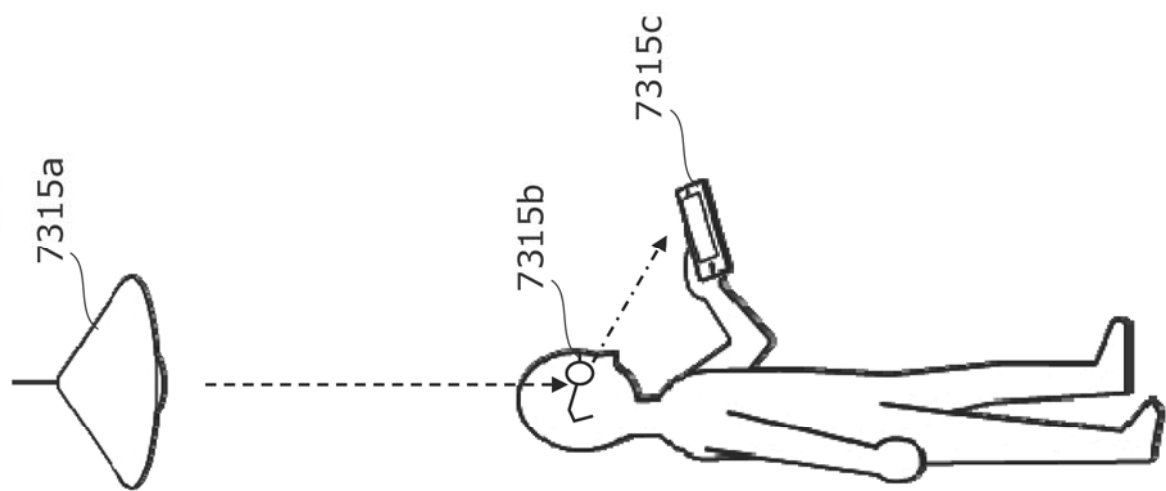


FIG. 323A

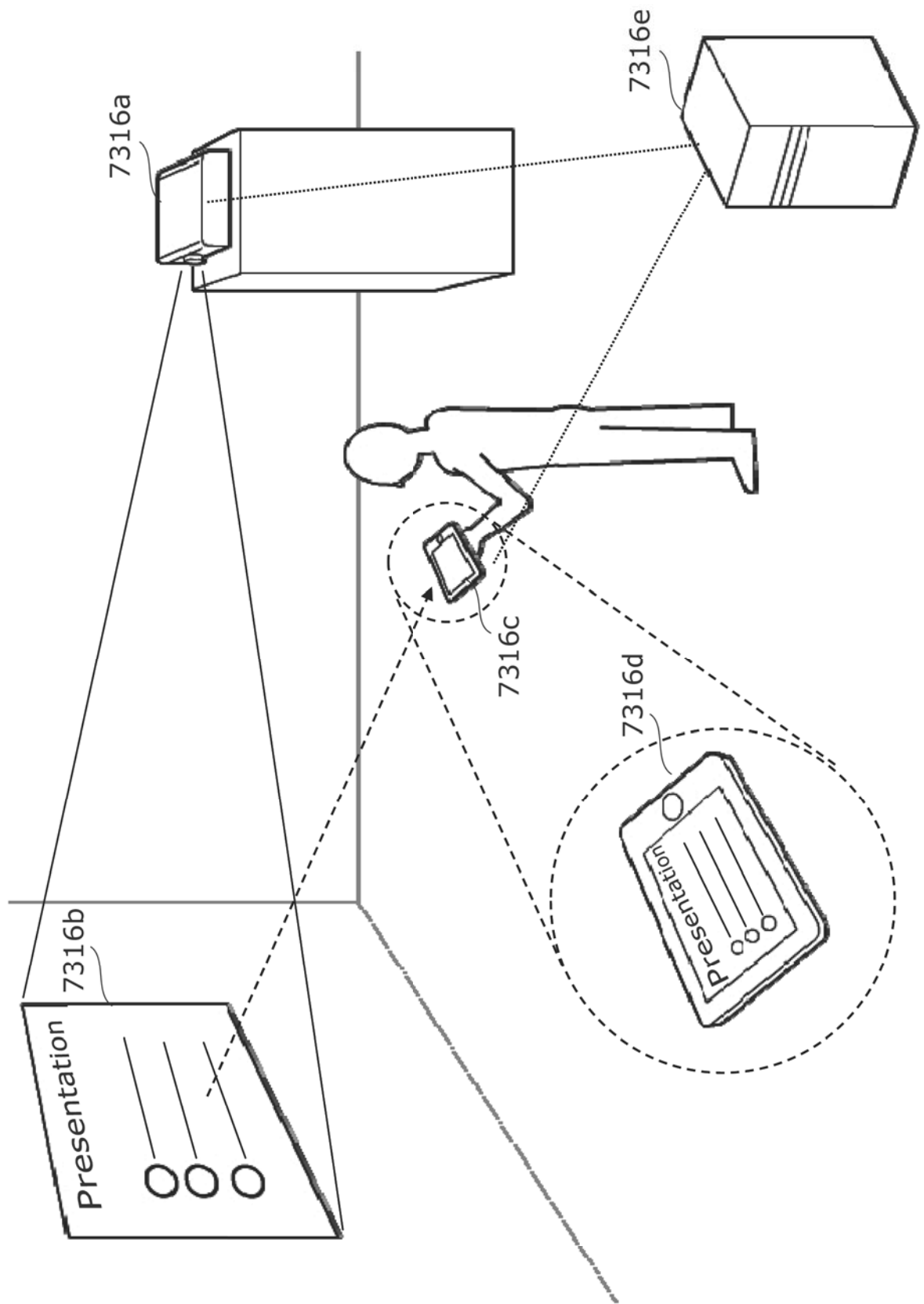


FIG. 323B

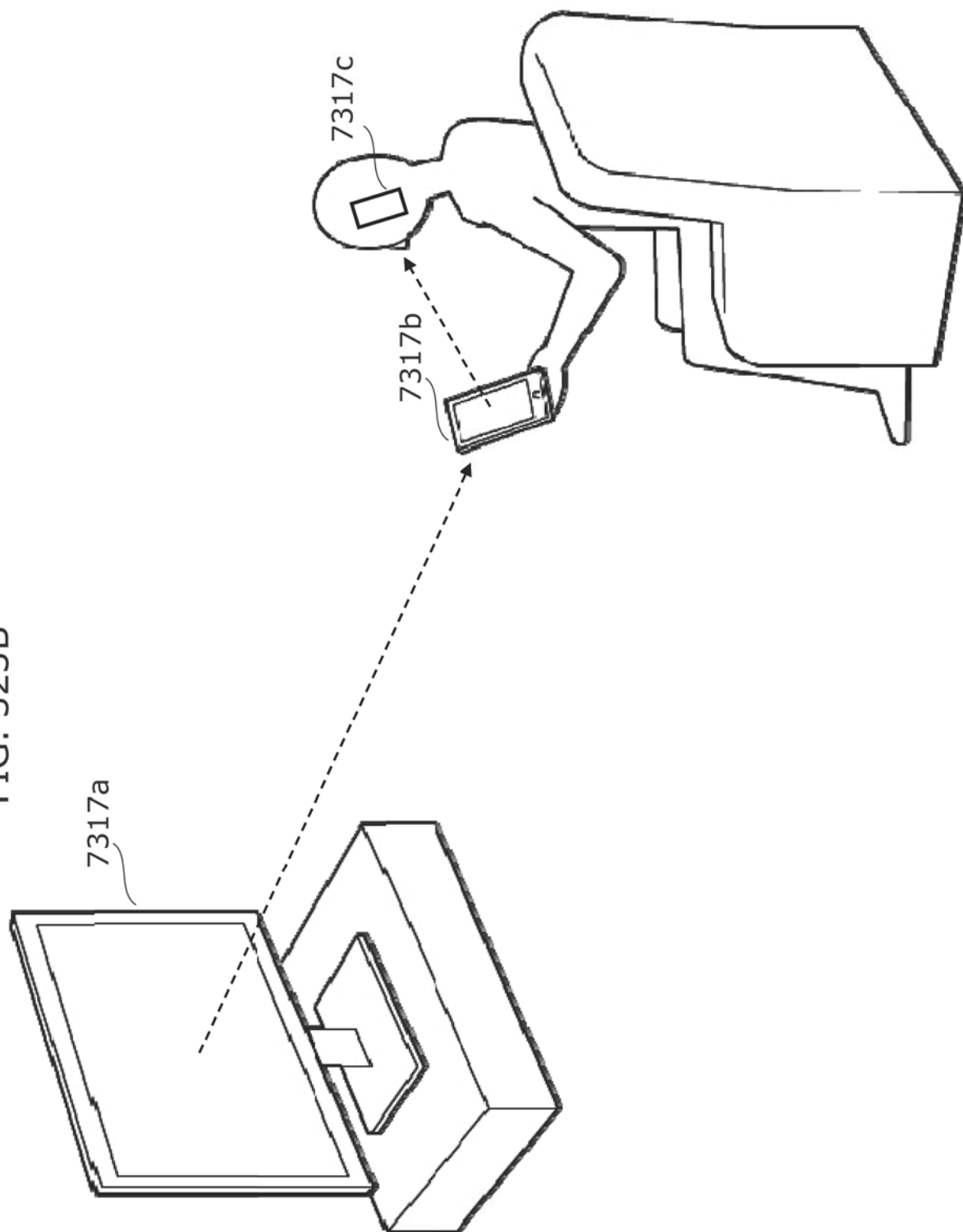


FIG. 323C

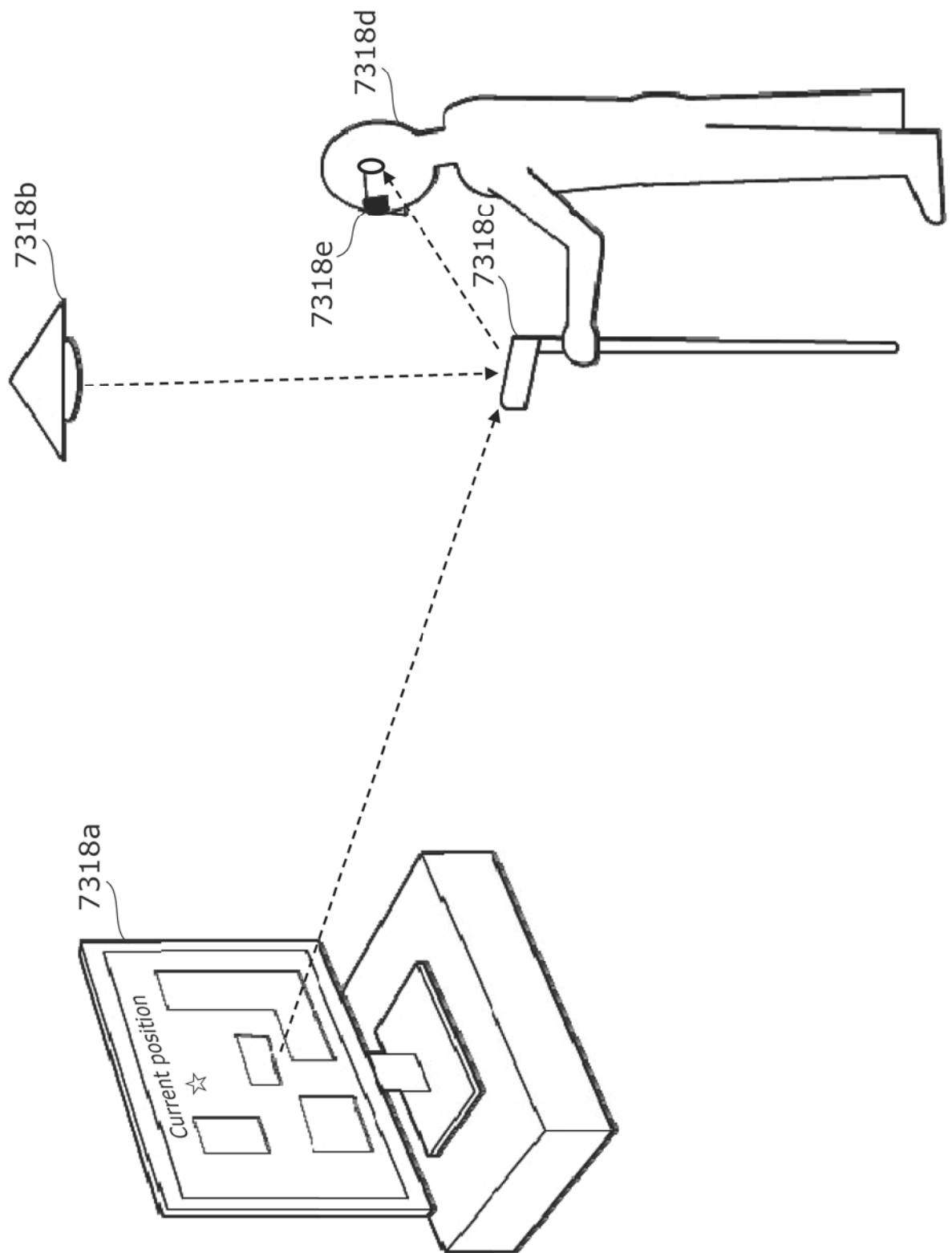


FIG. 323D

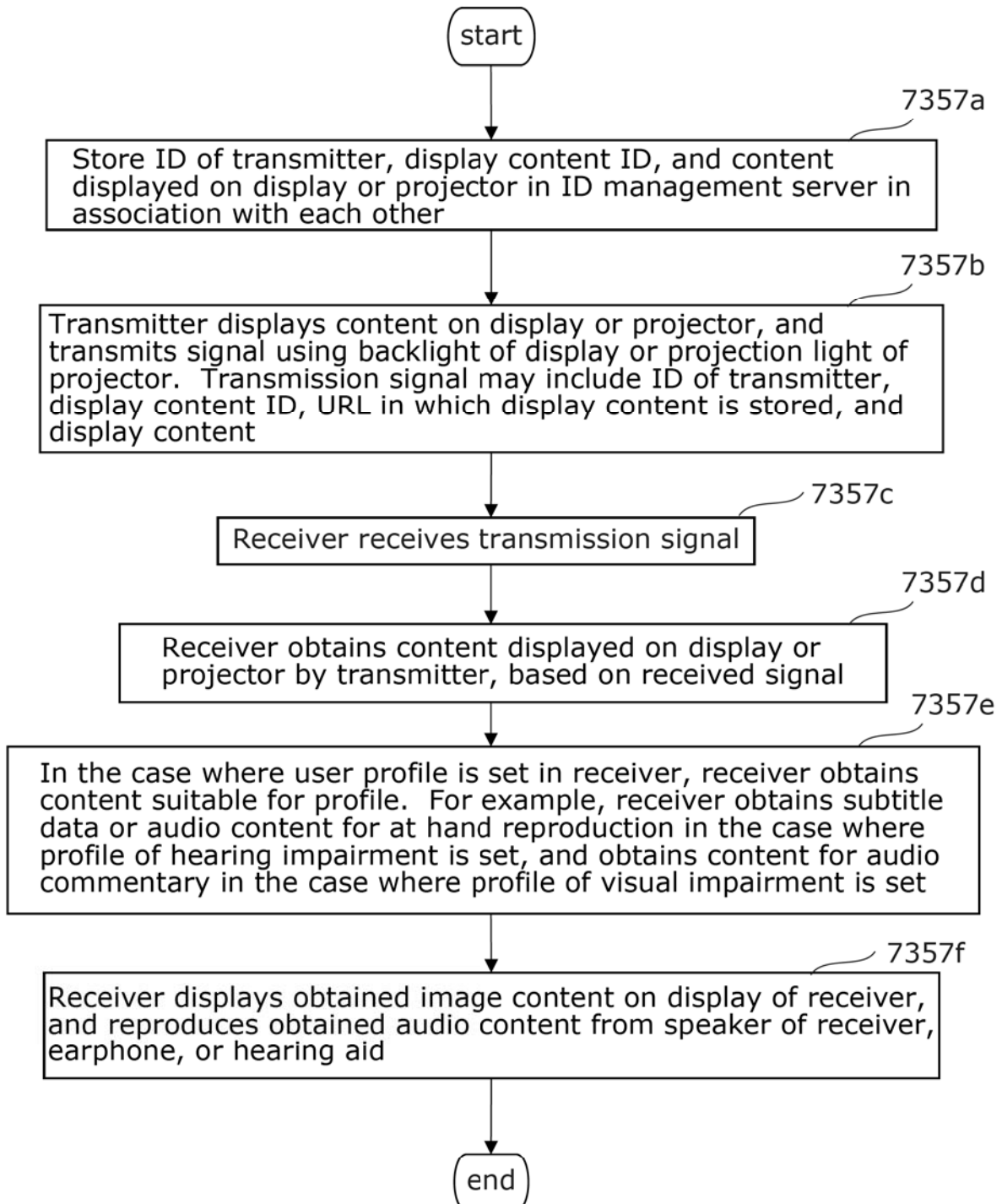




FIG. 324

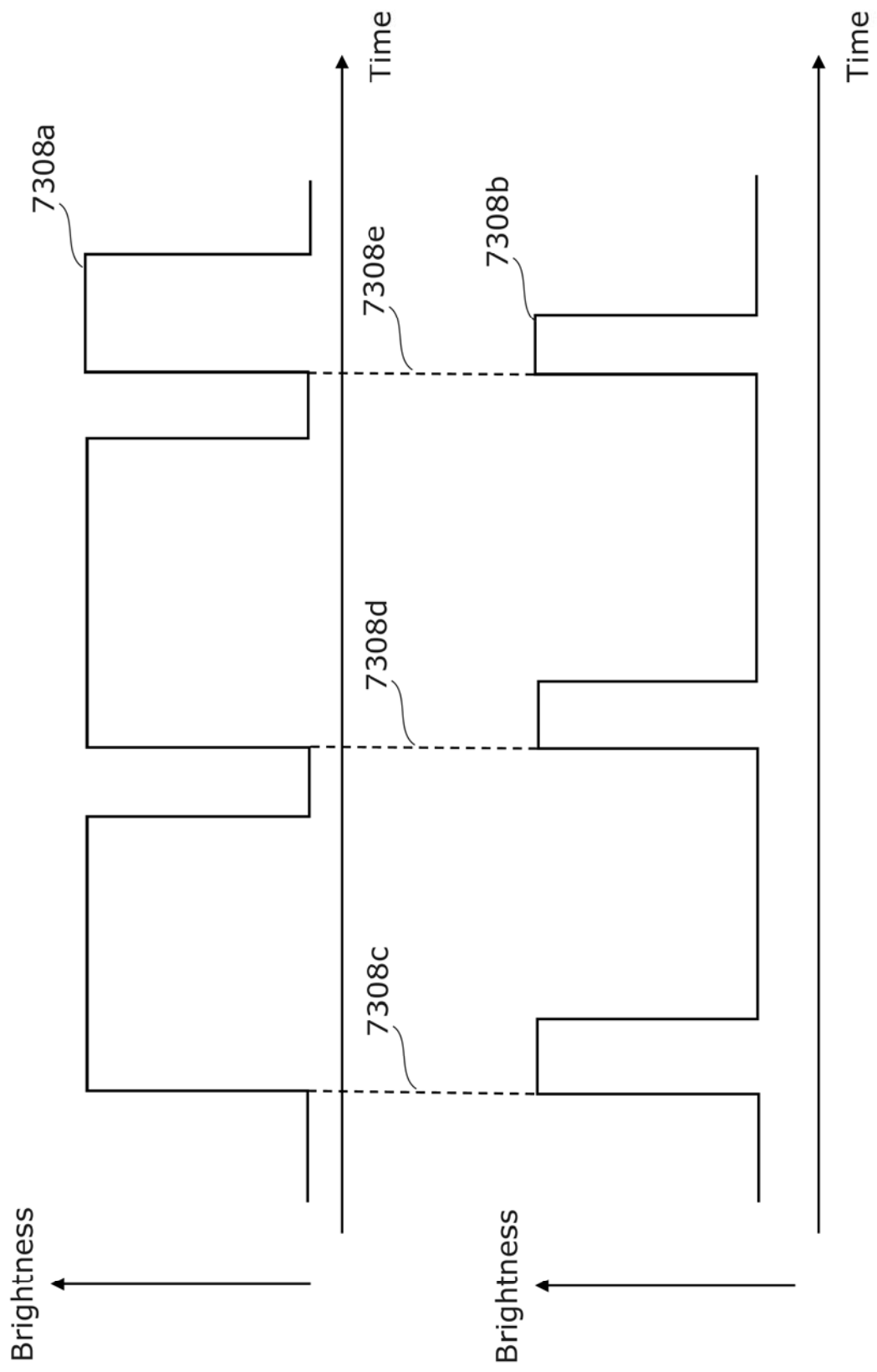


FIG. 325

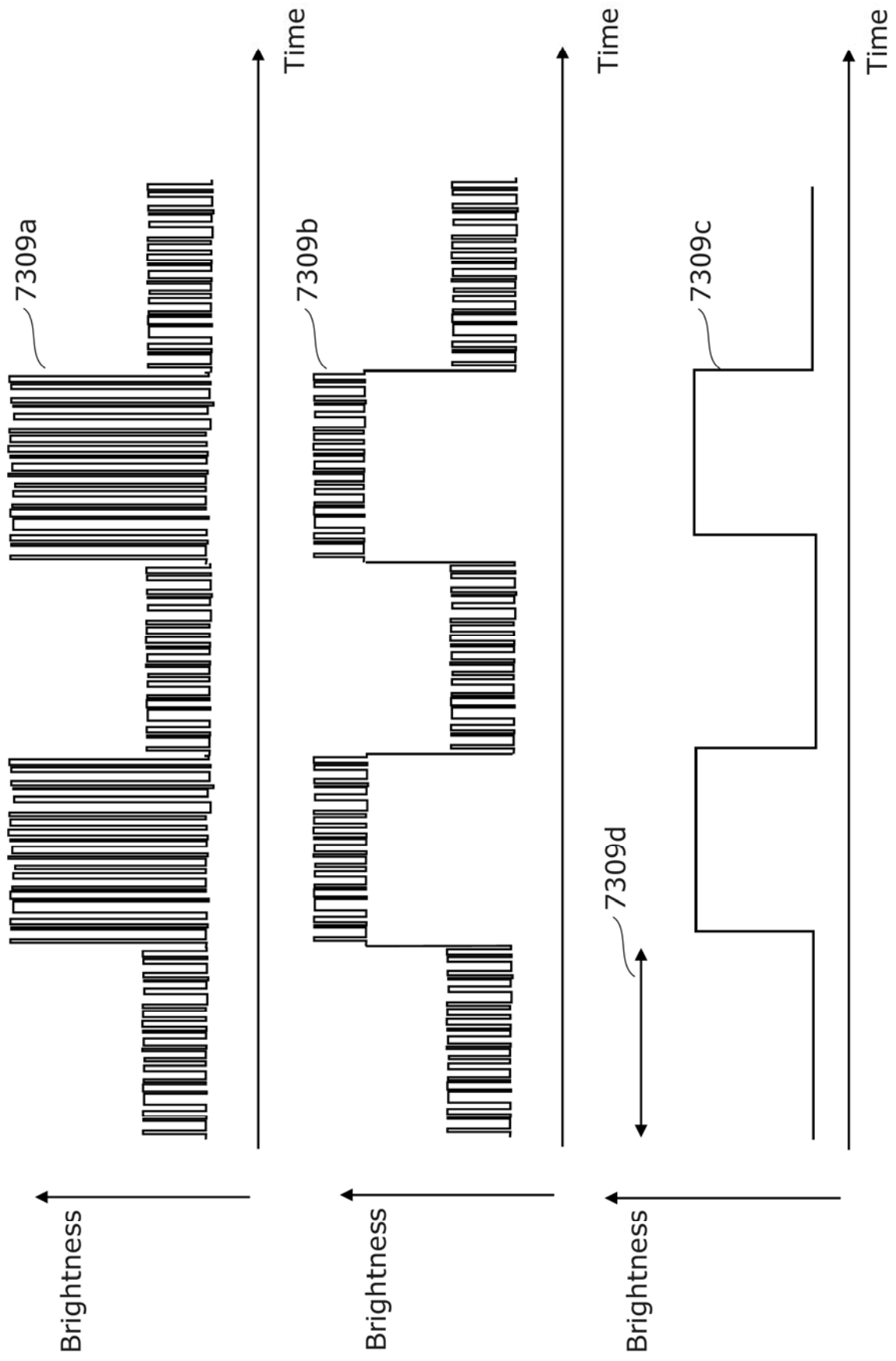


FIG. 326

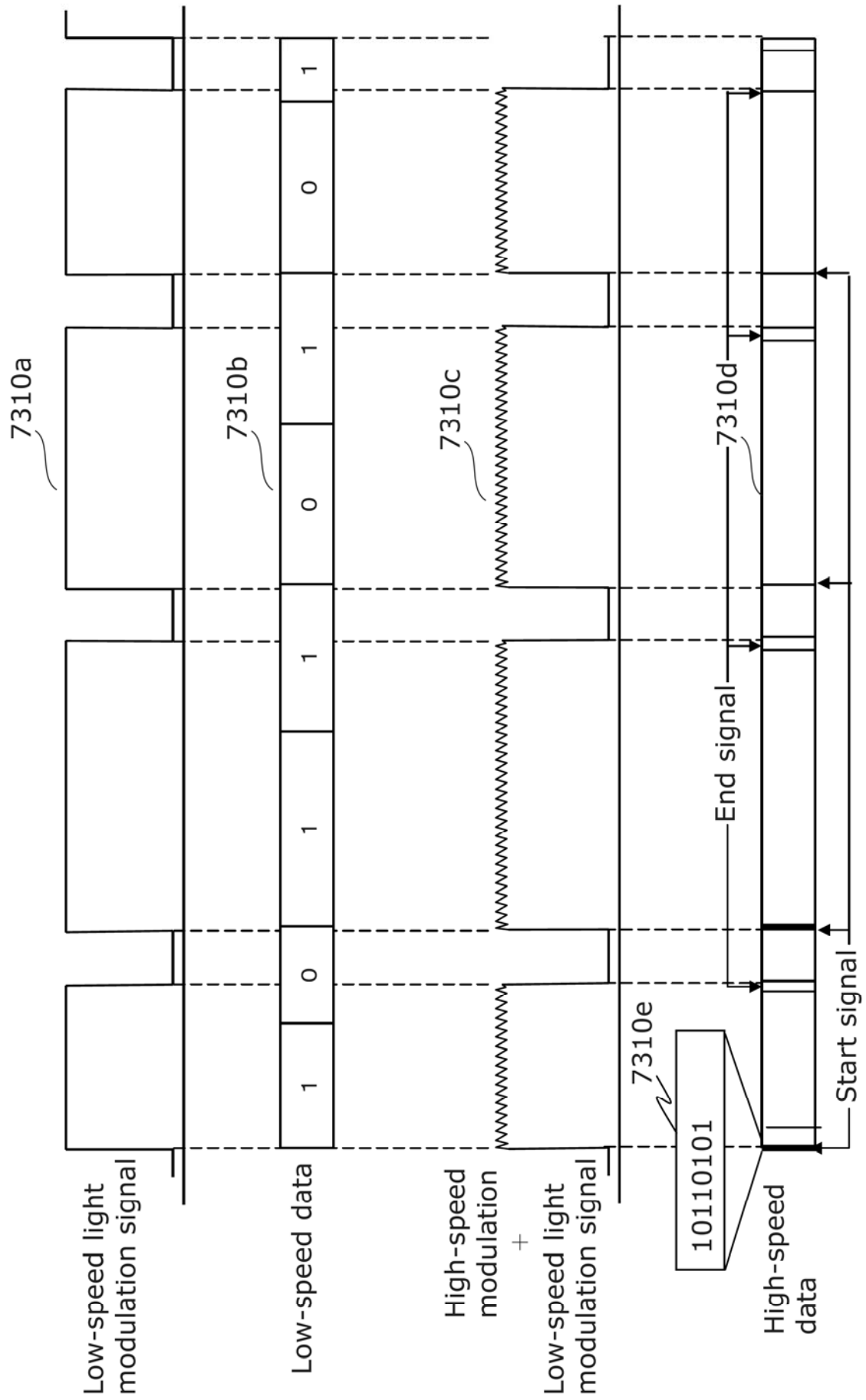


FIG. 327A

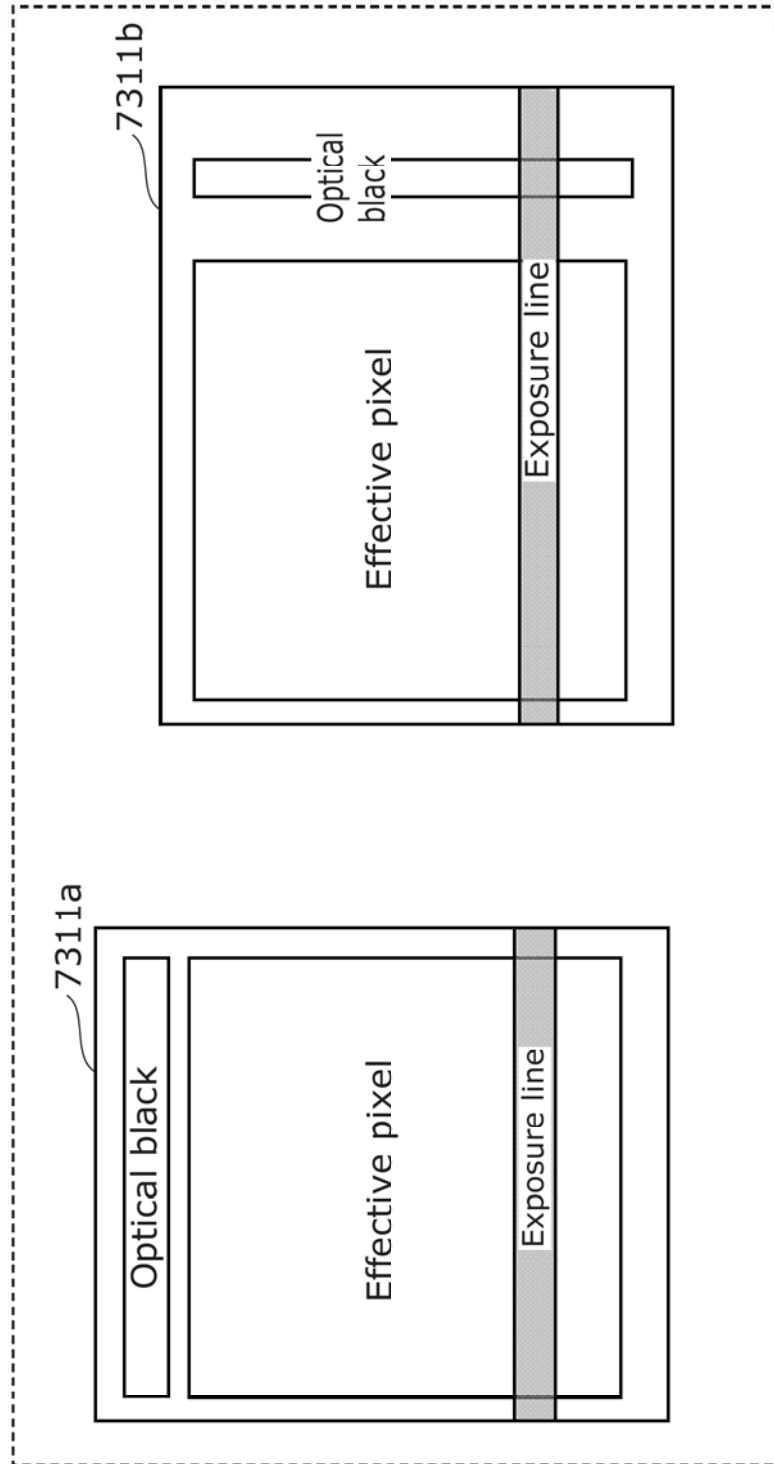


FIG. 327B

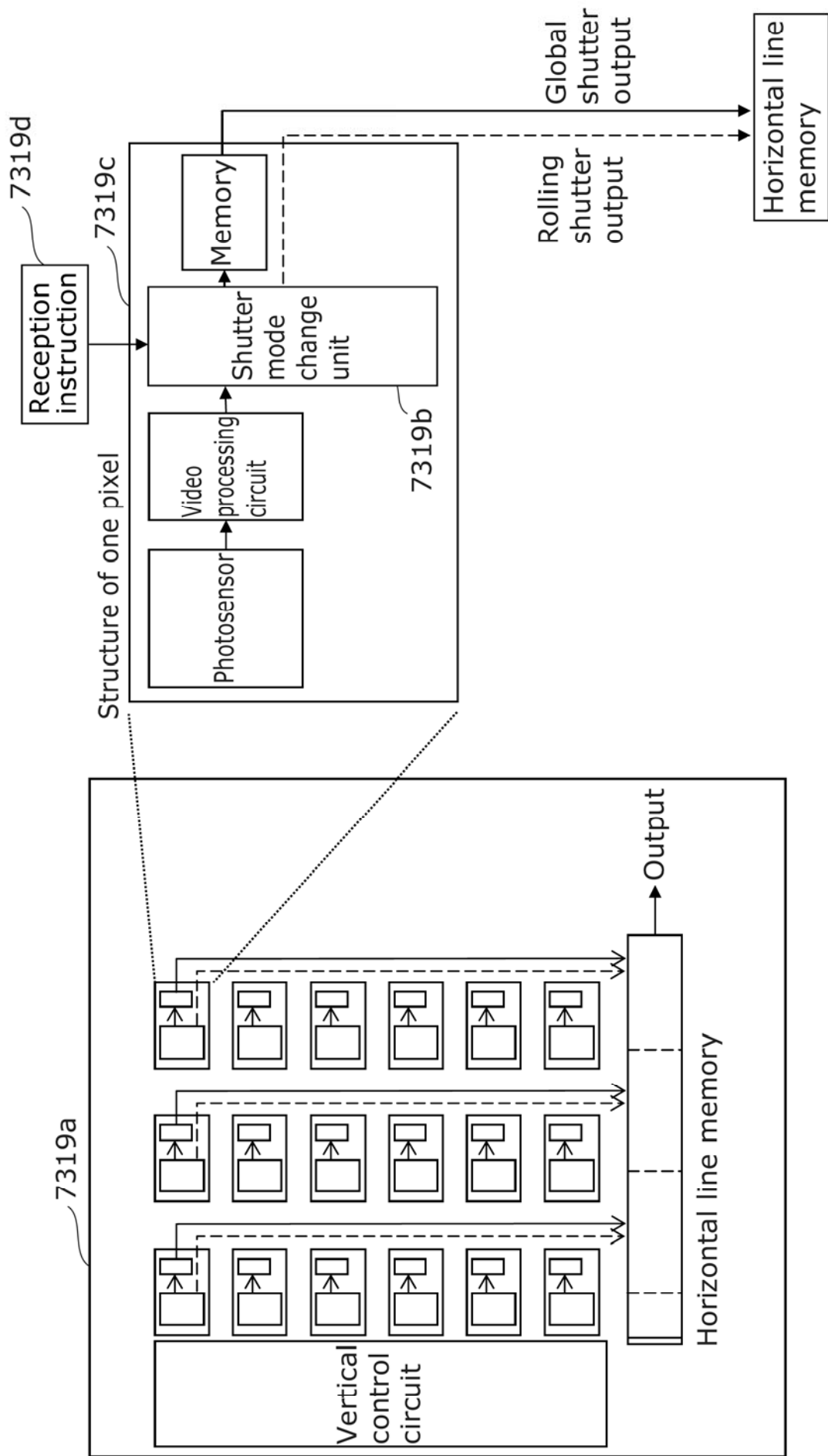


FIG. 327C

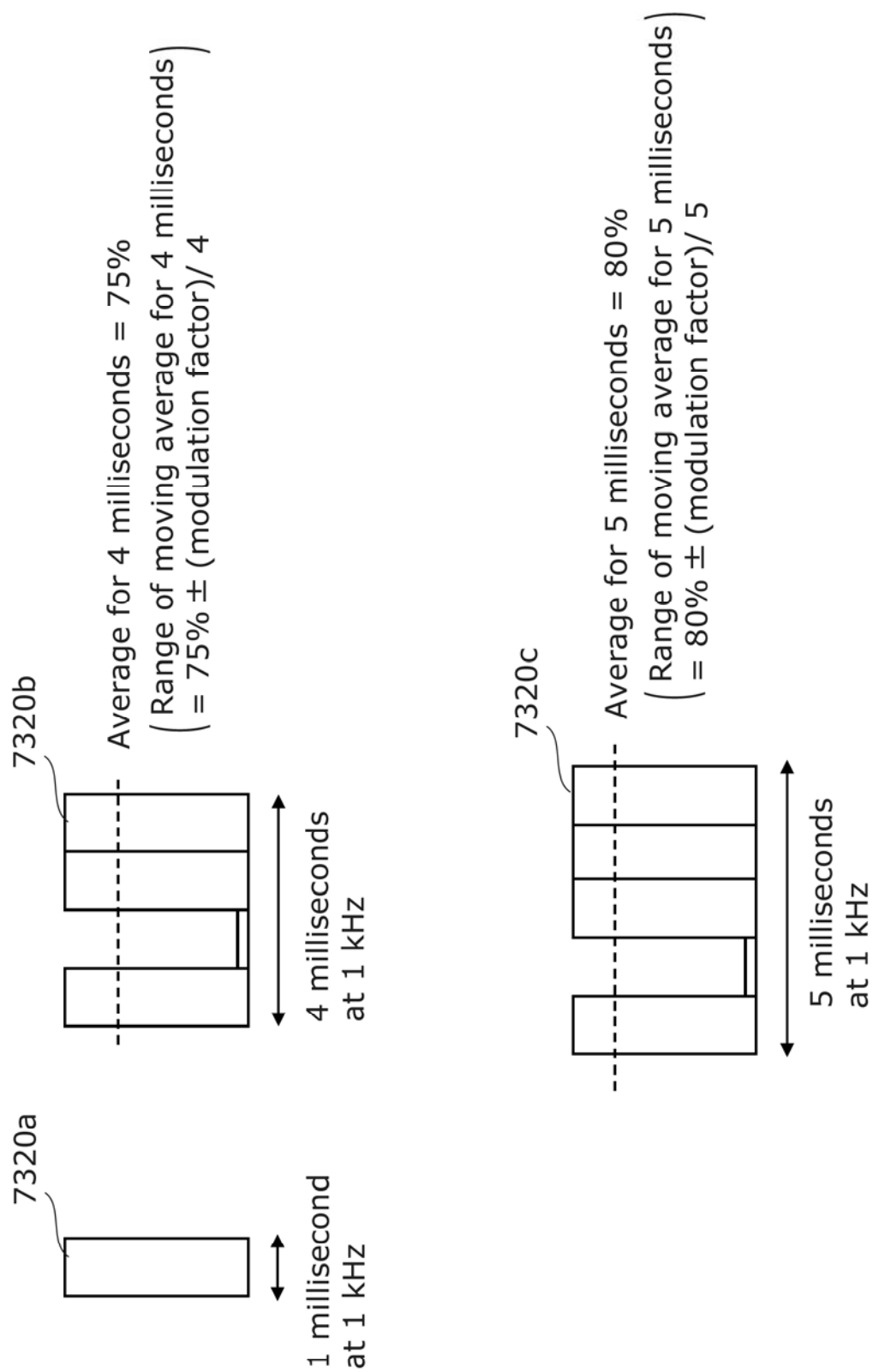


FIG. 327D

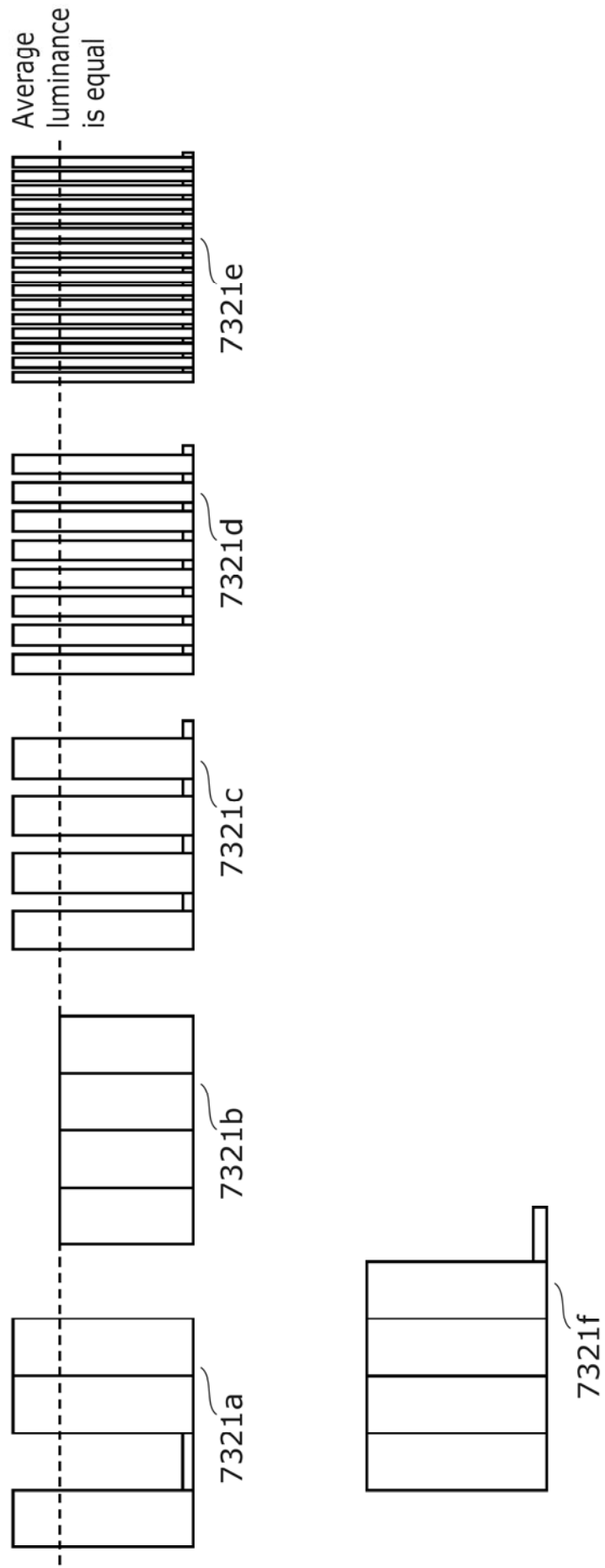


FIG. 328A

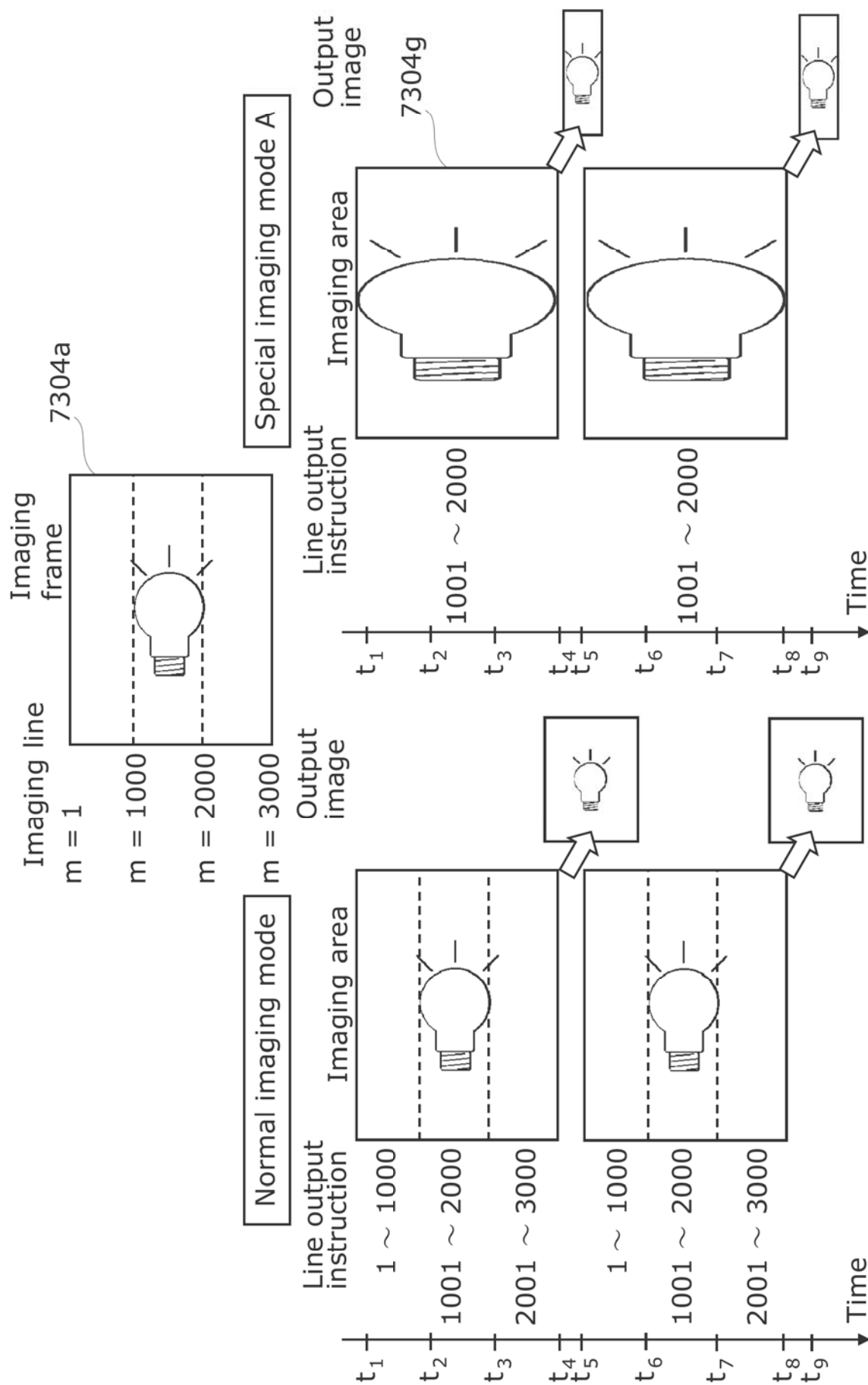




FIG. 328B

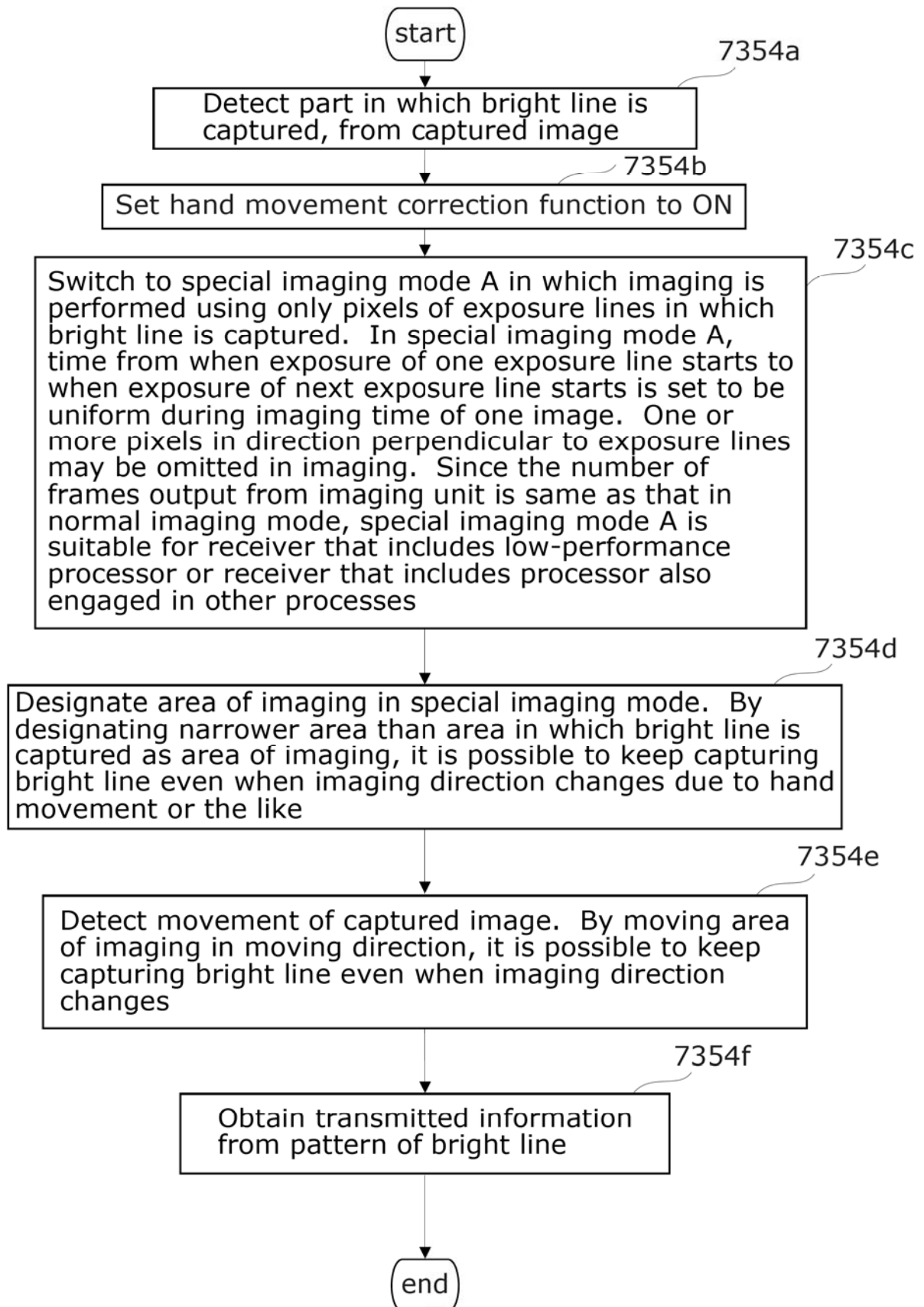


FIG. 329A

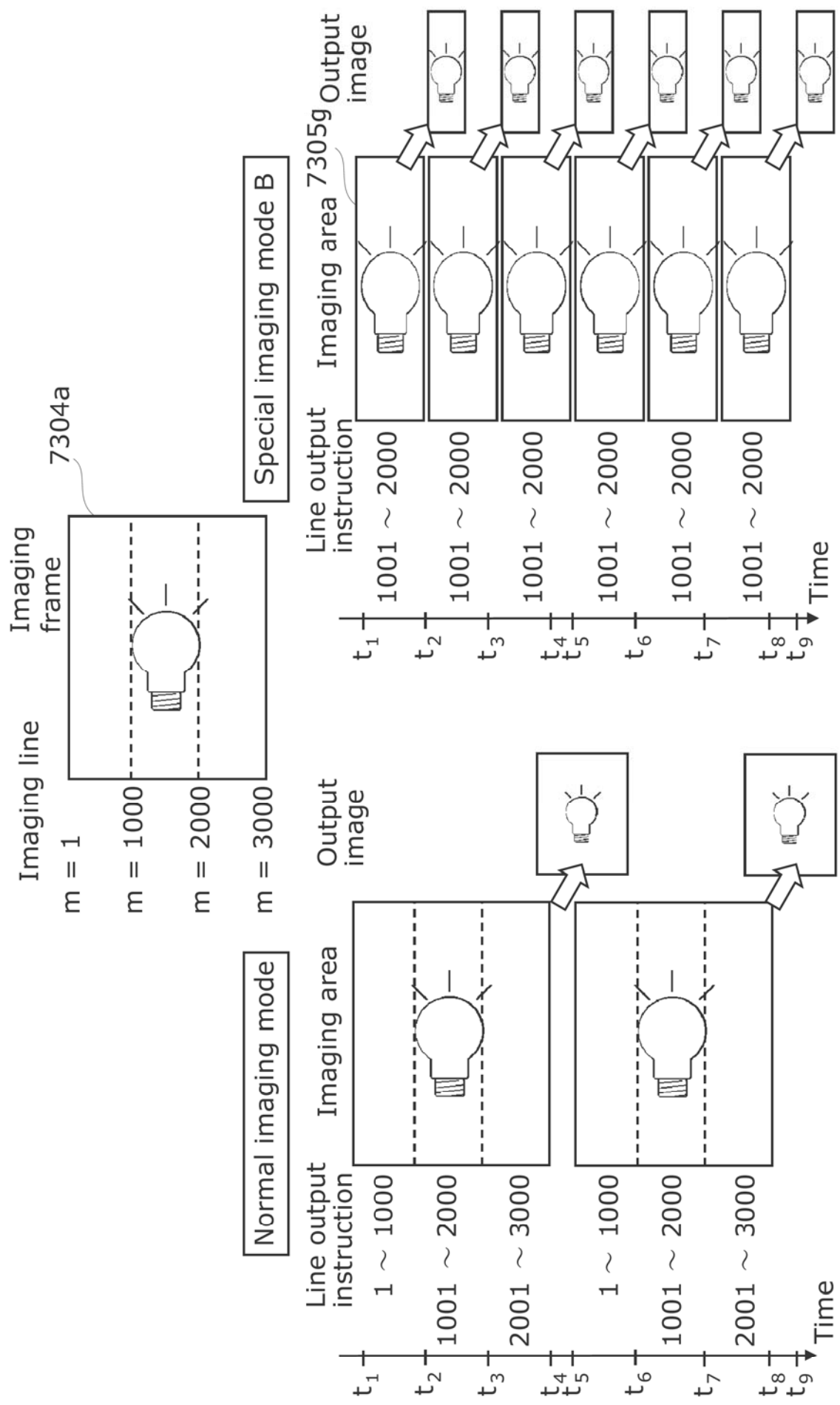


FIG. 329B

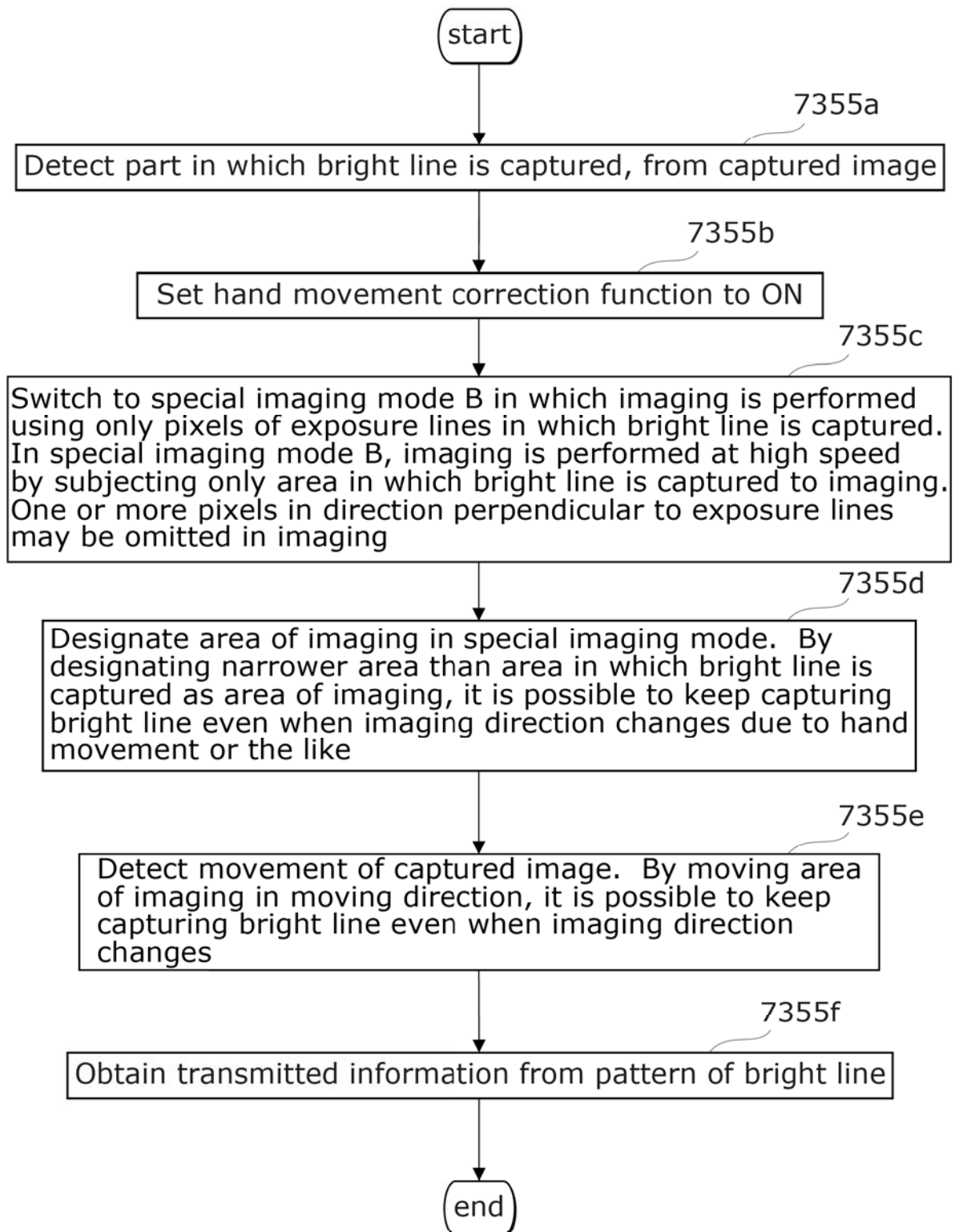


FIG. 330A

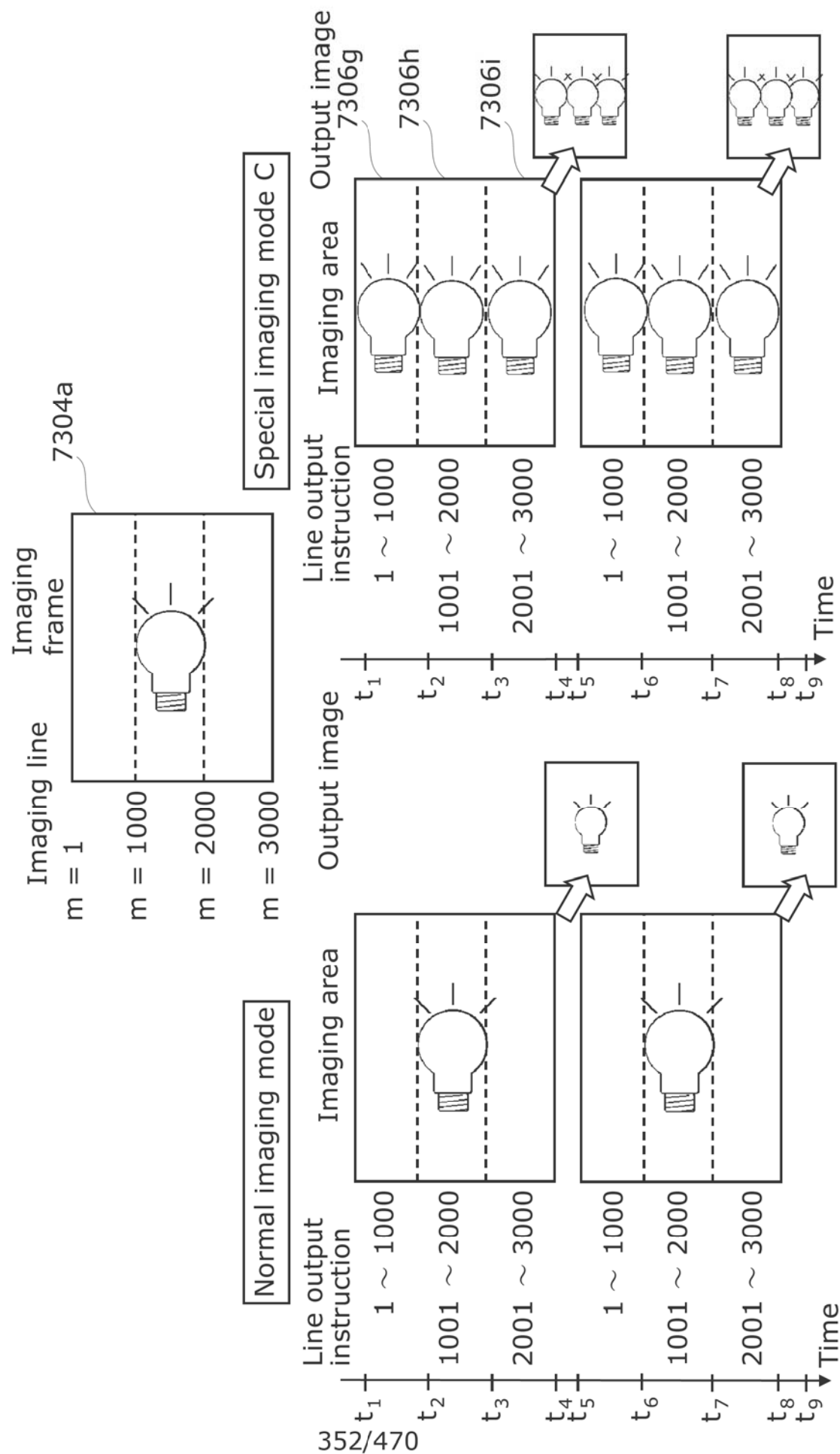


FIG. 330B

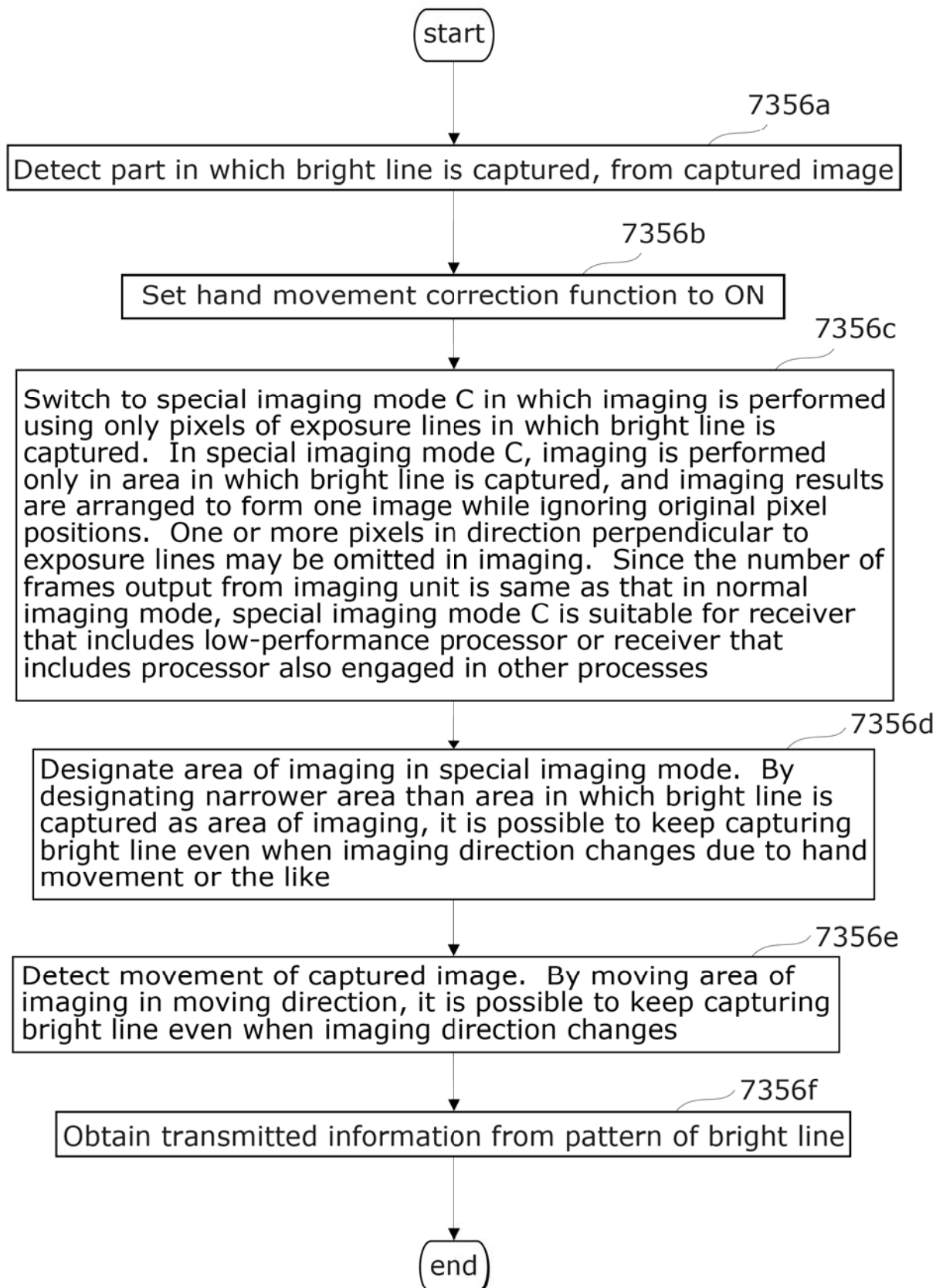


FIG. 331A

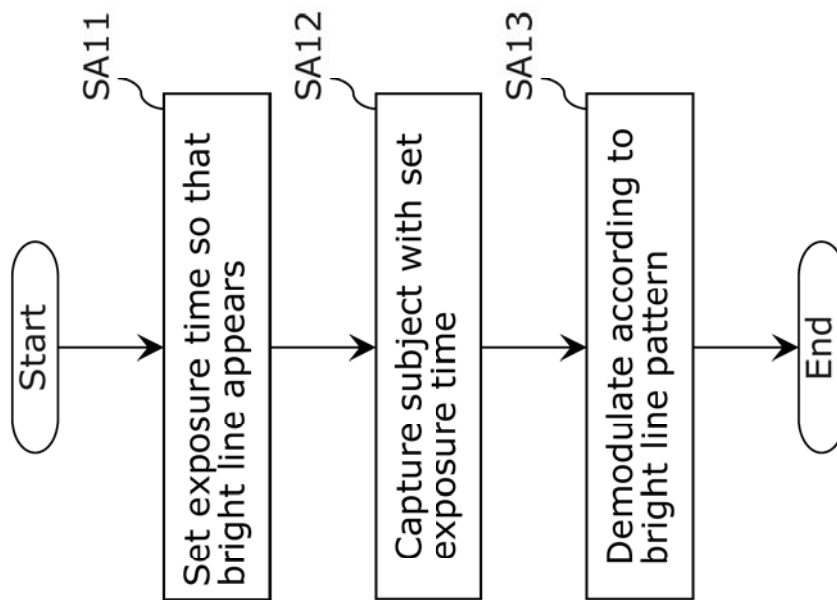


FIG. 331B

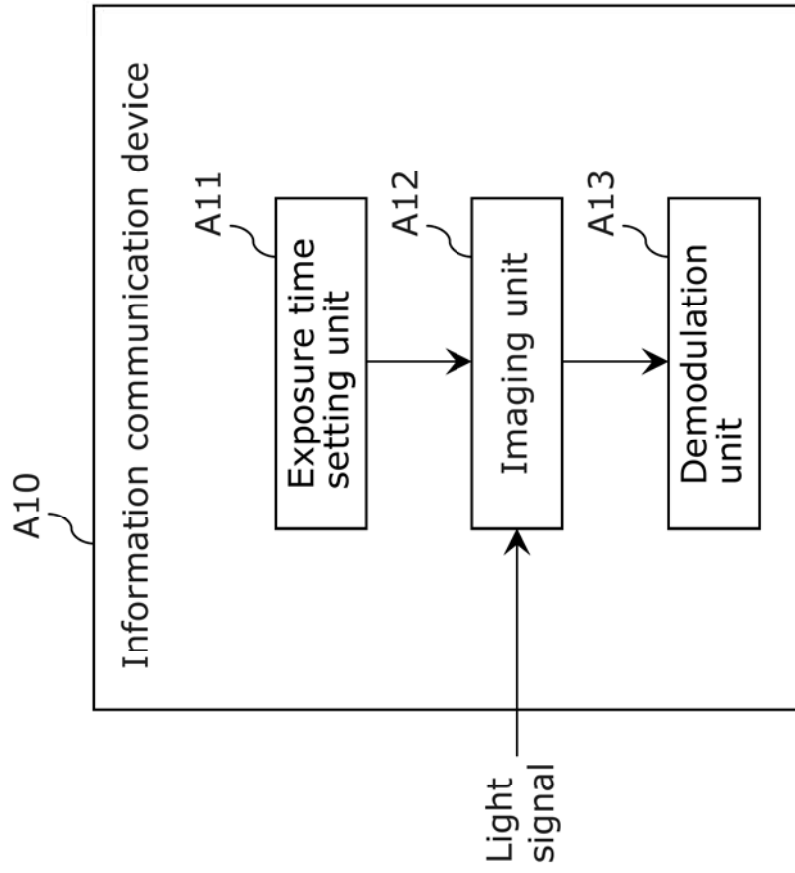


FIG. 331C

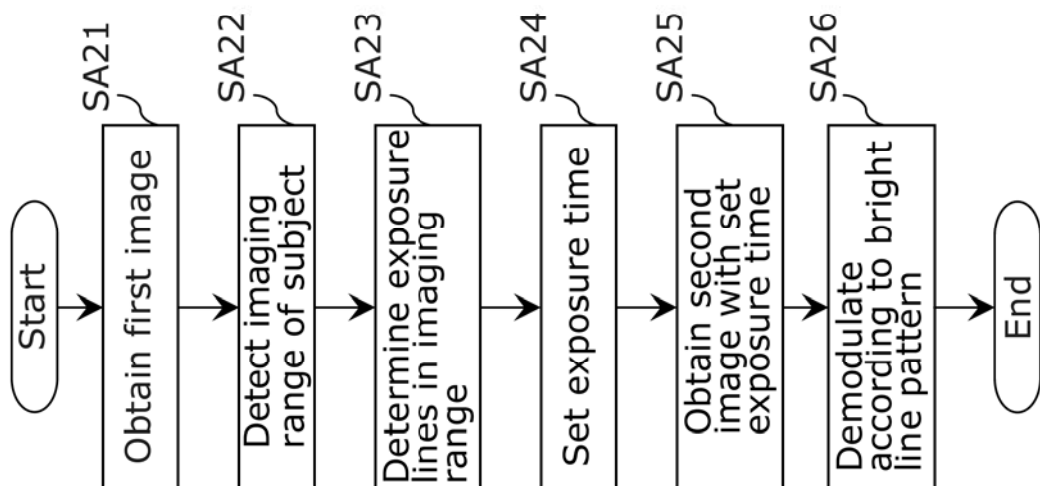


FIG. 331D

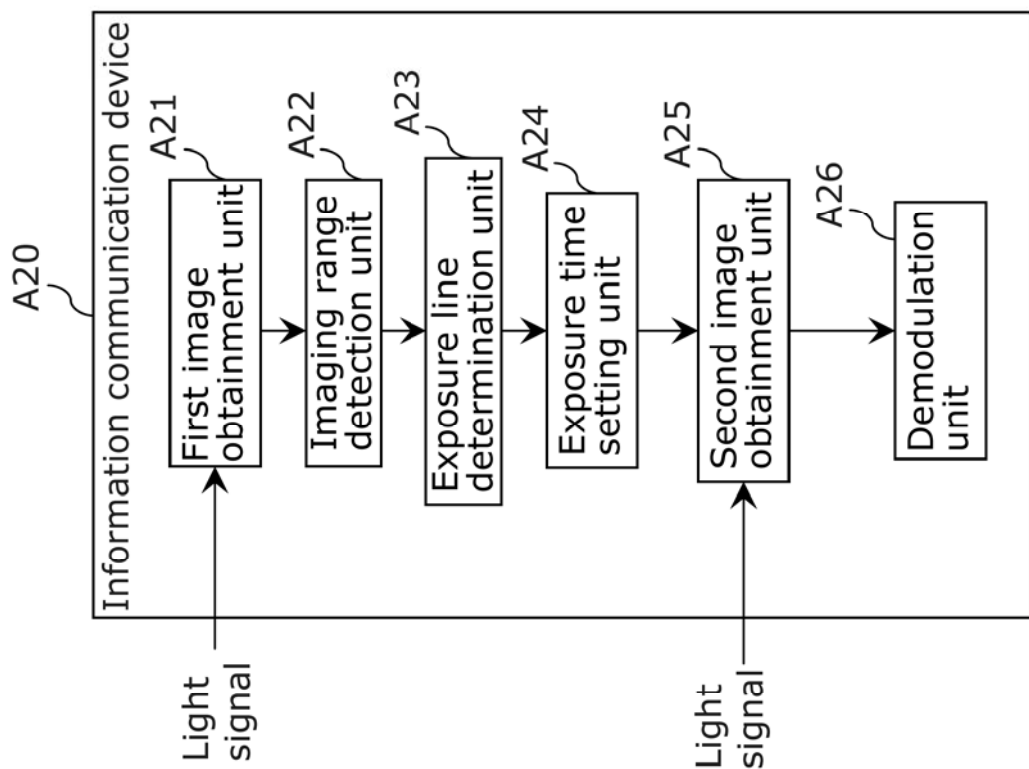


FIG. 332

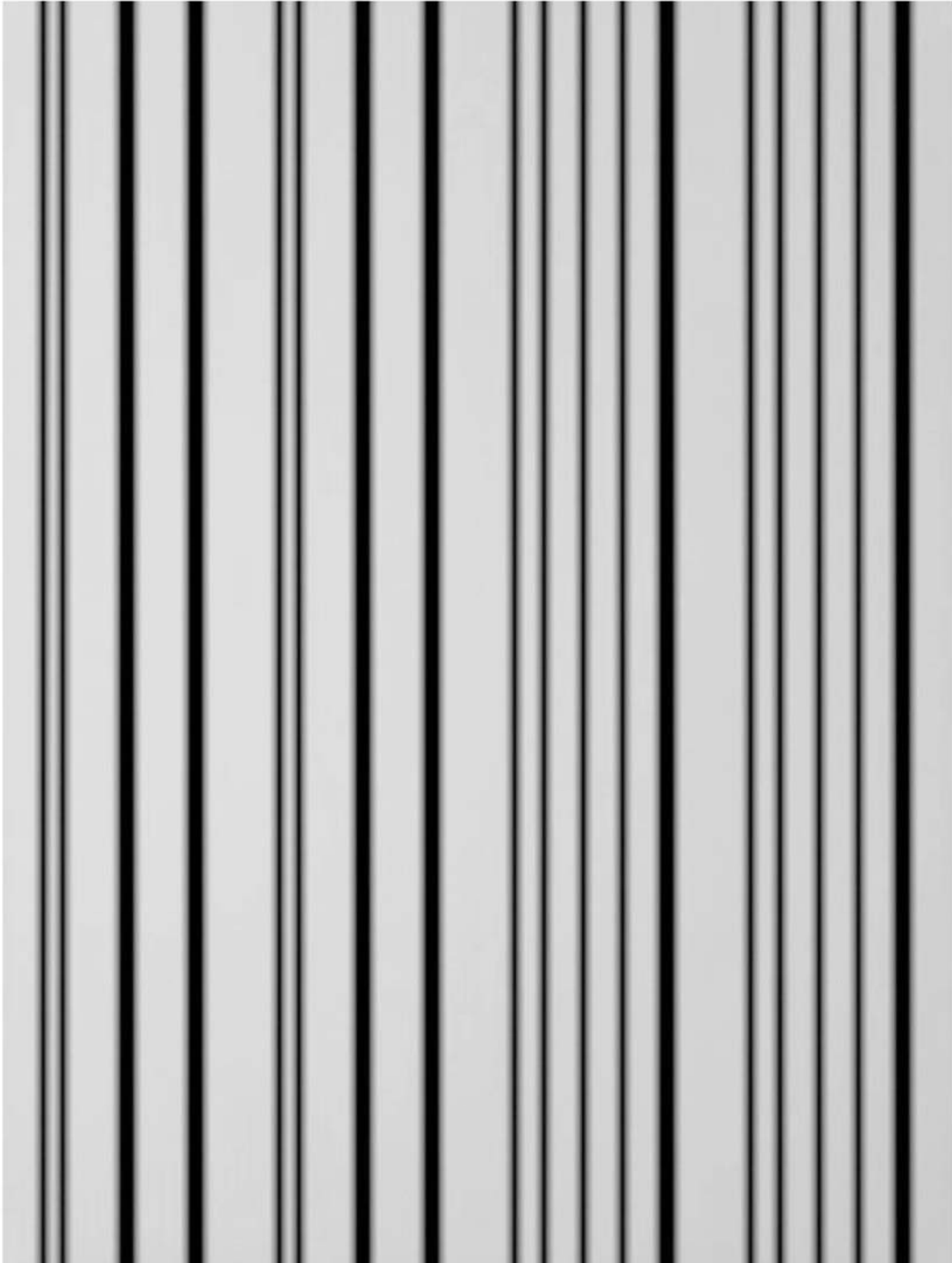




FIG. 333A

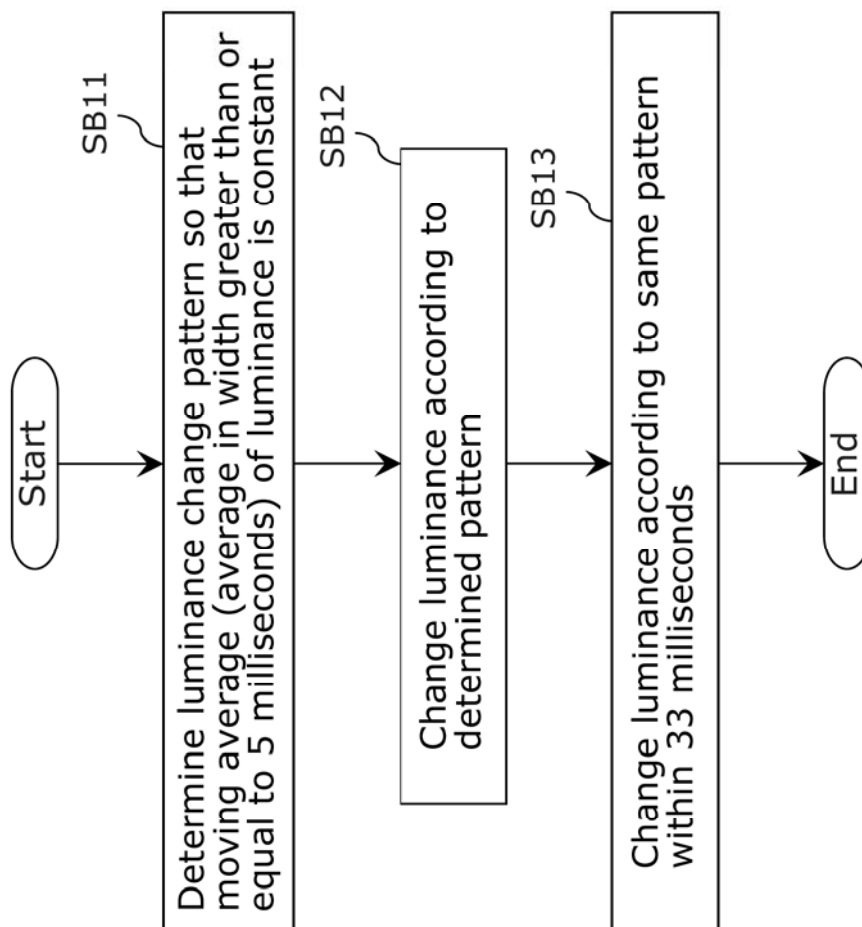


FIG. 333B

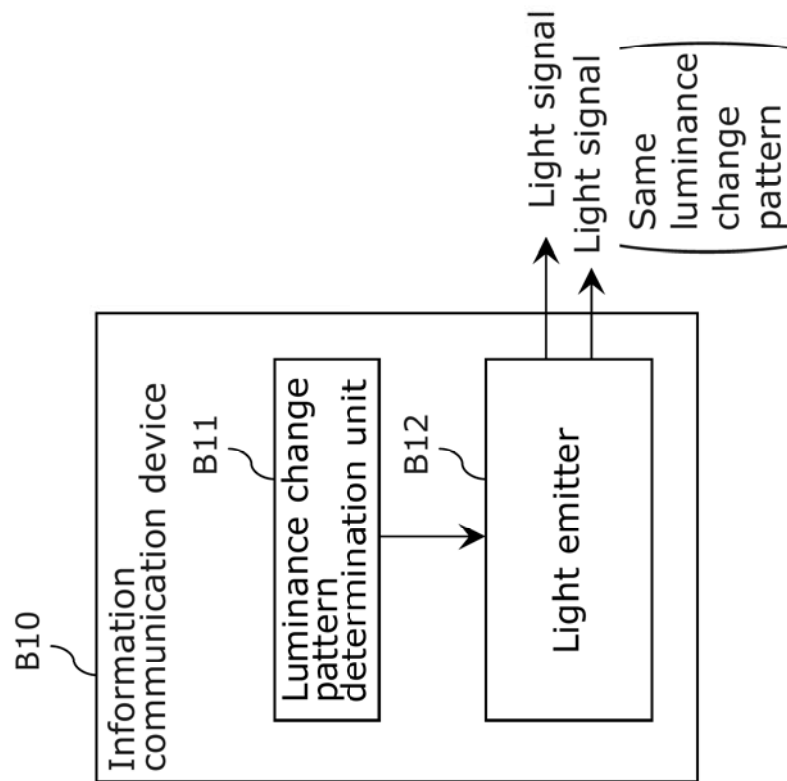


FIG. 334A

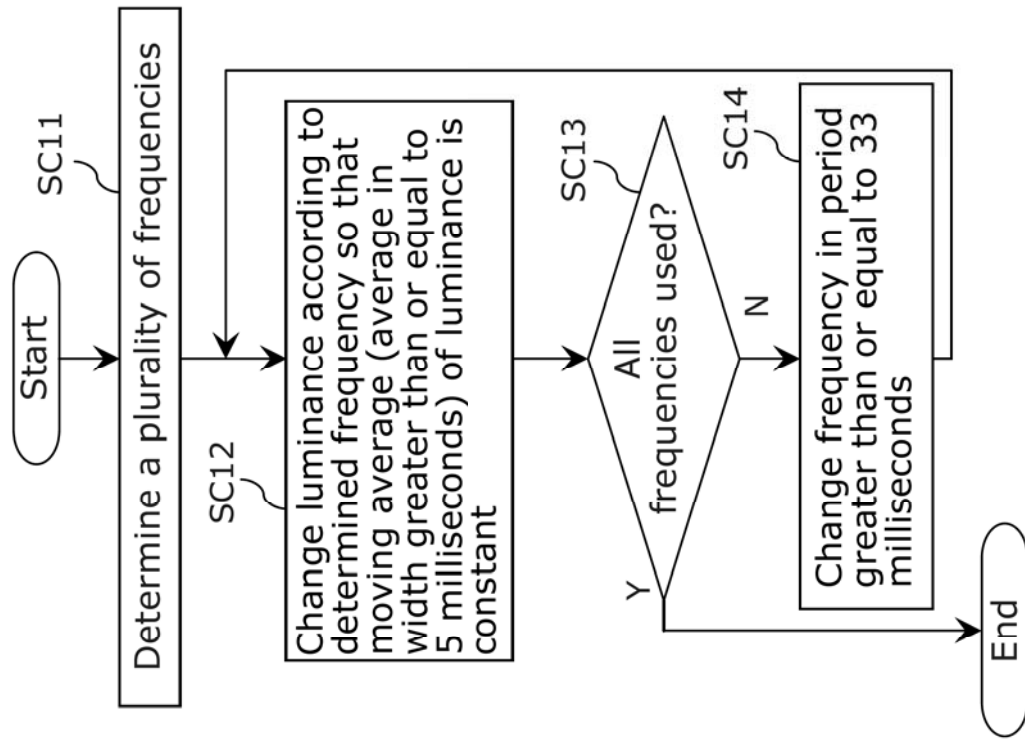


FIG. 334B

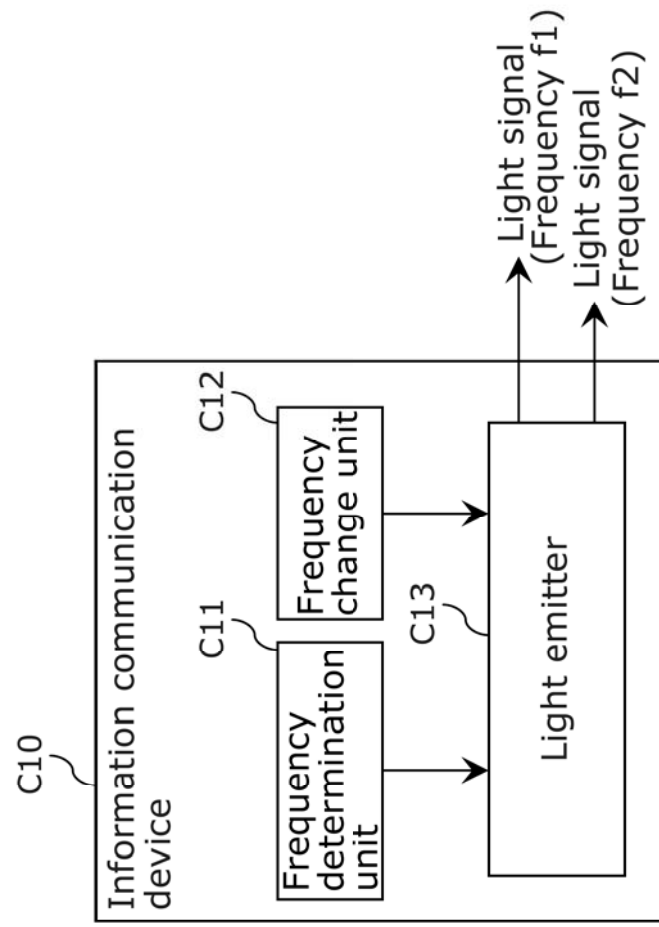


FIG. 335

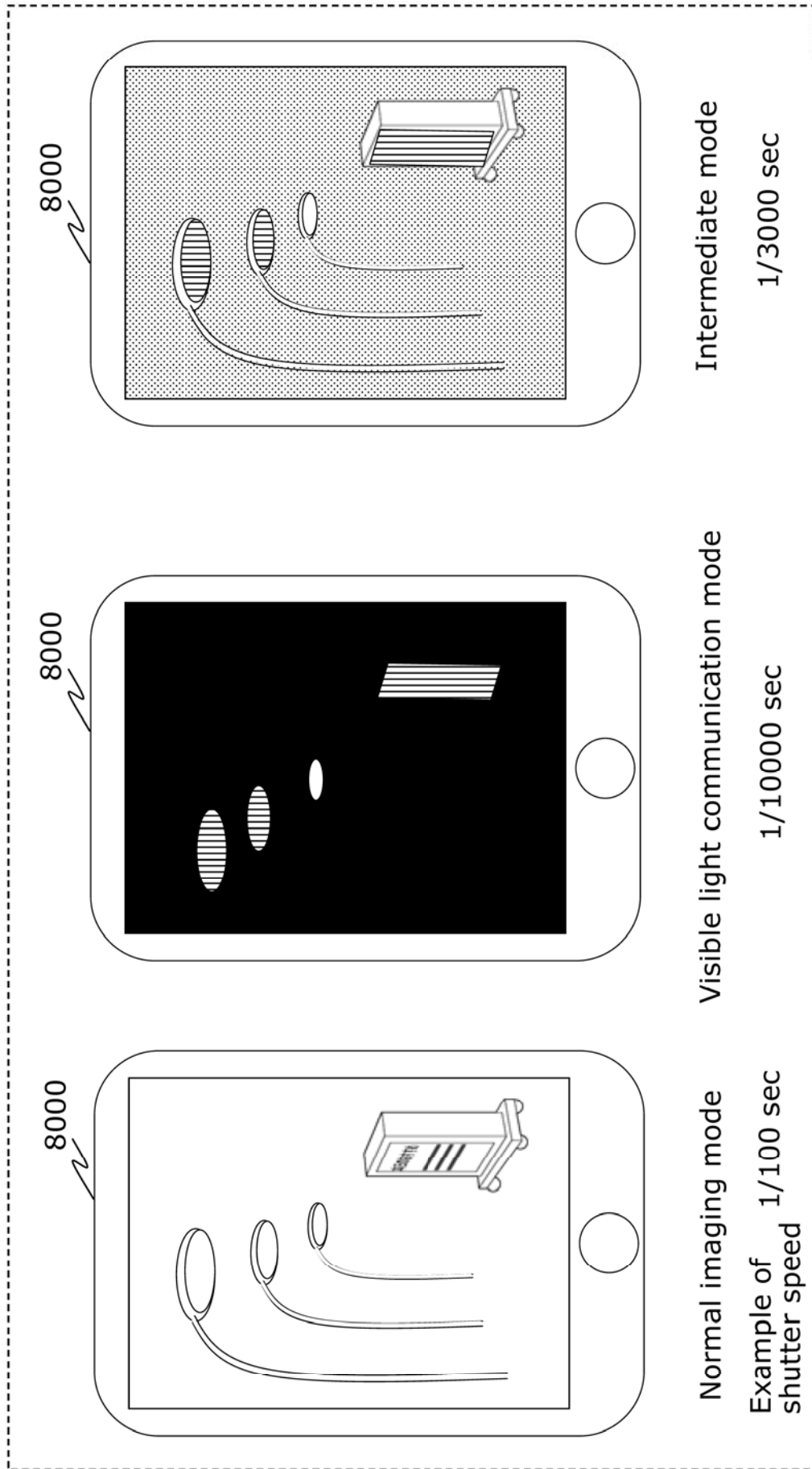


FIG. 336

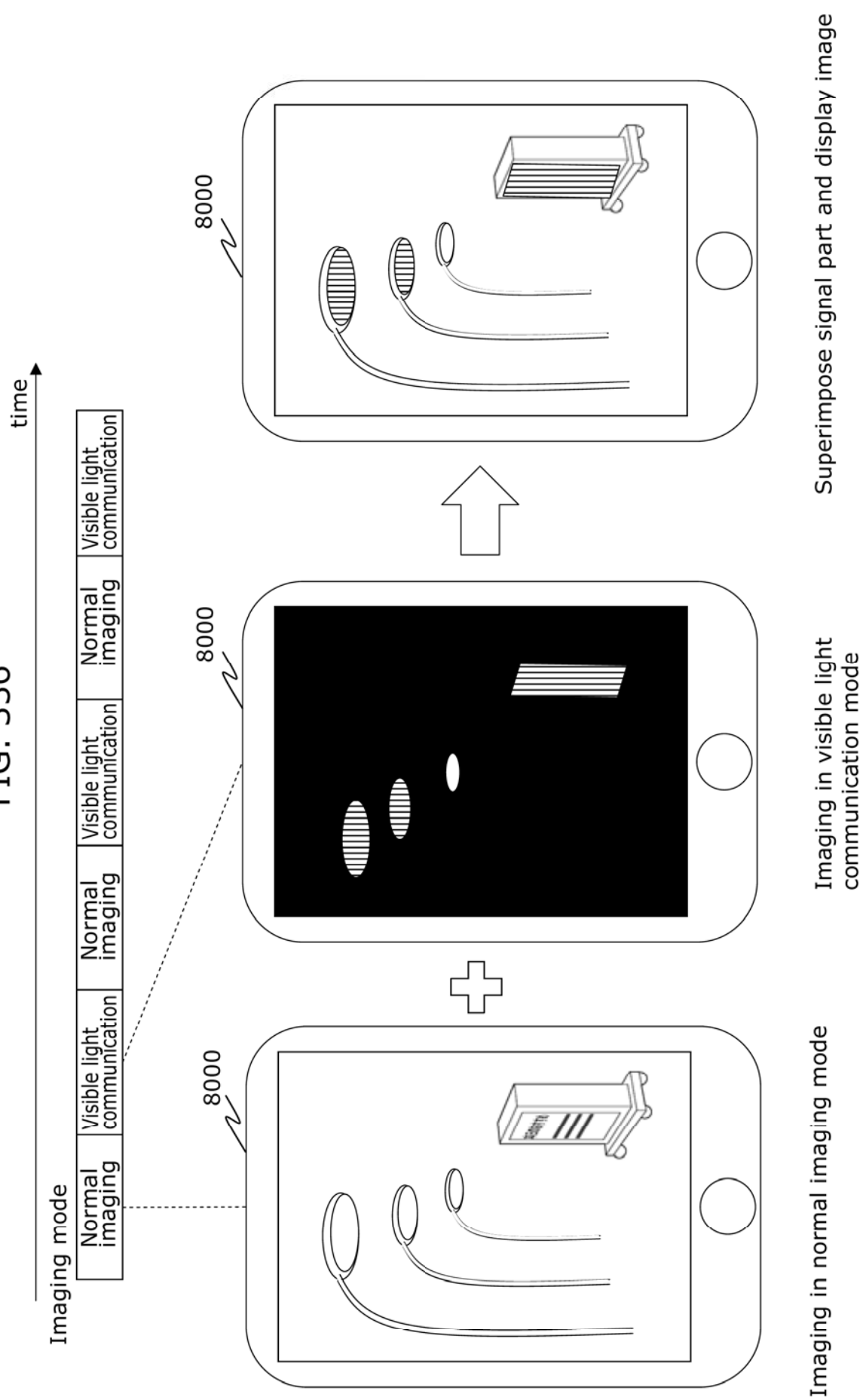


FIG. 337

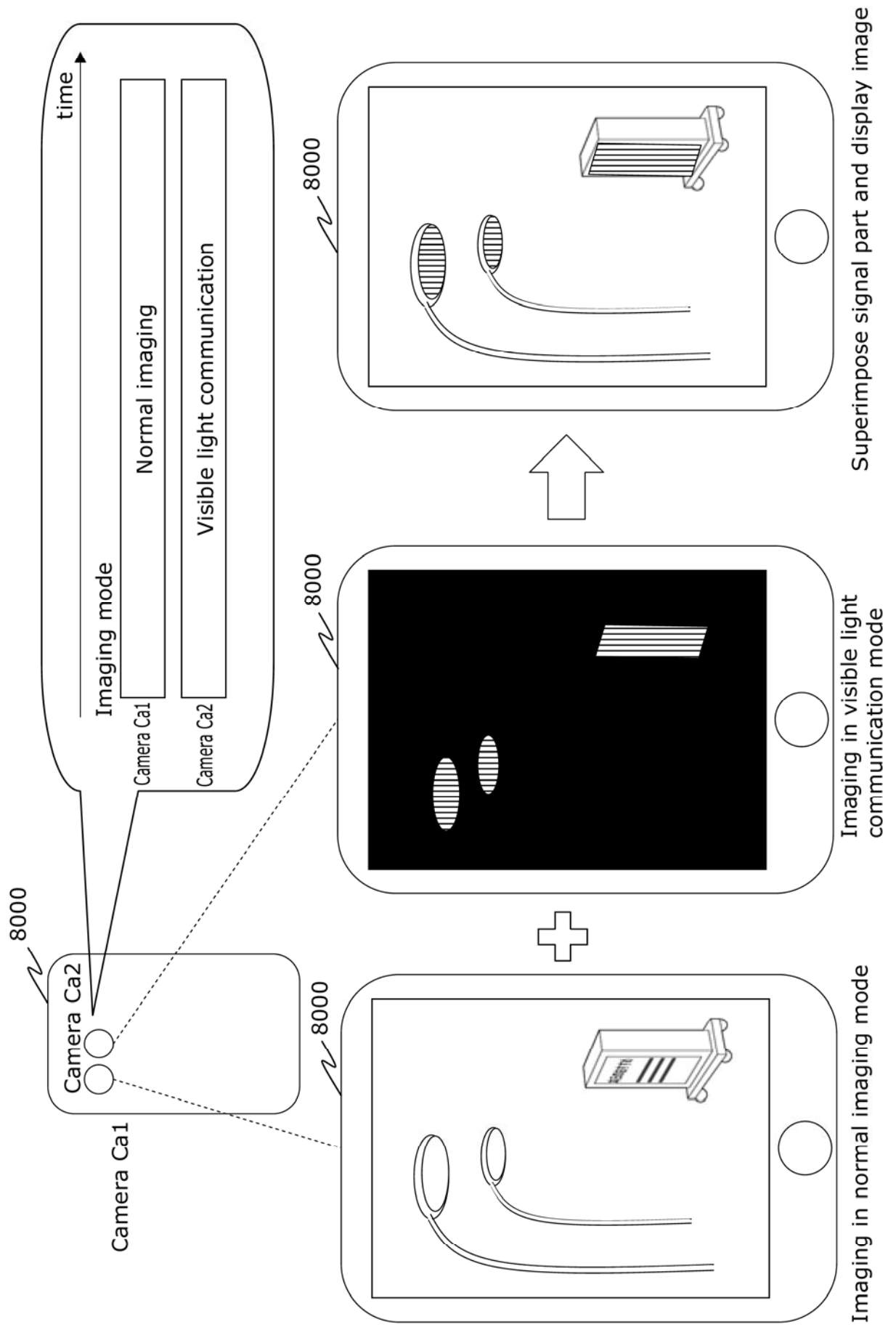


FIG. 338A

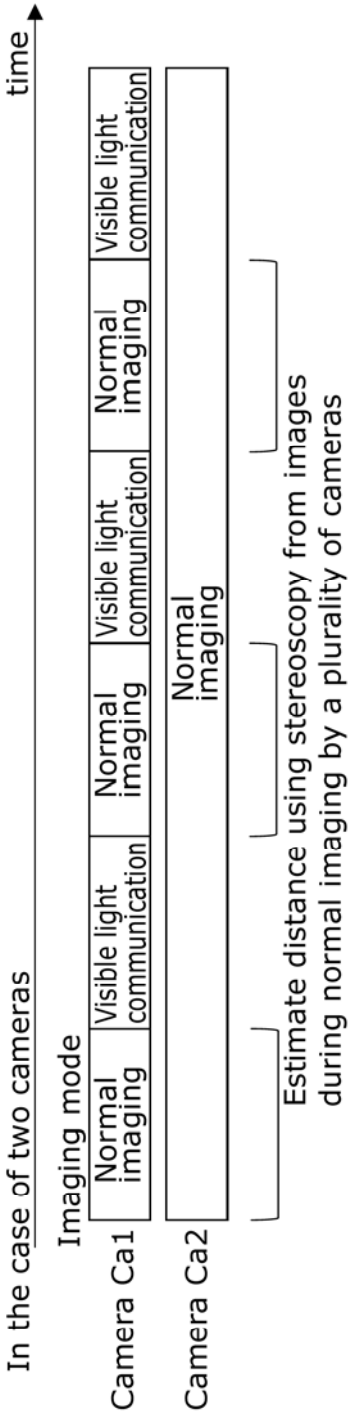


FIG. 338B

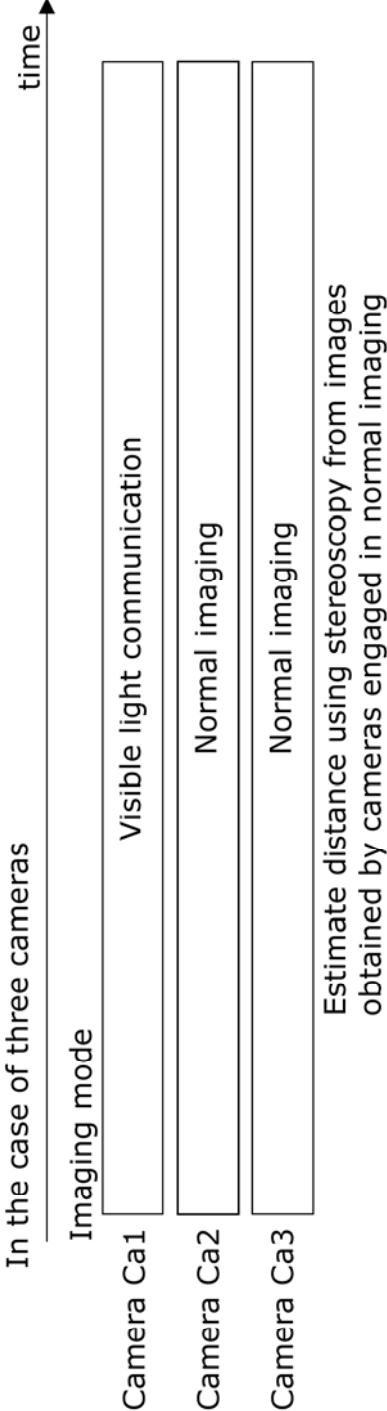


FIG. 338C

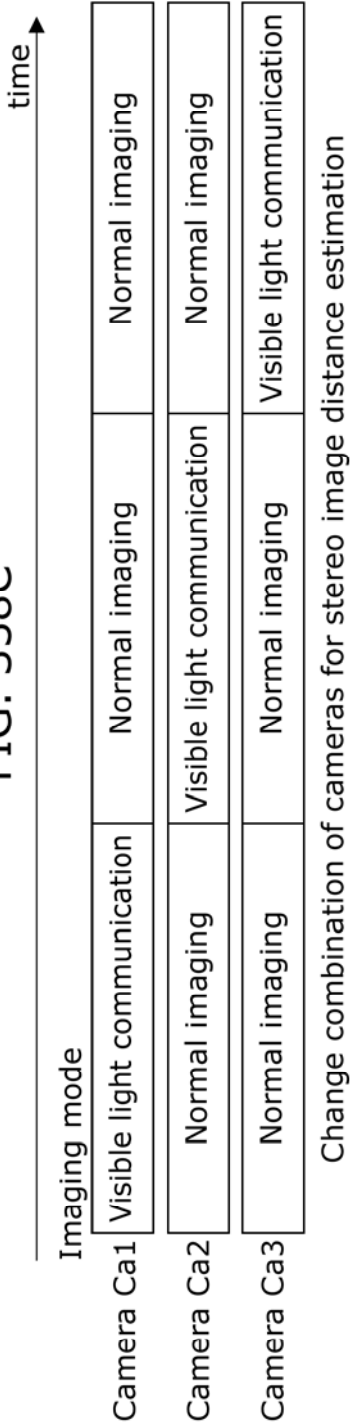
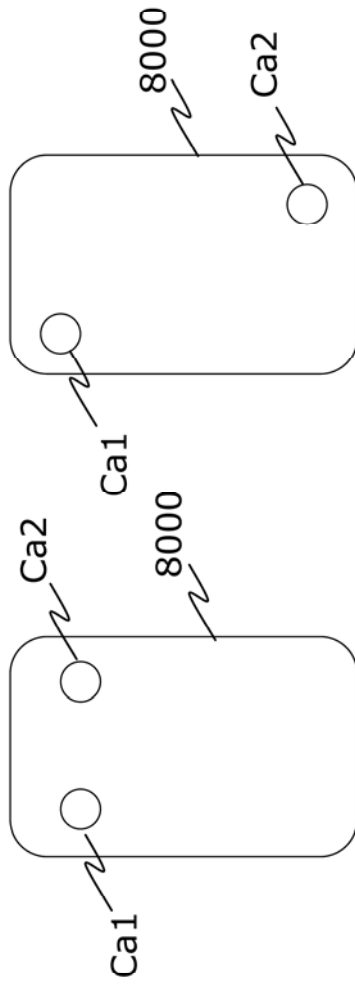


FIG. 339A

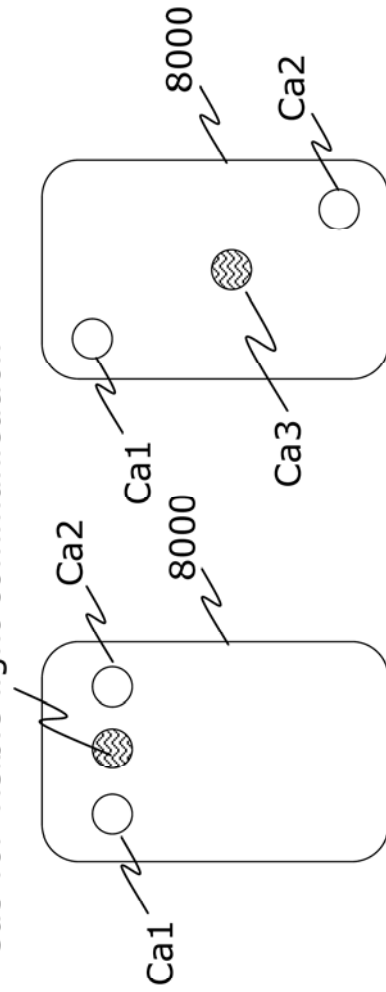
In the case of  
two cameras



Cameras are preferably away from each other in the case of performing  
stereo image distance estimation

FIG. 339B

In the case of  
three cameras



Perform stereo image distance estimation using cameras farthest away from  
each other, and perform visible light communication using other camera

FIG. 340

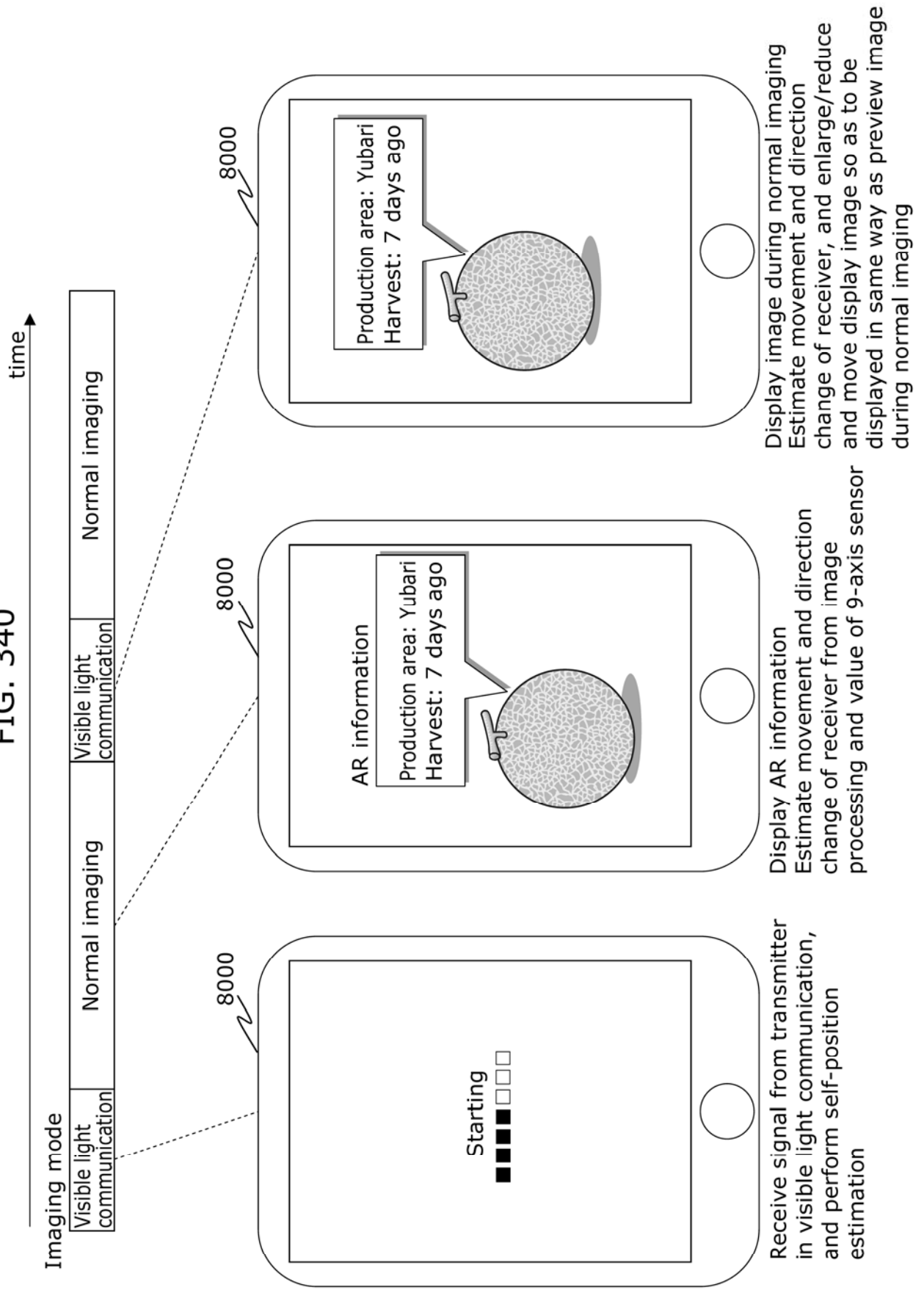




FIG. 341

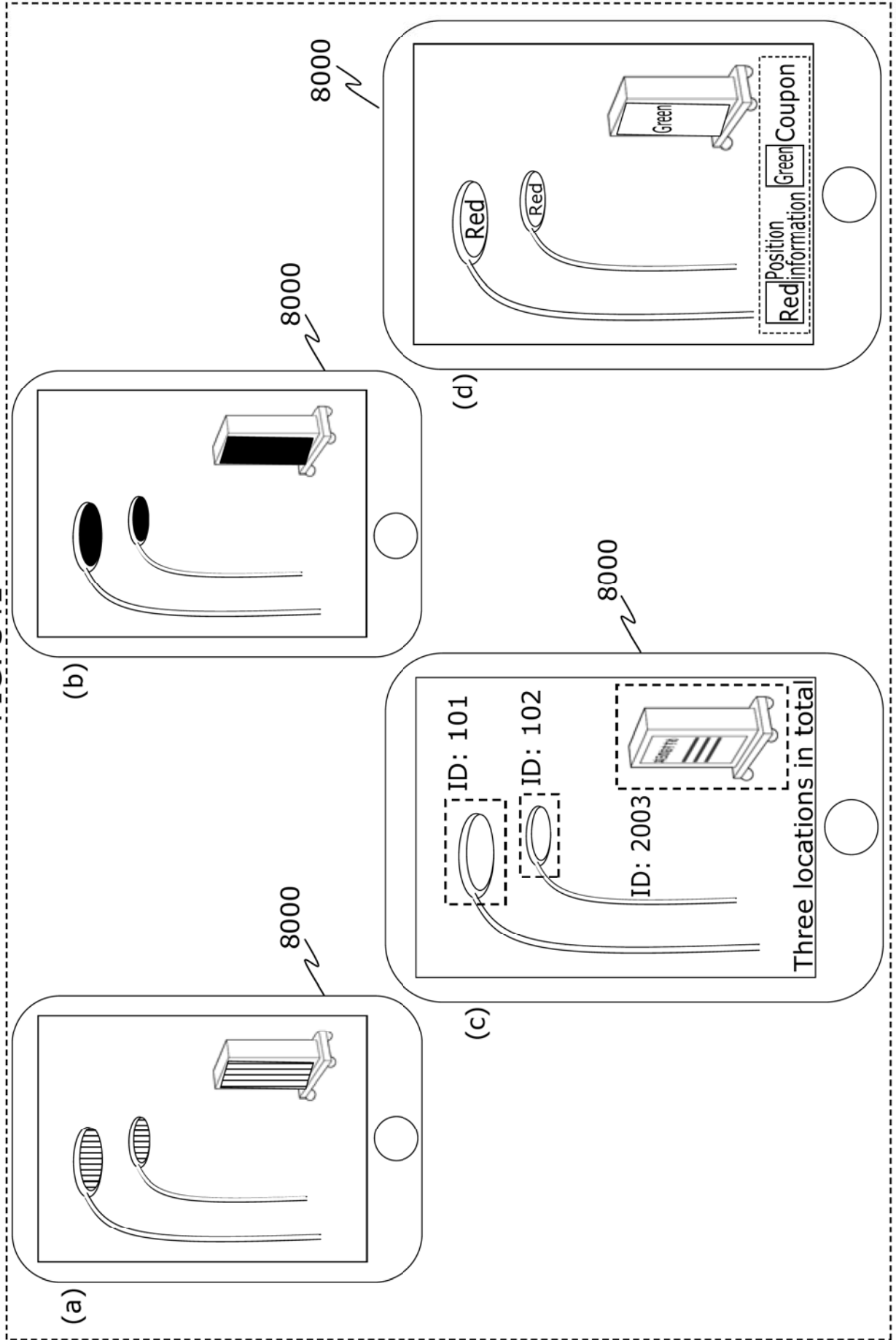


FIG. 342

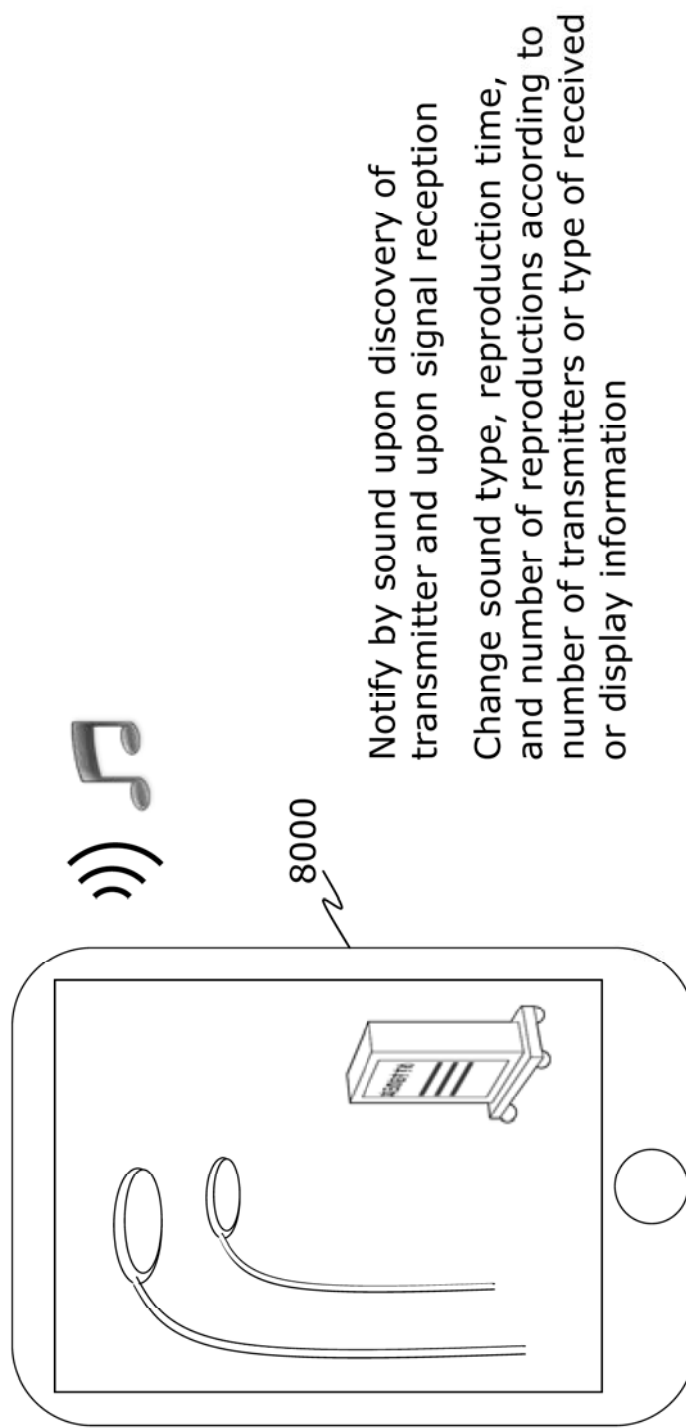


FIG. 343

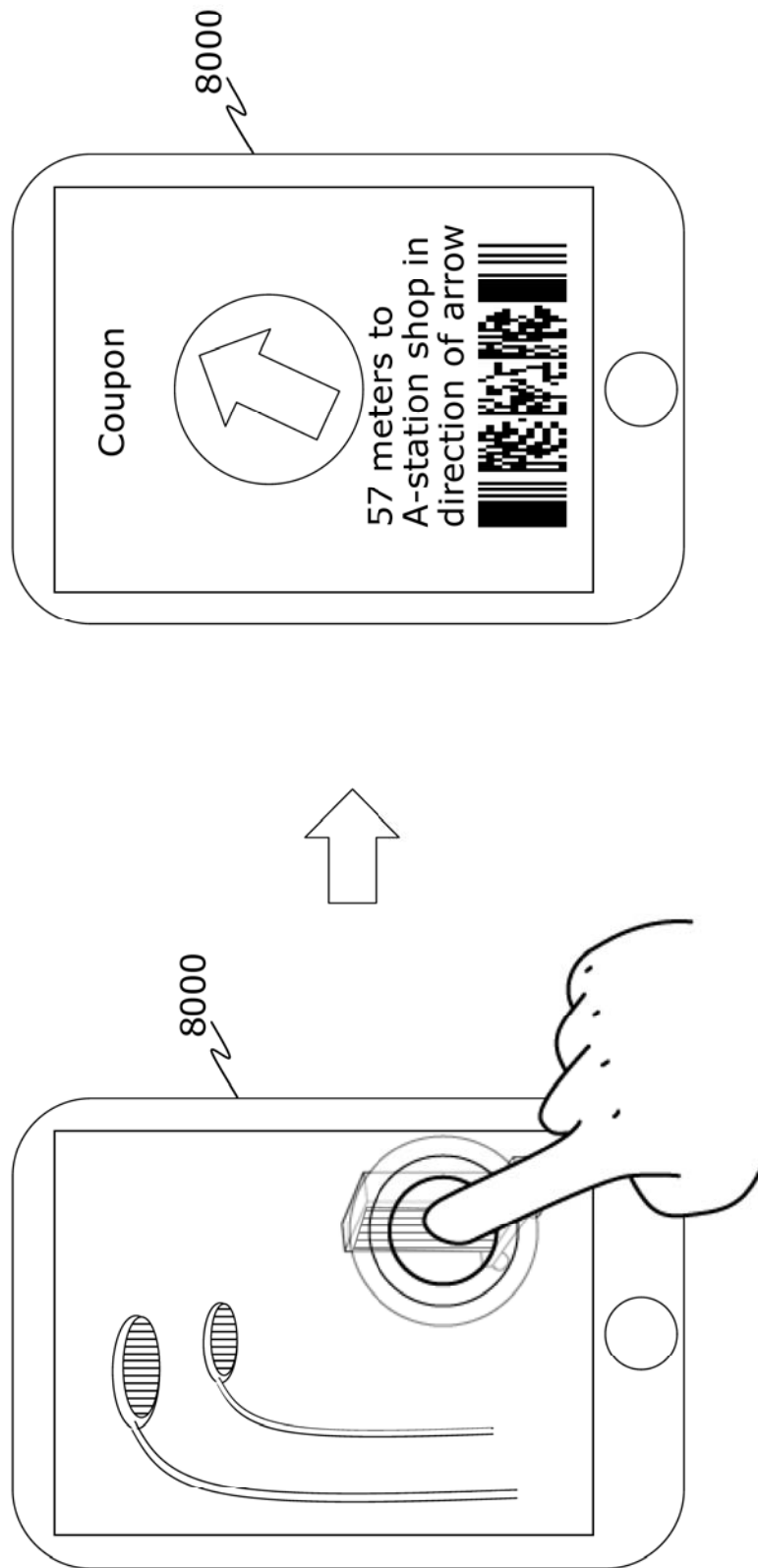


FIG. 344

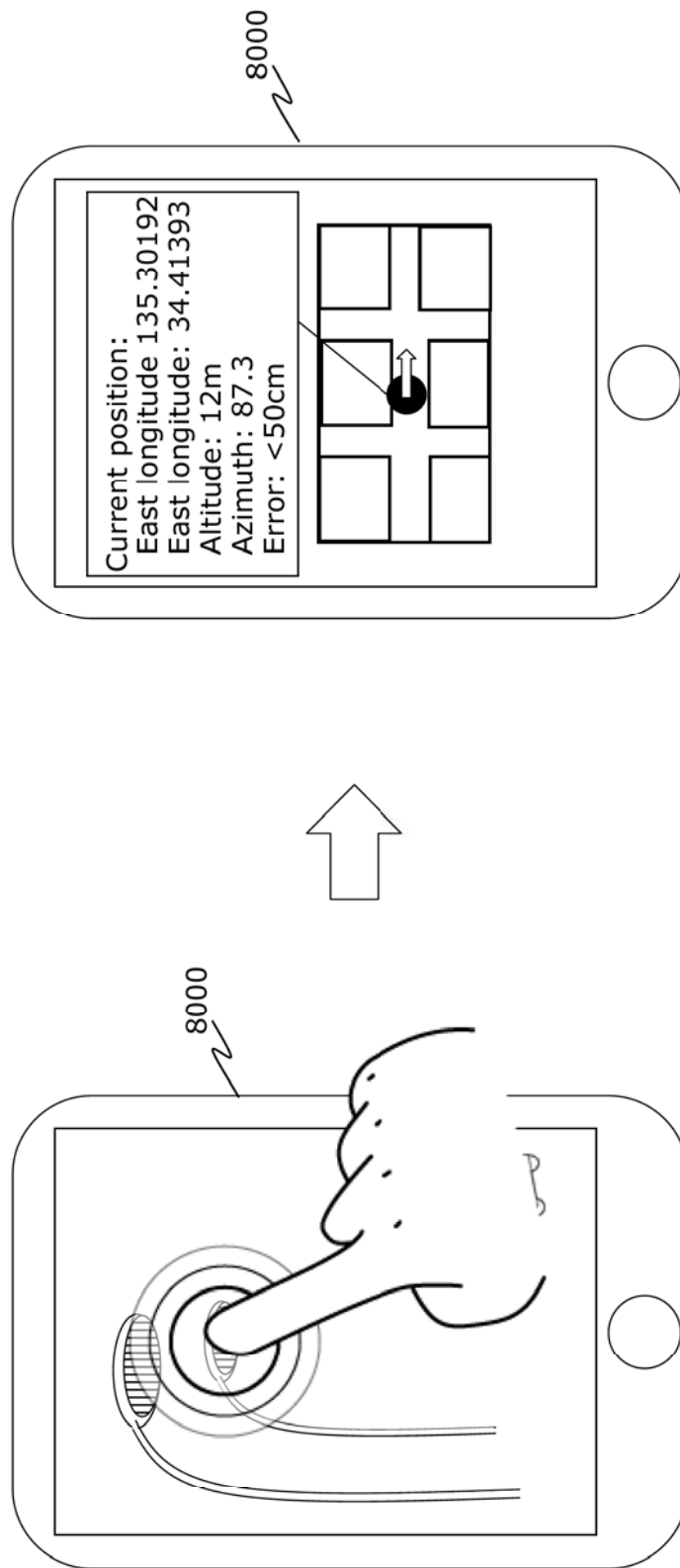


FIG. 345

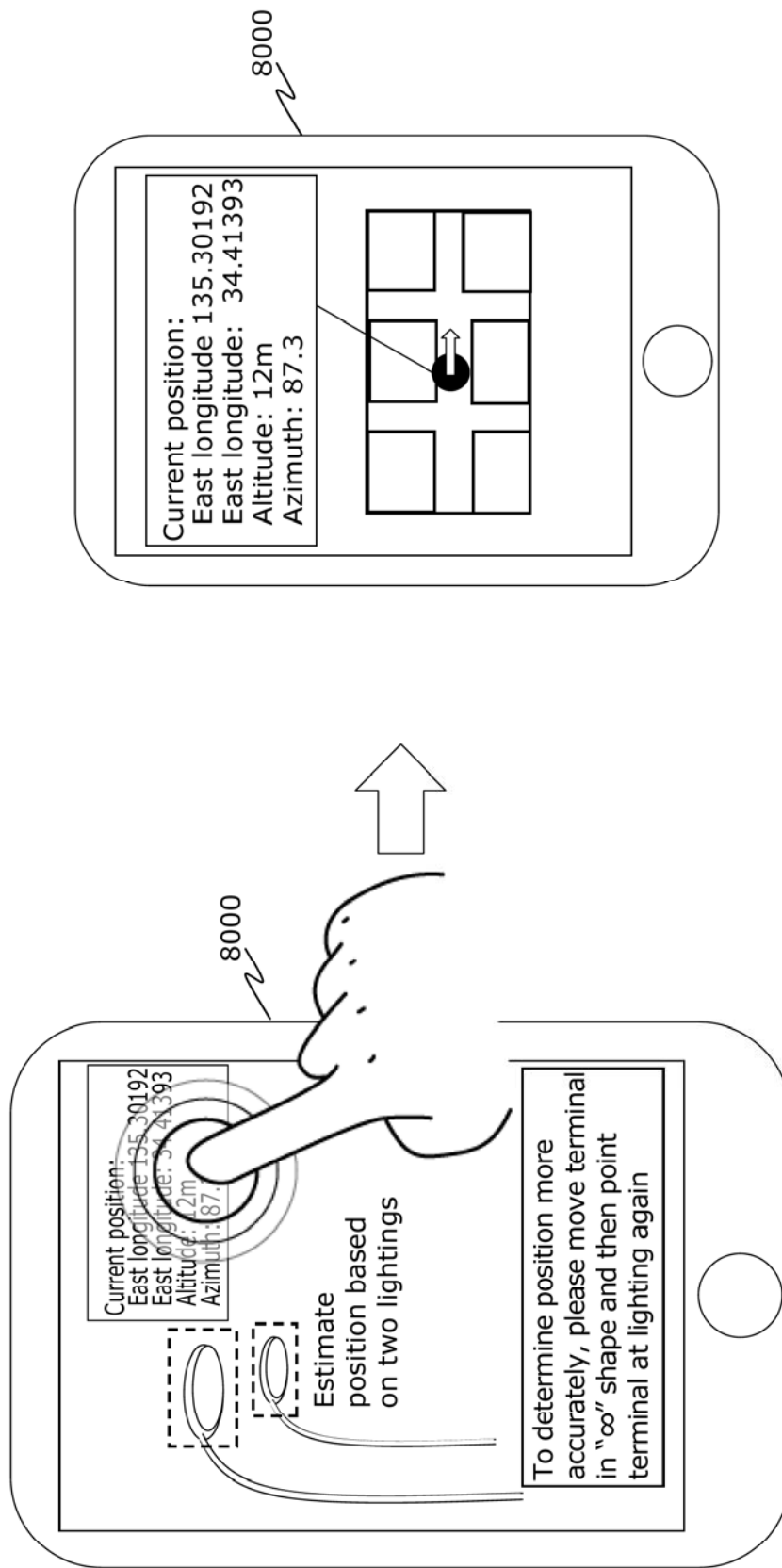


FIG. 346

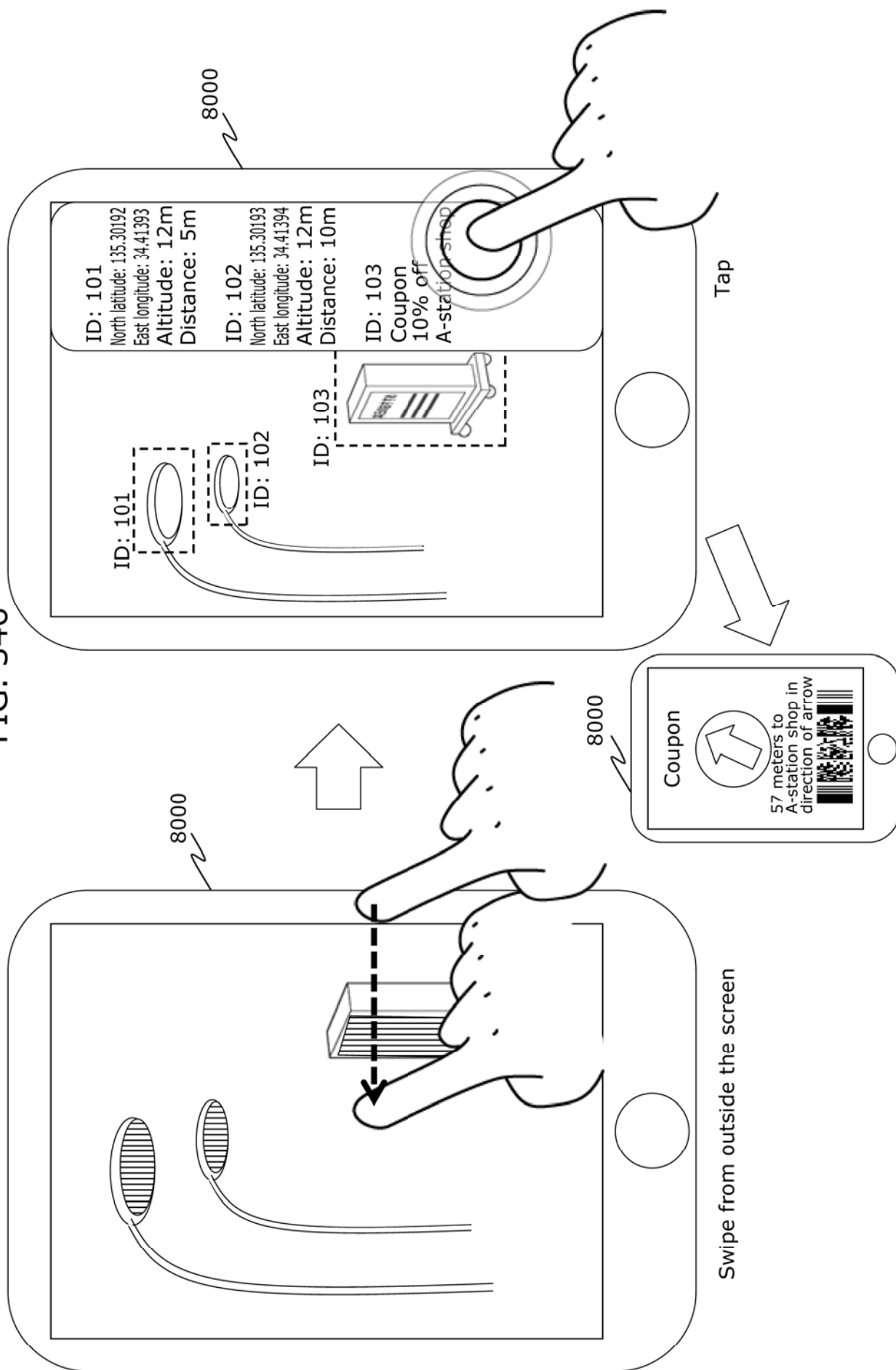


FIG. 347

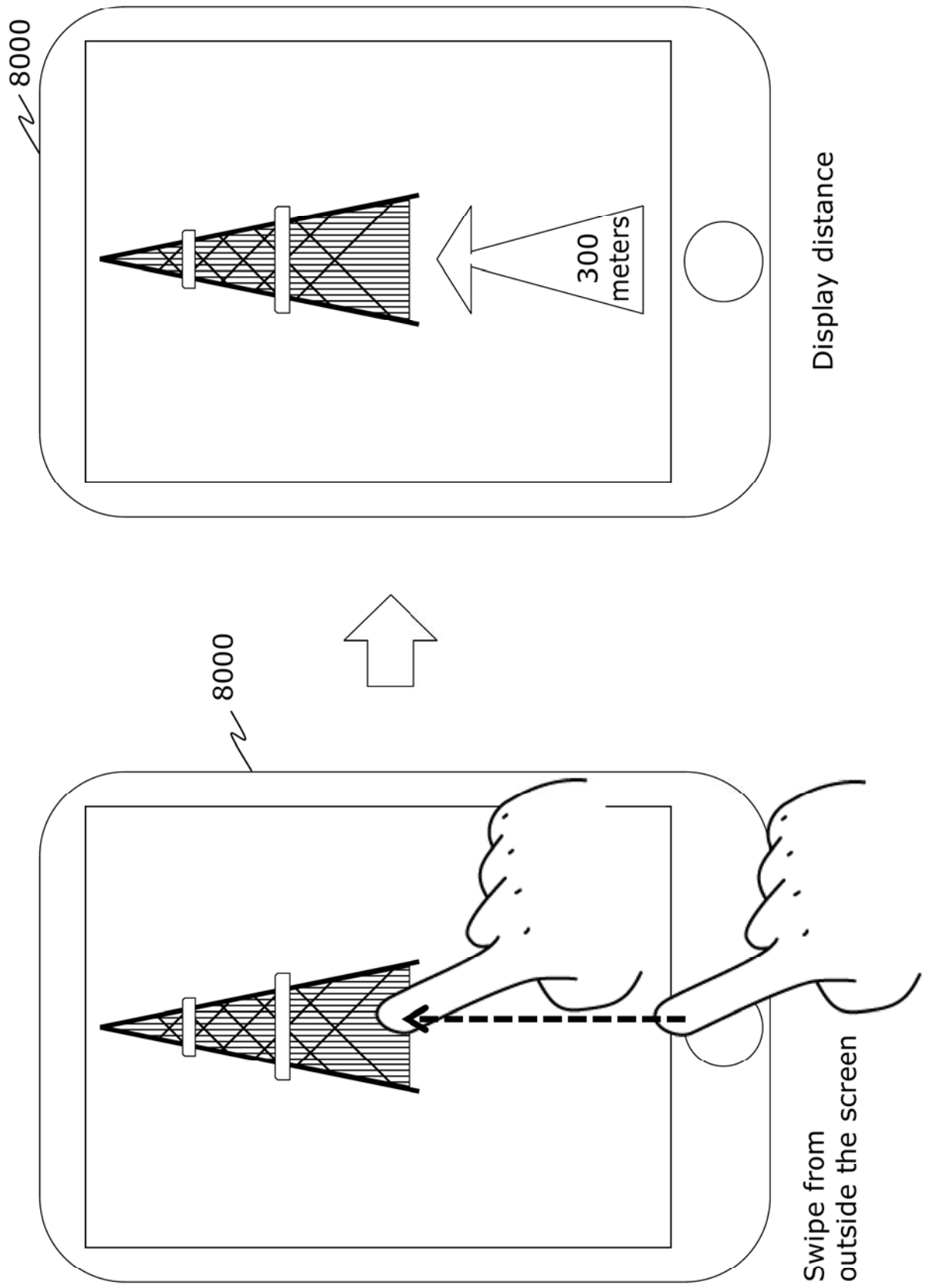


FIG. 348

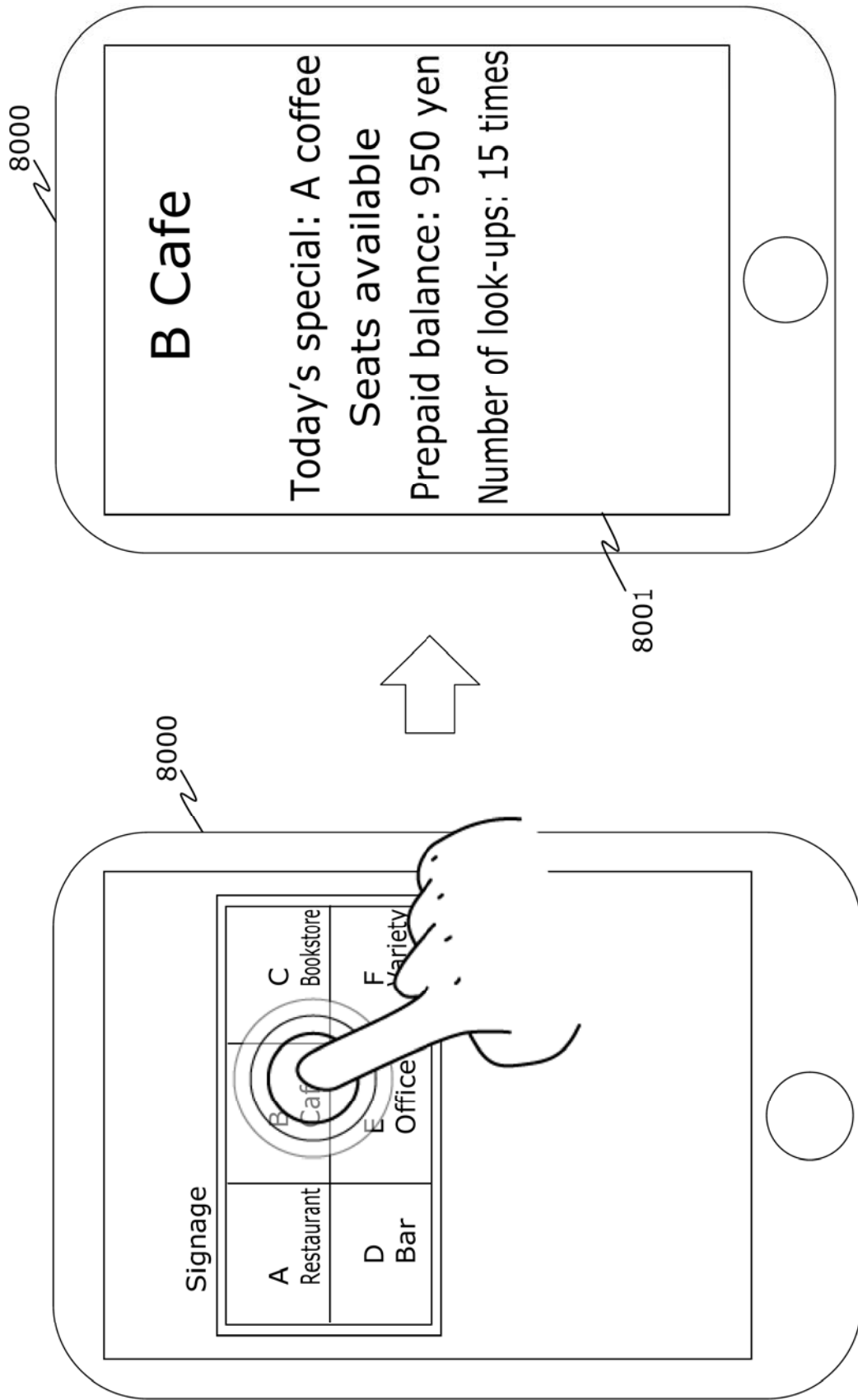




FIG. 349

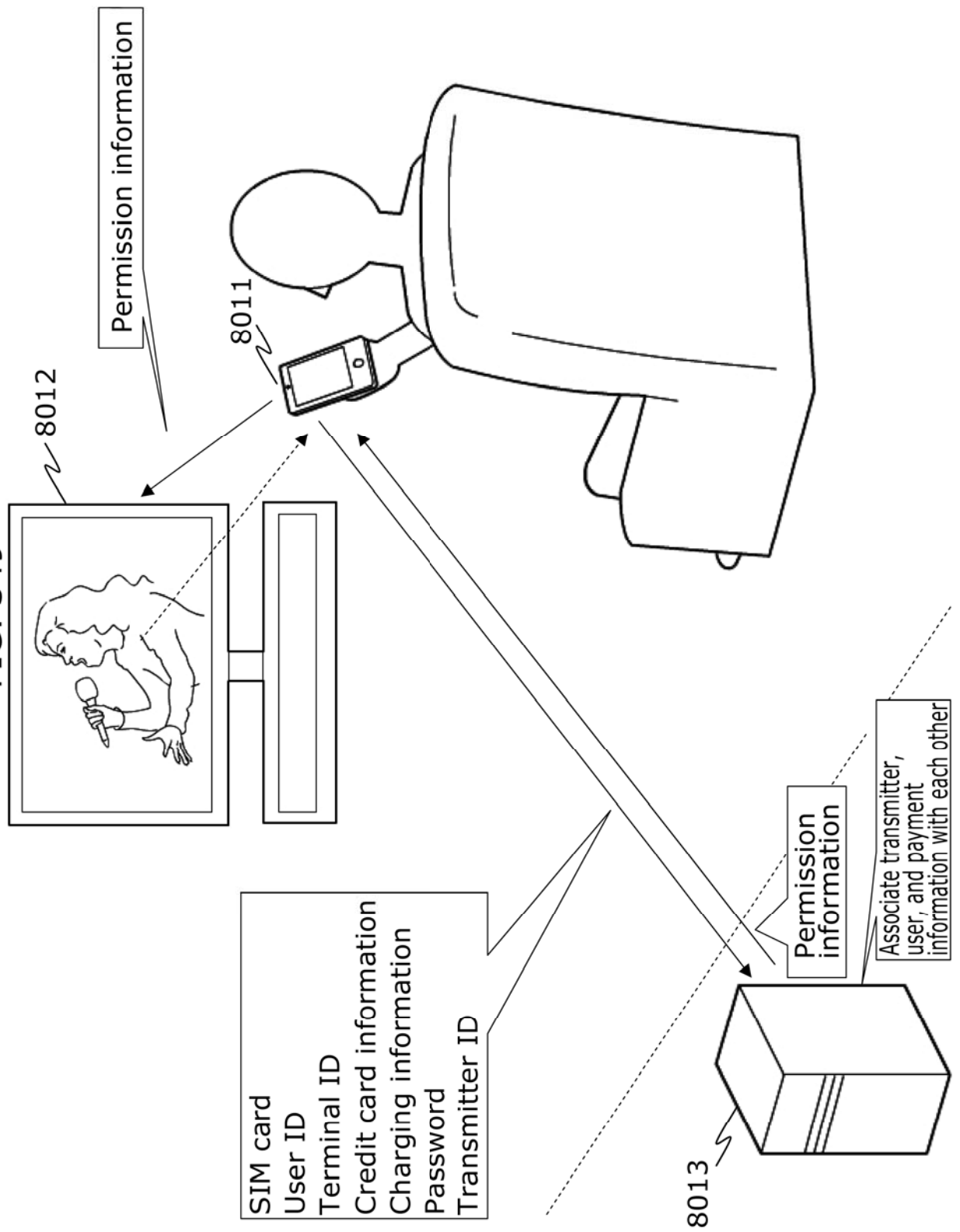


FIG. 350

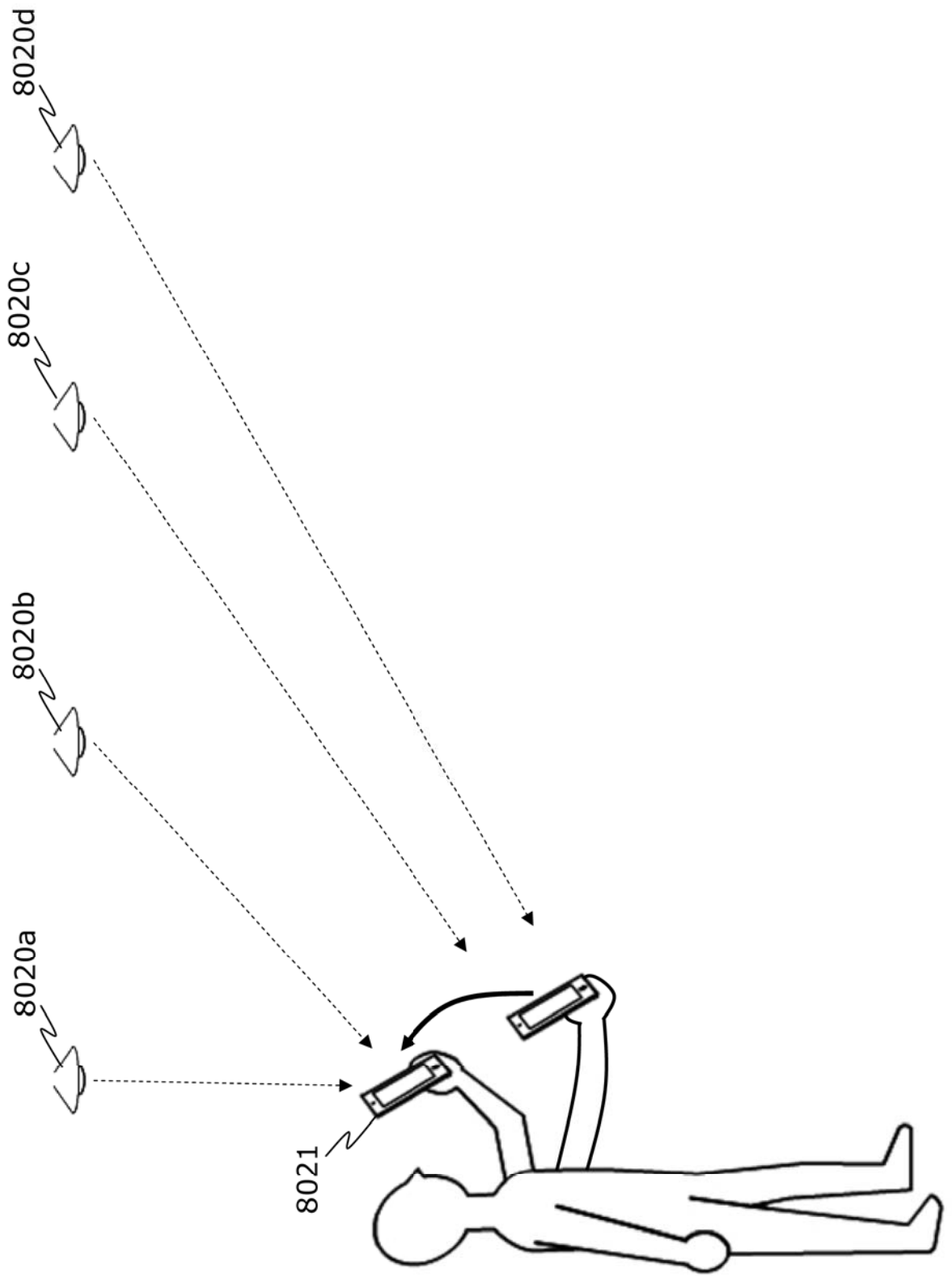


FIG. 351

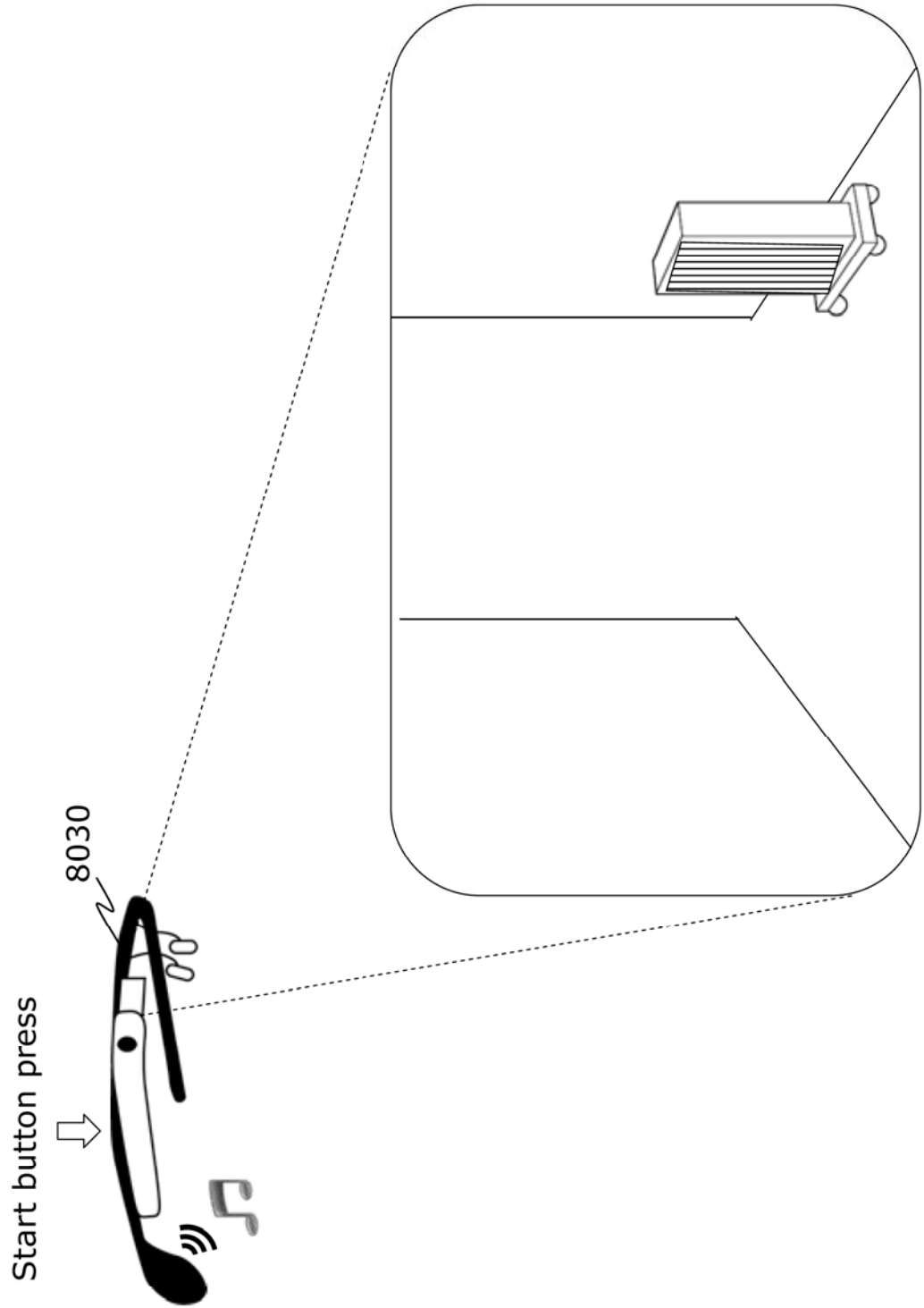
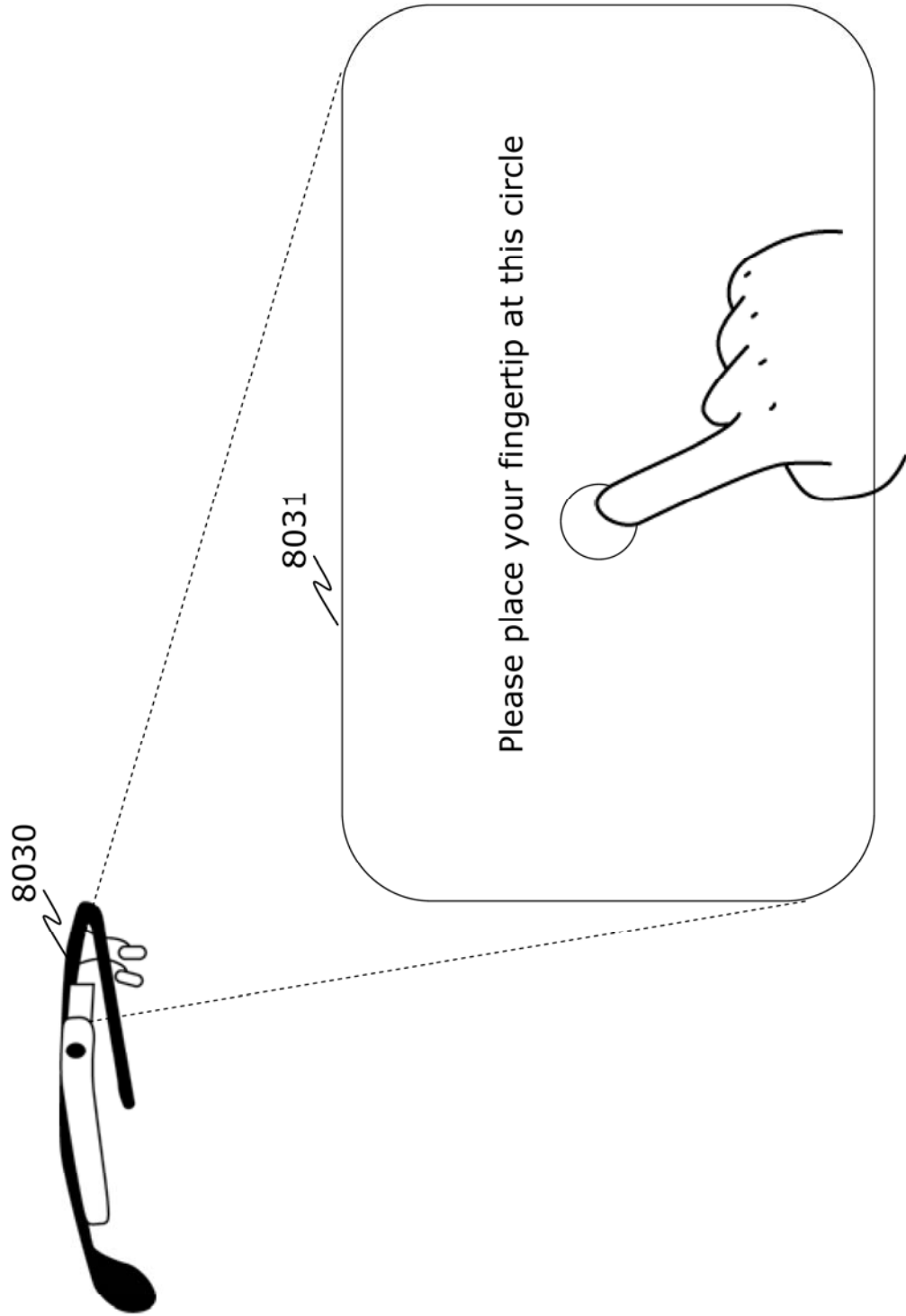


FIG. 352



Alignment of display position and imaging position

FIG. 353

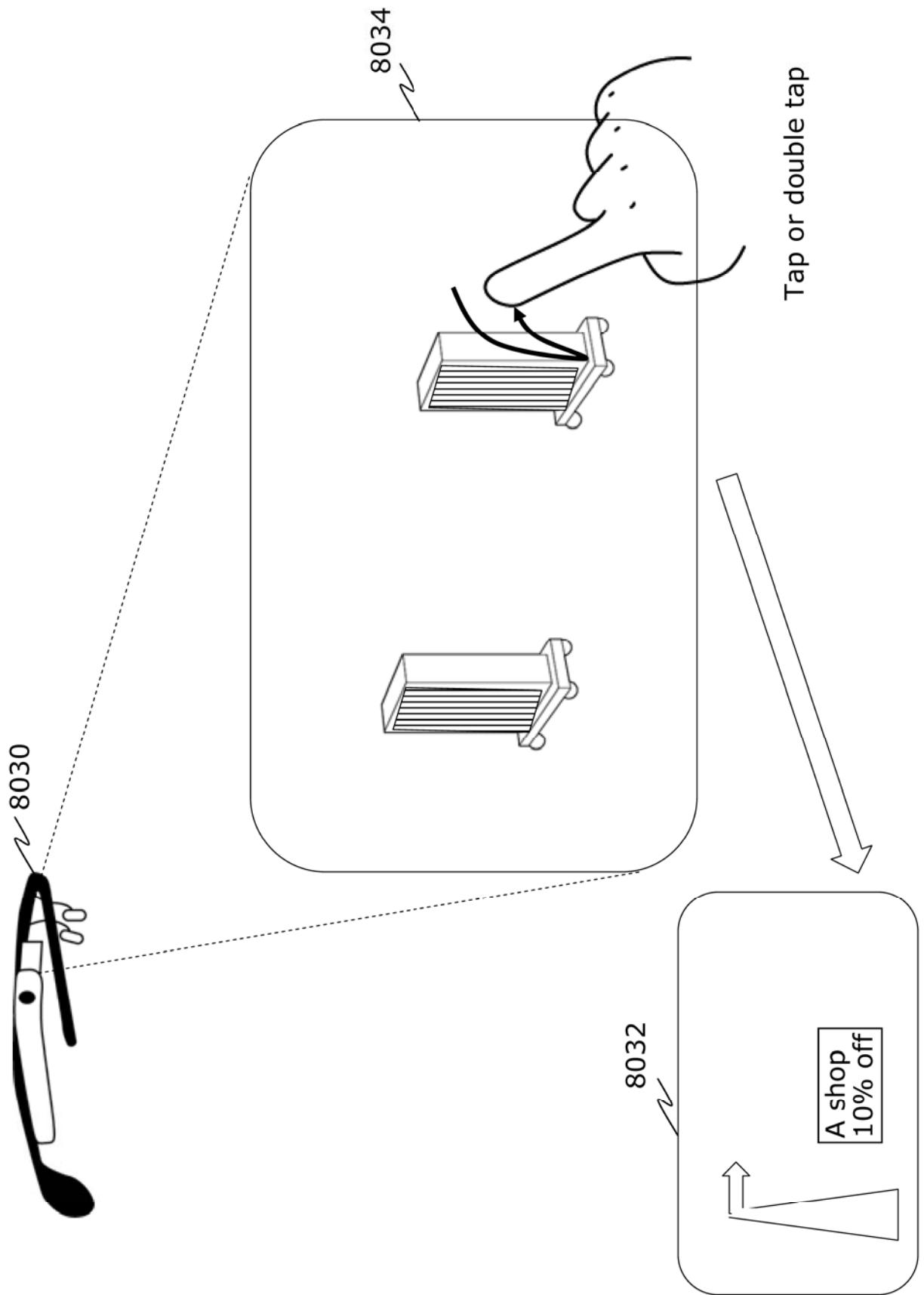


FIG. 354

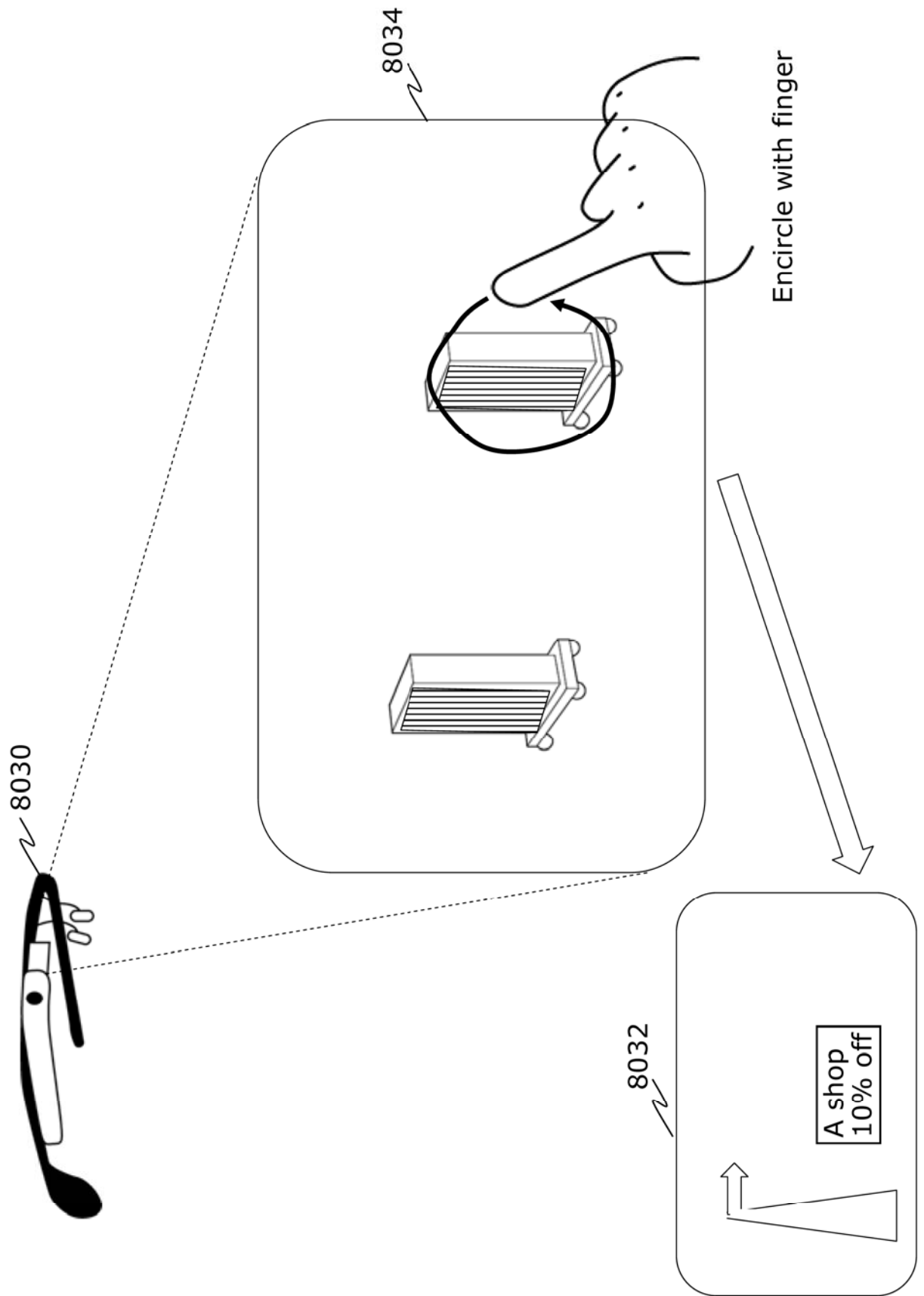


FIG. 355

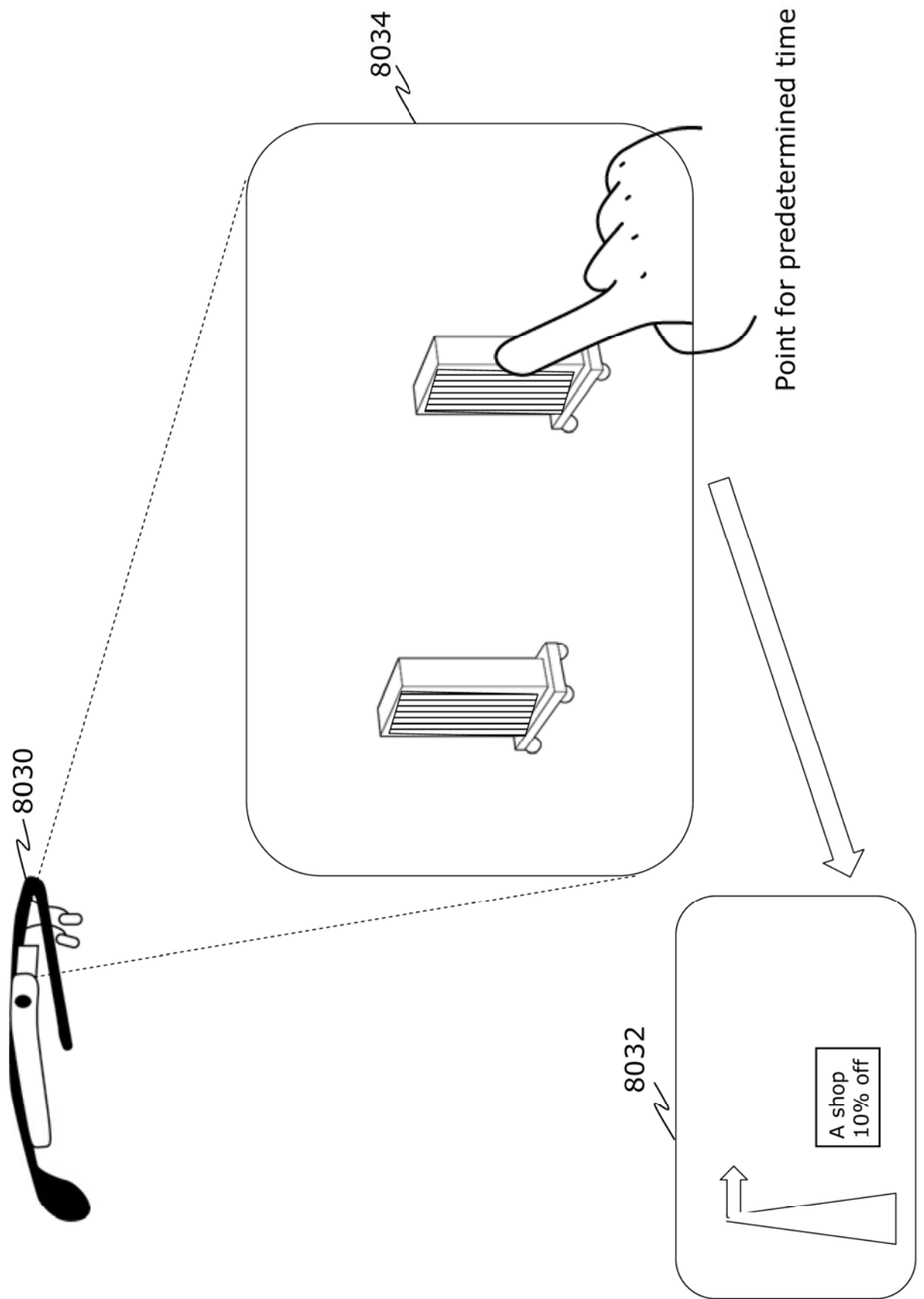


FIG. 356

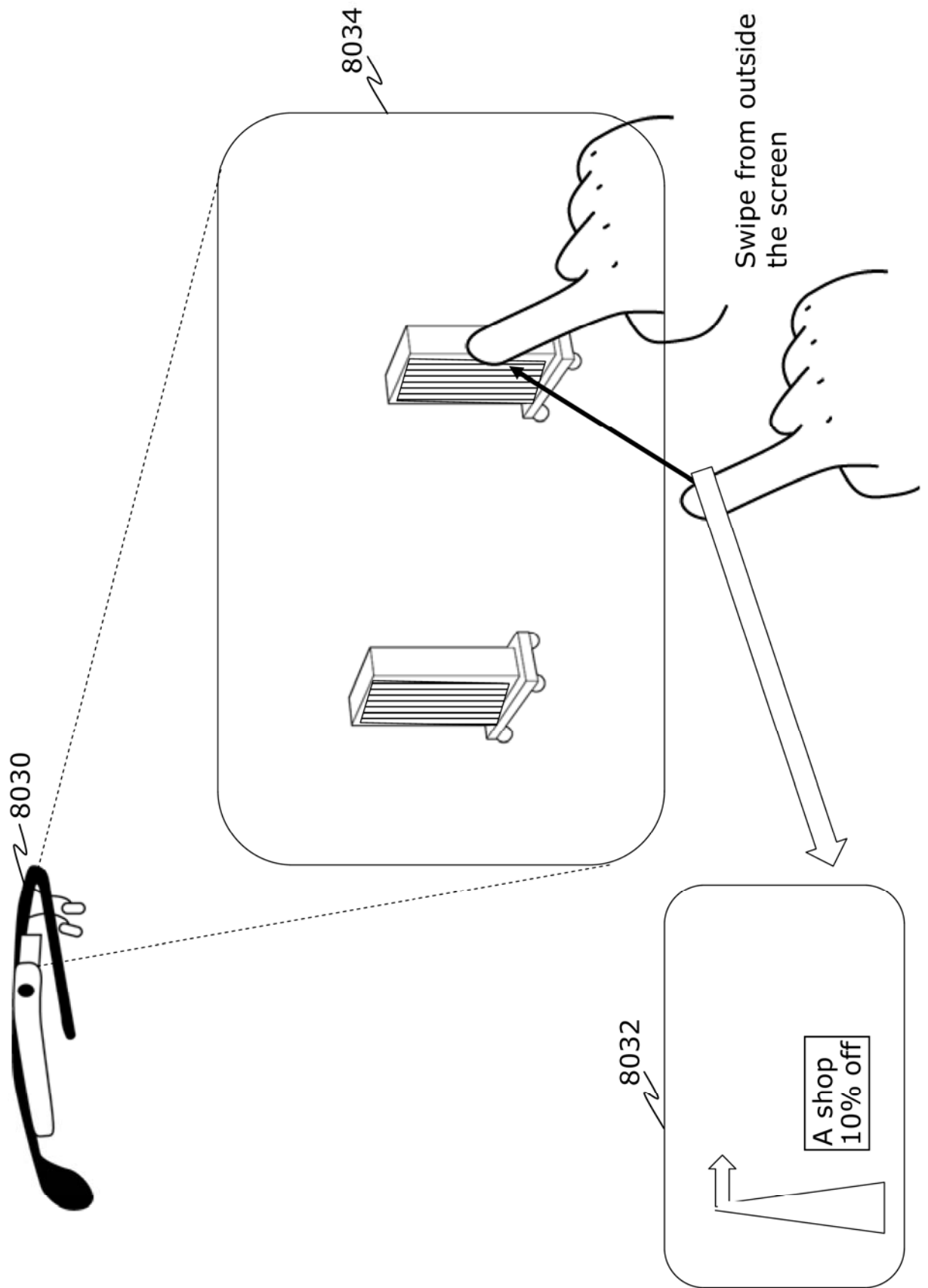




FIG. 357

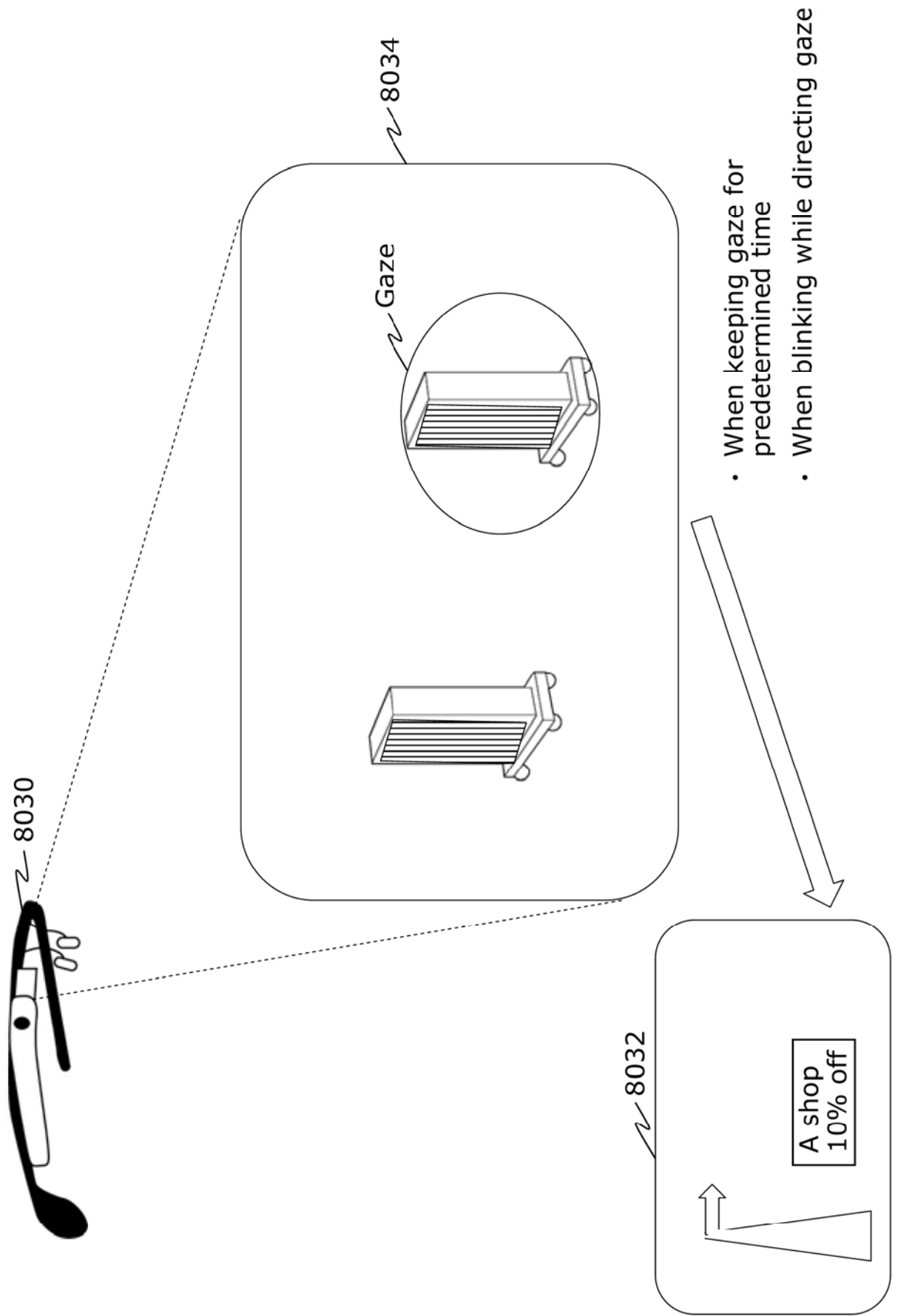


FIG. 358

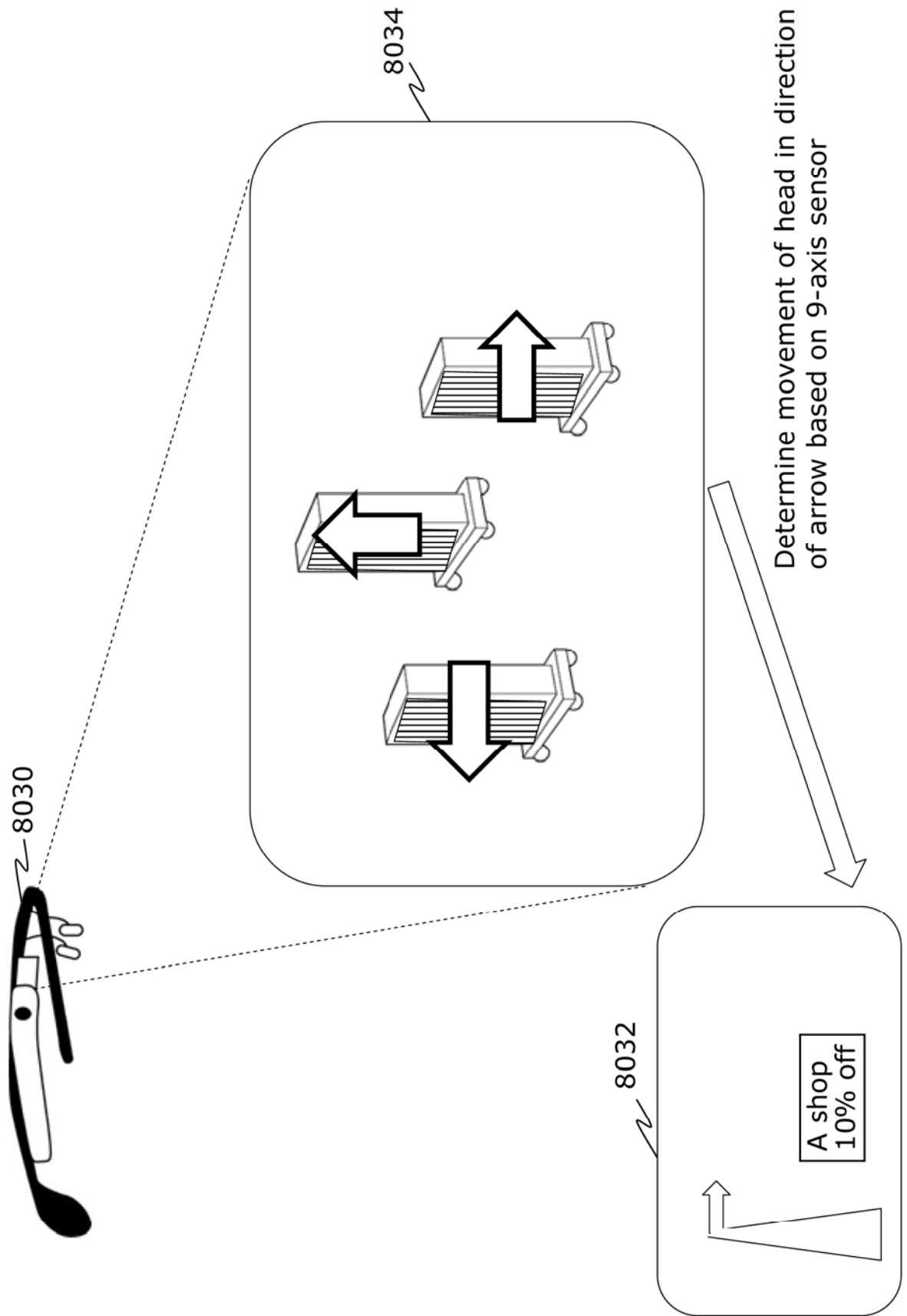


FIG. 359A

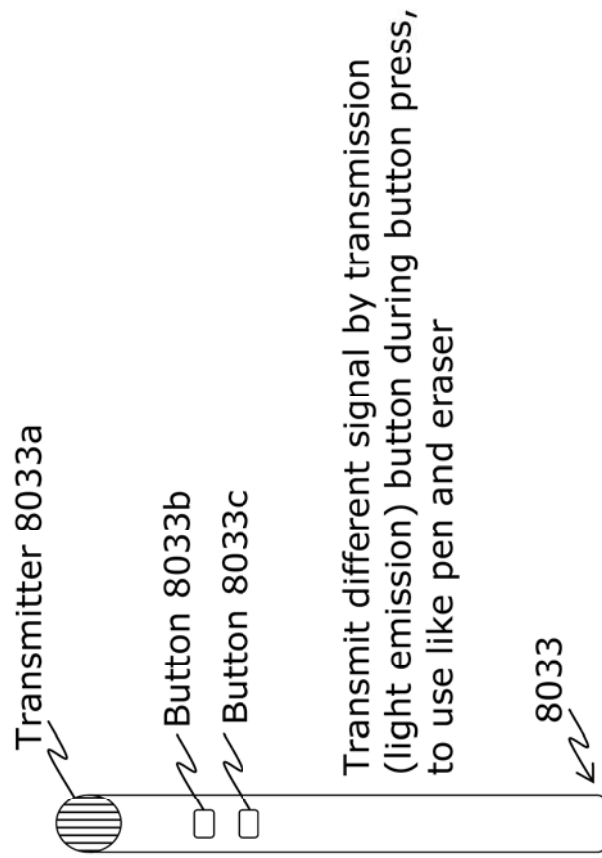


FIG. 359B

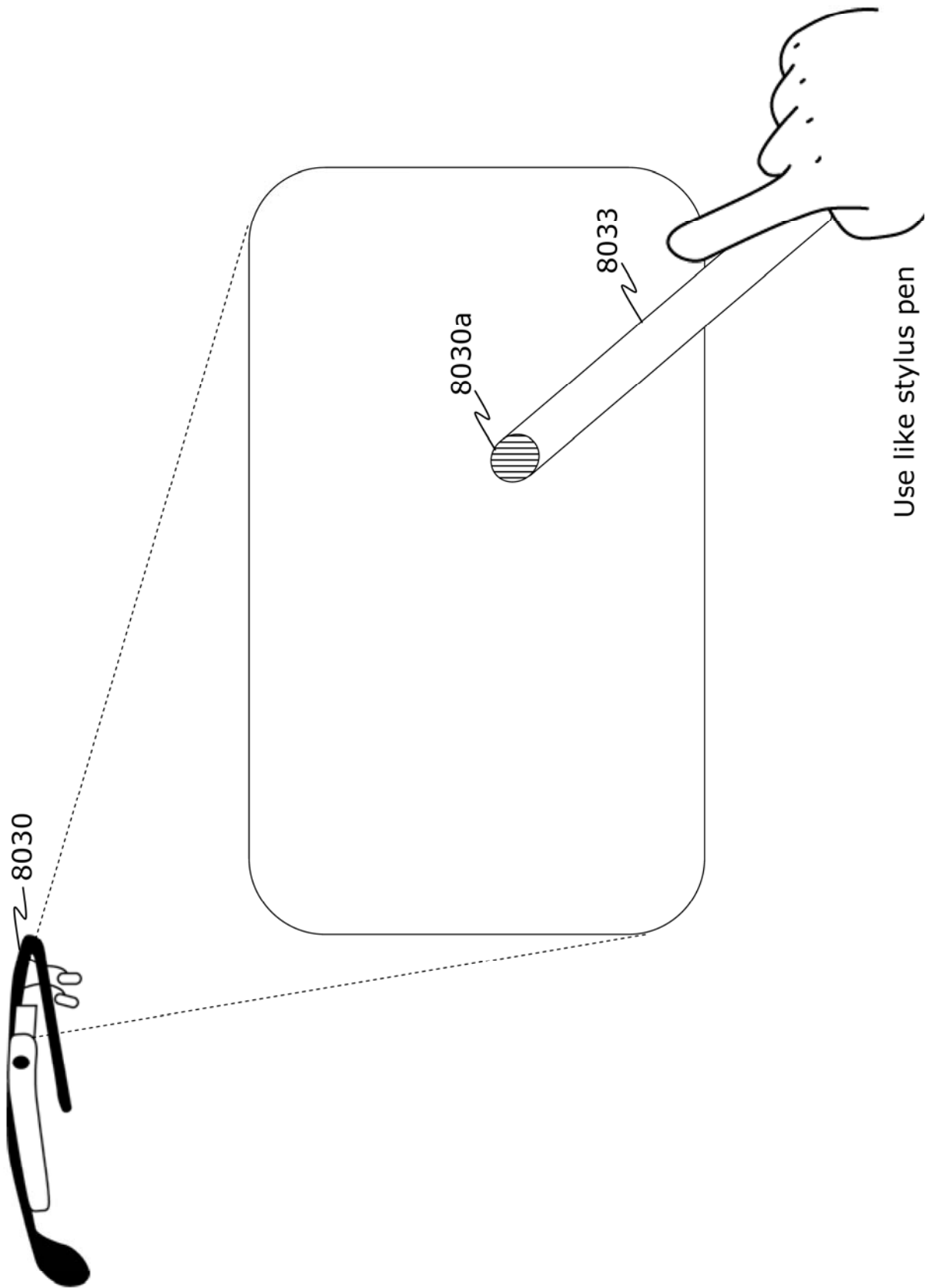


FIG. 360

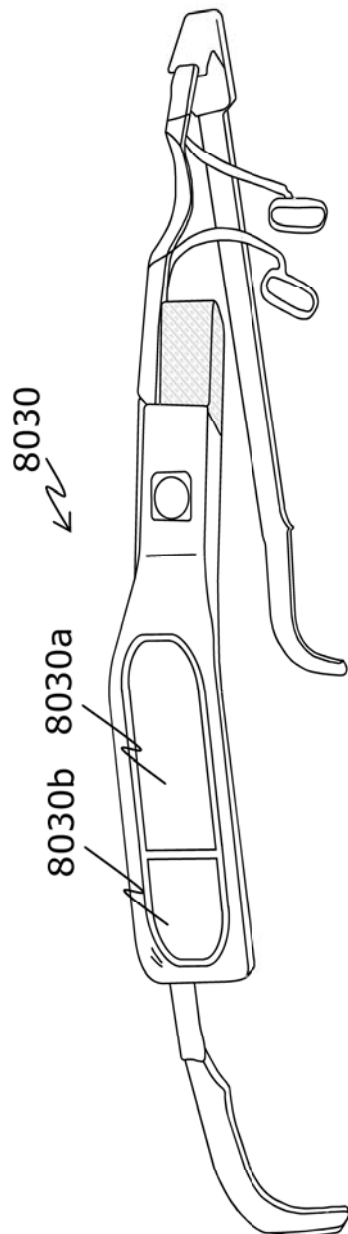


FIG. 361

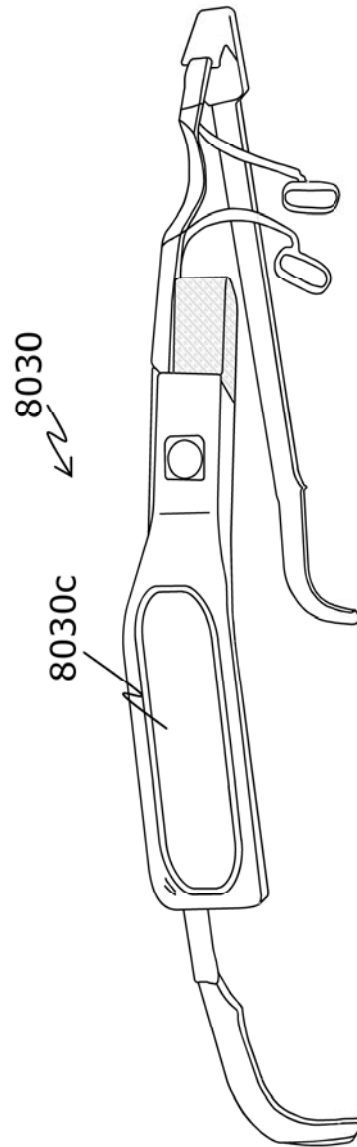


FIG. 362

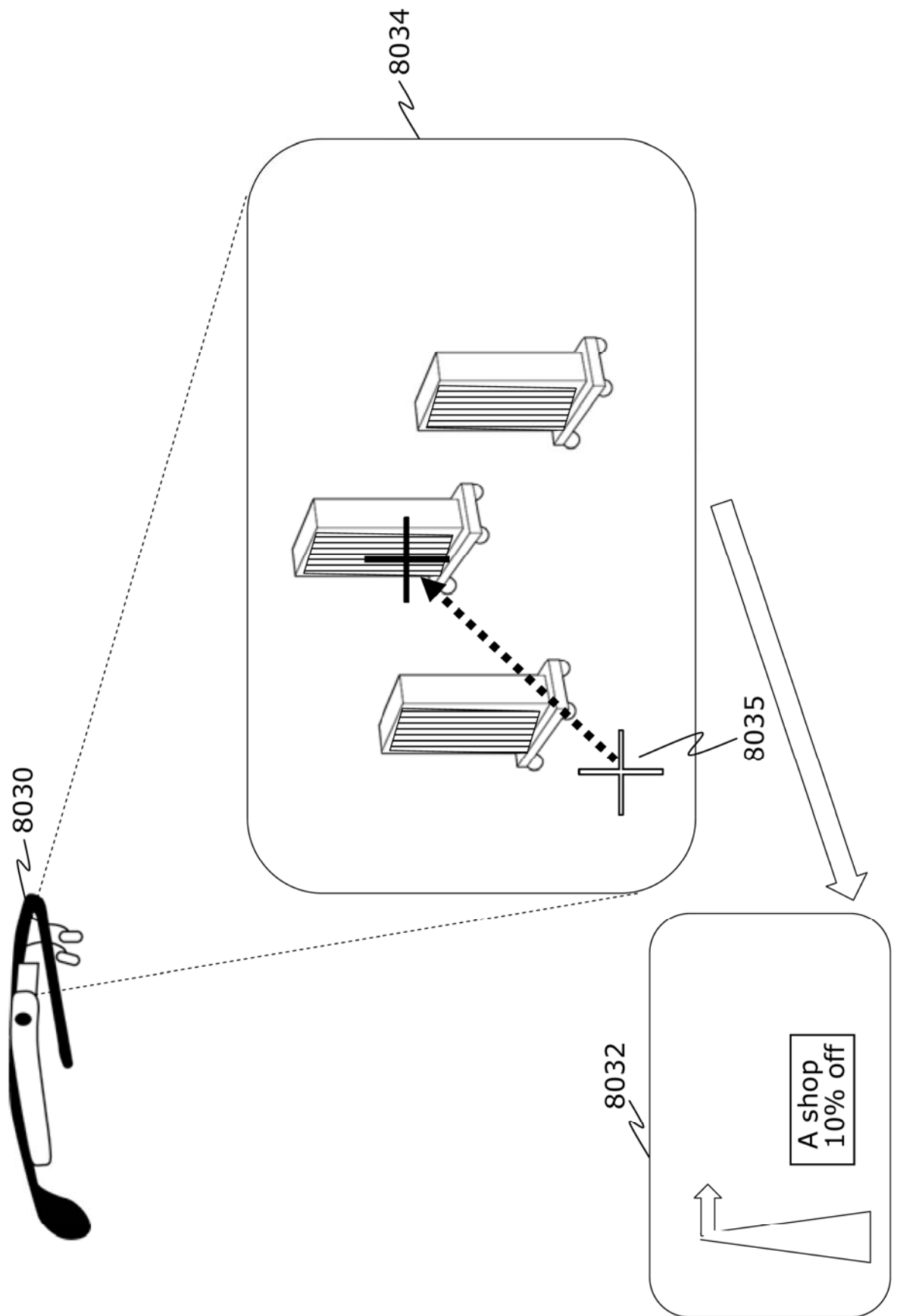


FIG. 363A

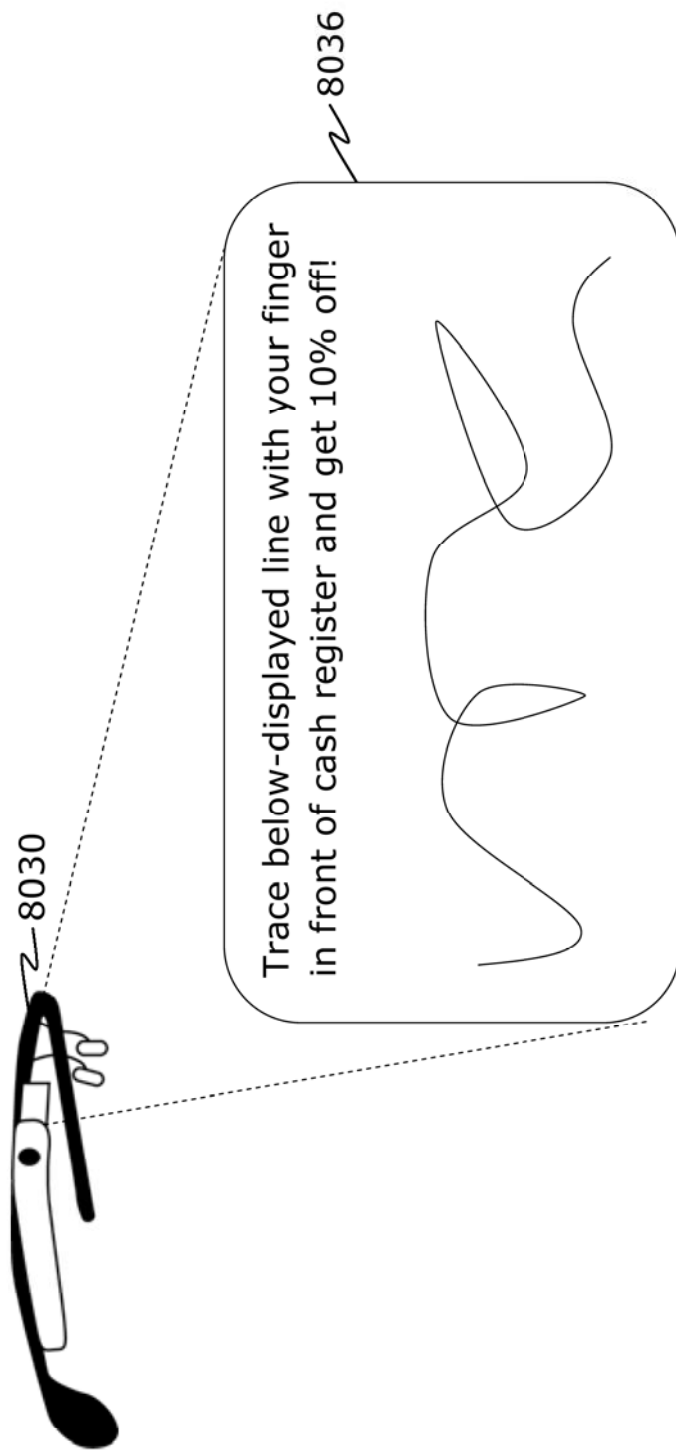


FIG. 363B

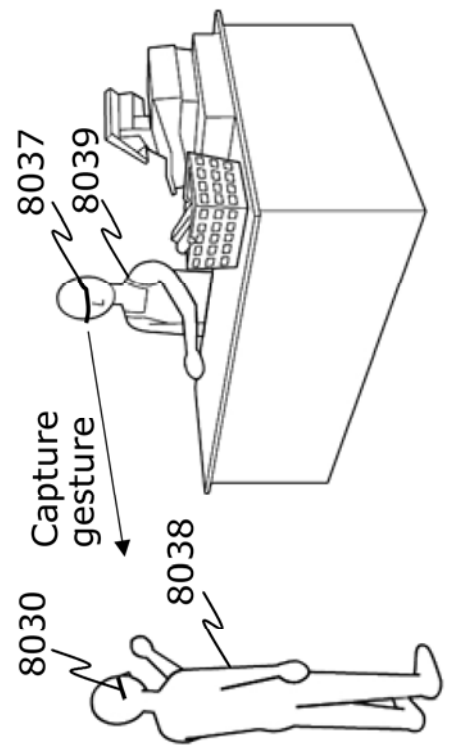




FIG. 364A

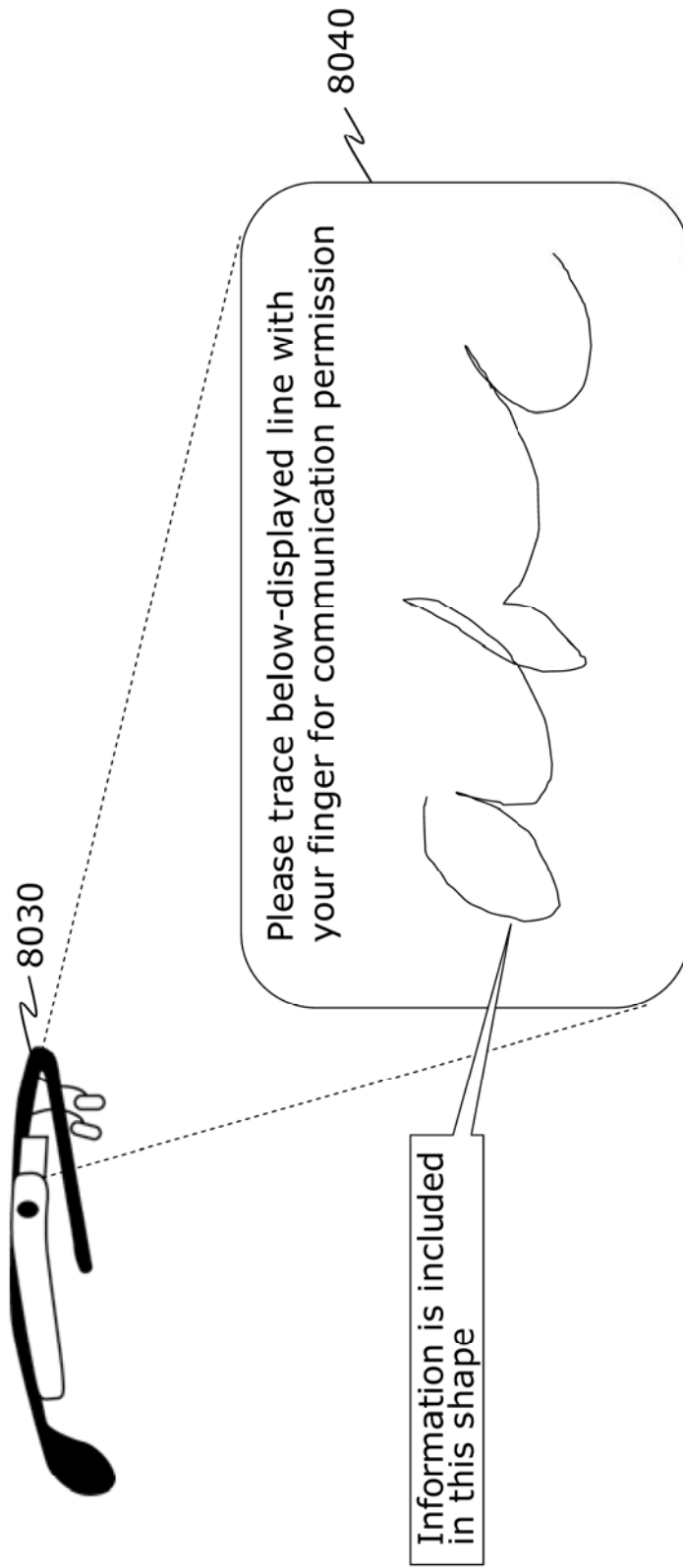


FIG. 364B

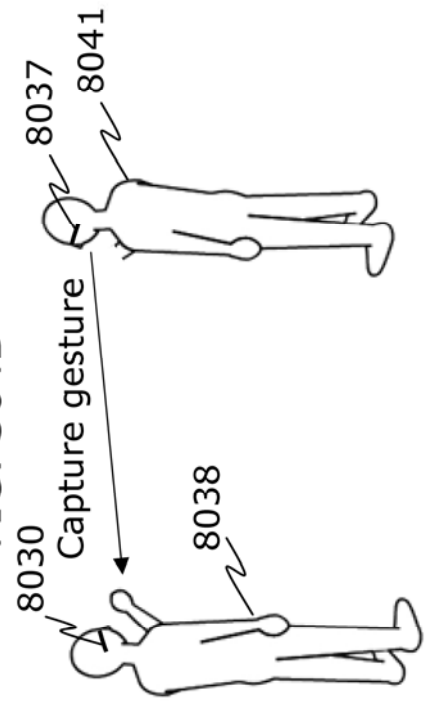
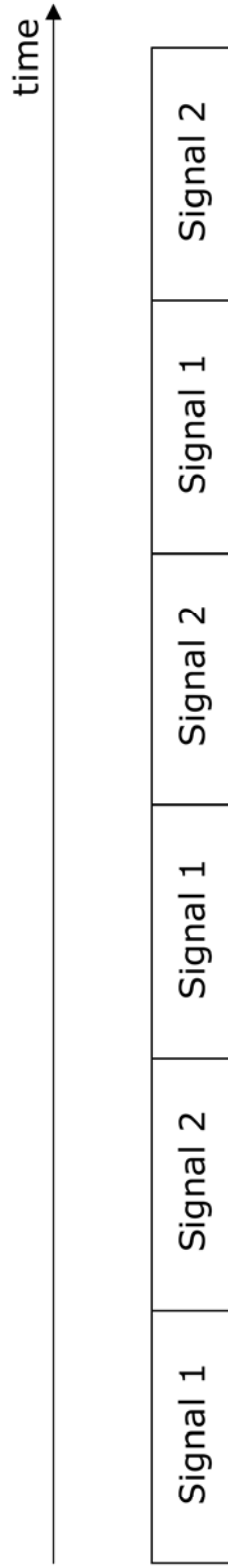


FIG. 365A



Alternately transmit signals of different types

FIG. 365B

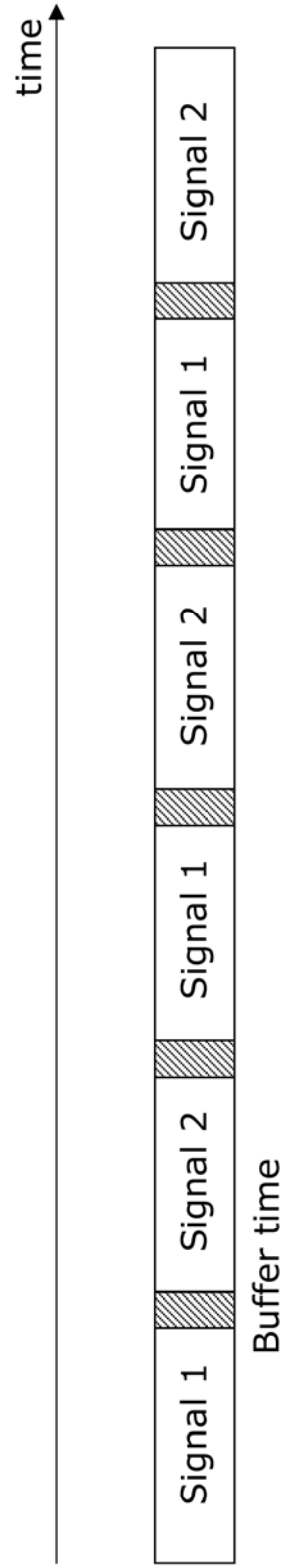


FIG. 366

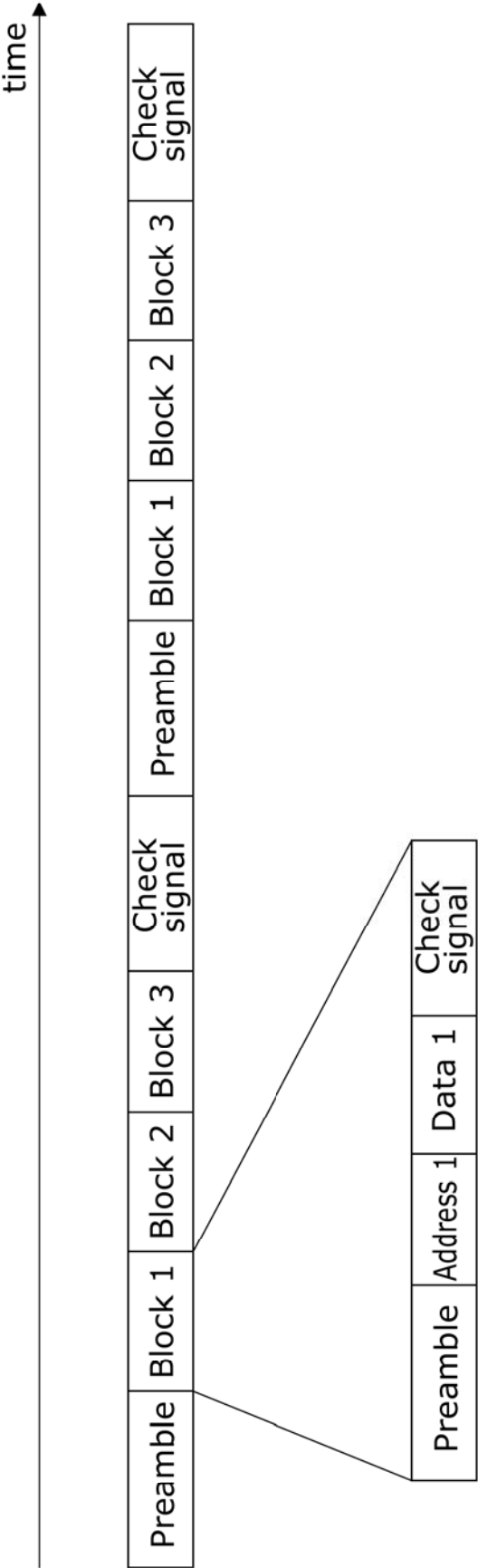


FIG. 367

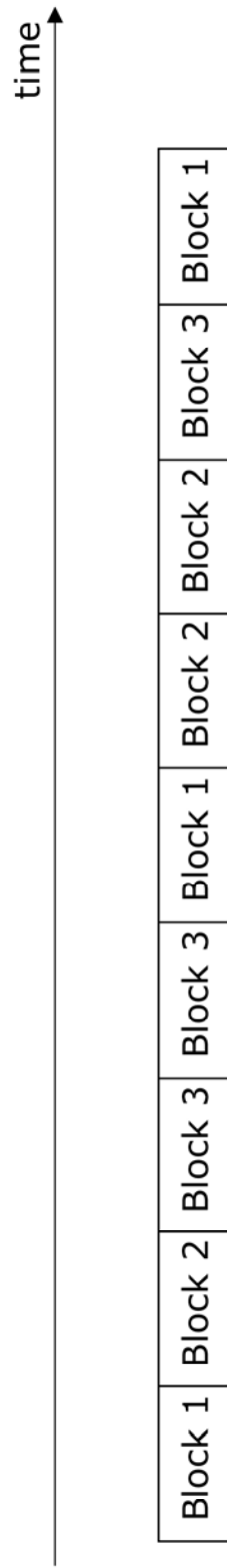


FIG. 368

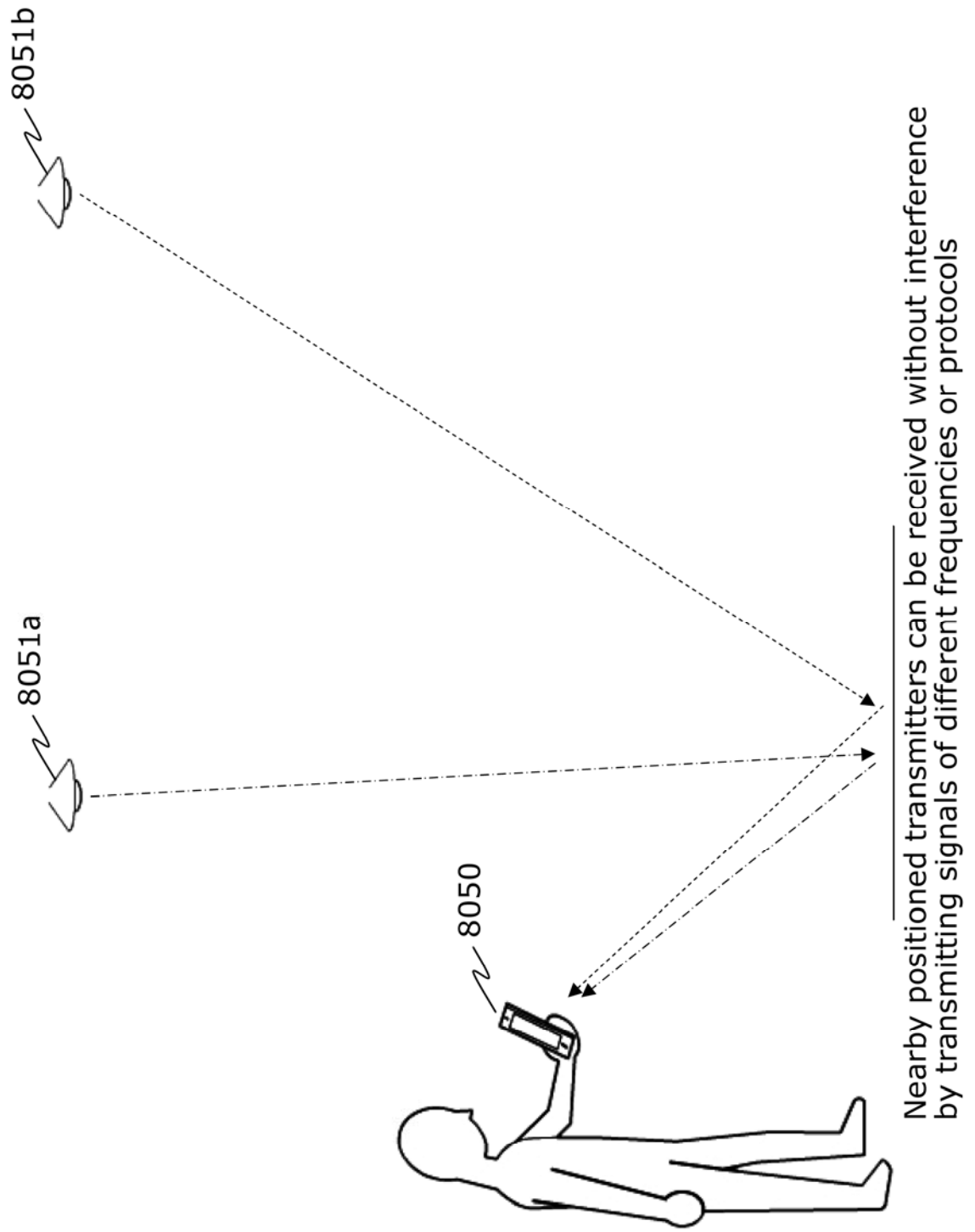
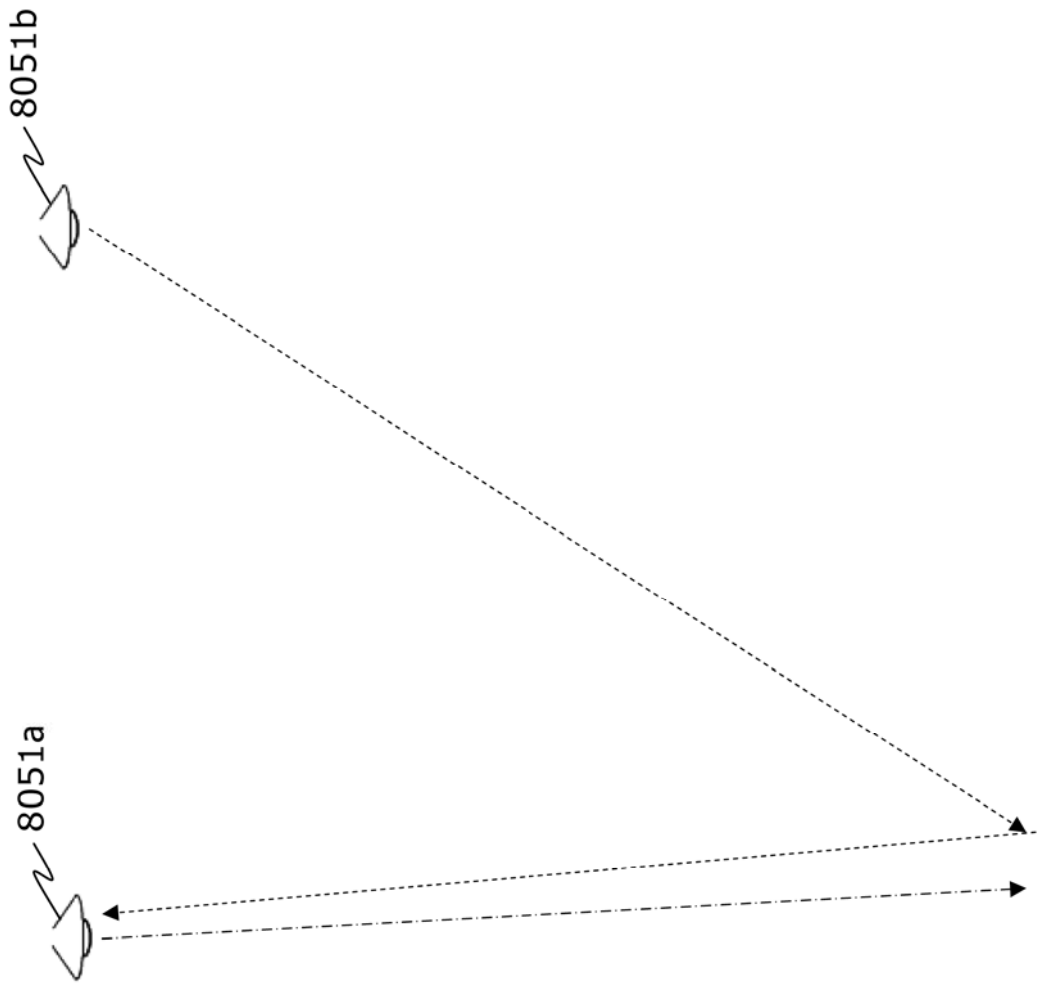


FIG. 369



Transmitter receives signal from other transmitter, and changes transmission protocol or transmits signal in period during which other transmitter is not transmitting signal, to prevent its transmission signal from interfering with transmission signal from other transmitter

FIG. 370

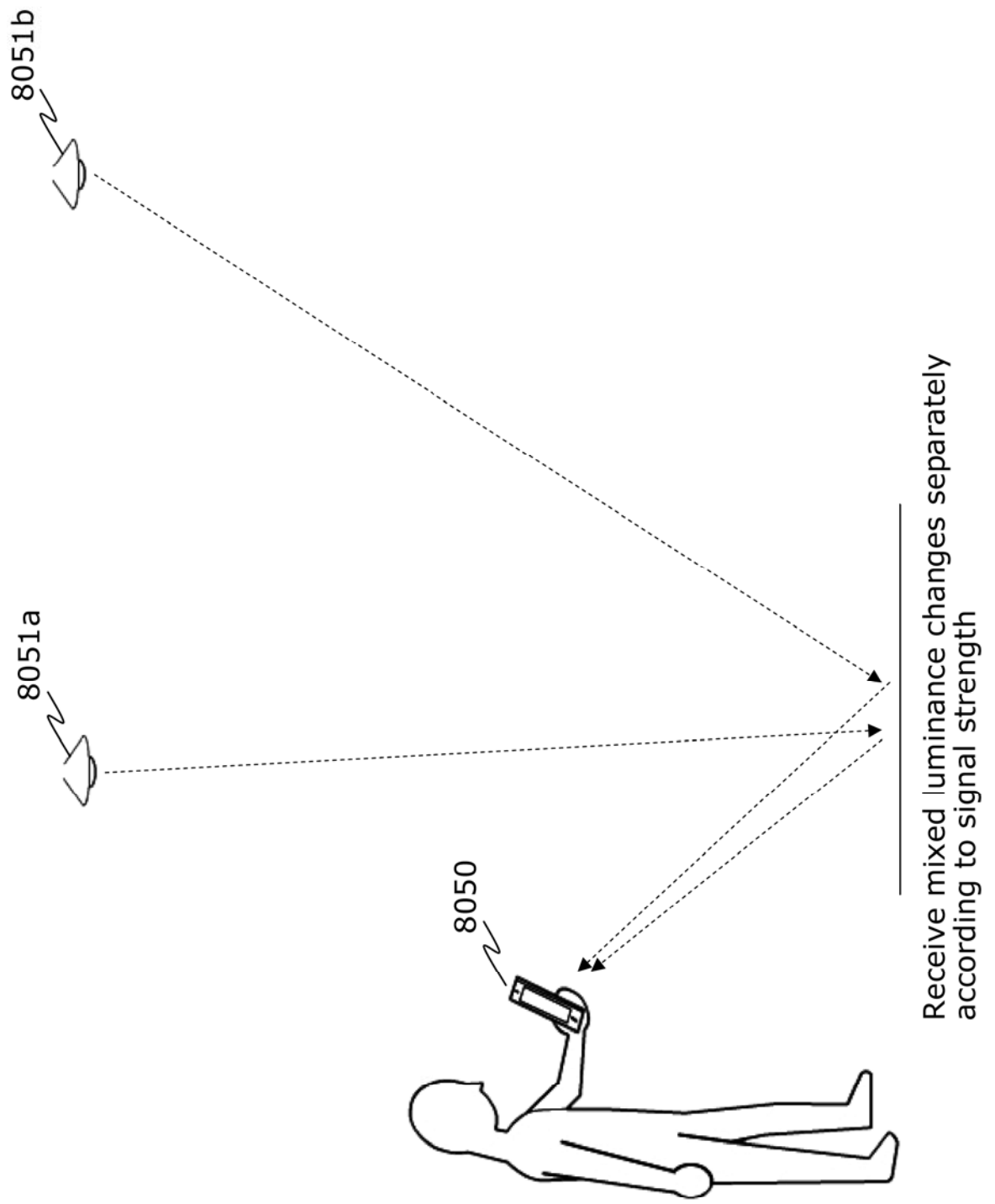


FIG. 371

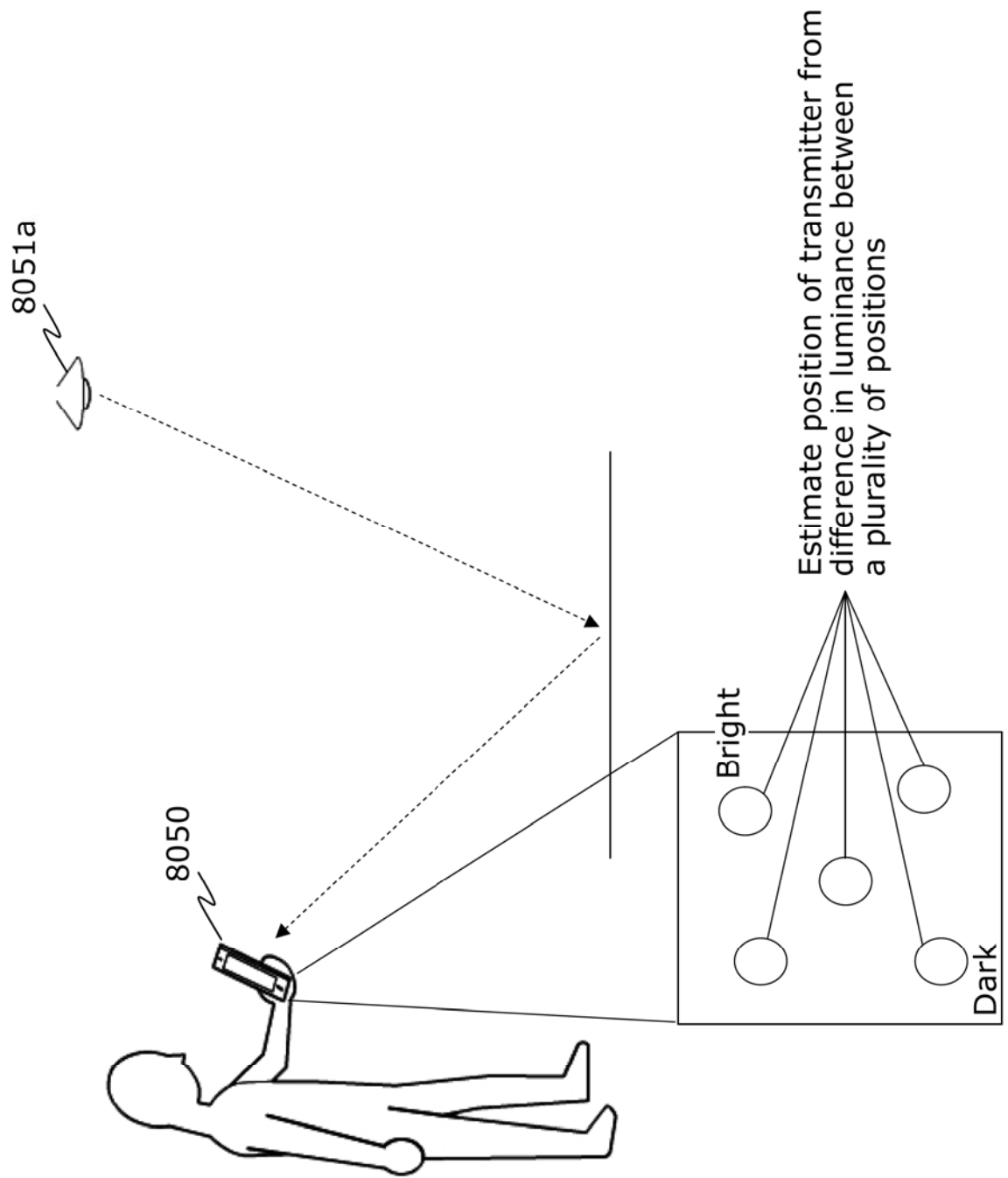




FIG. 372

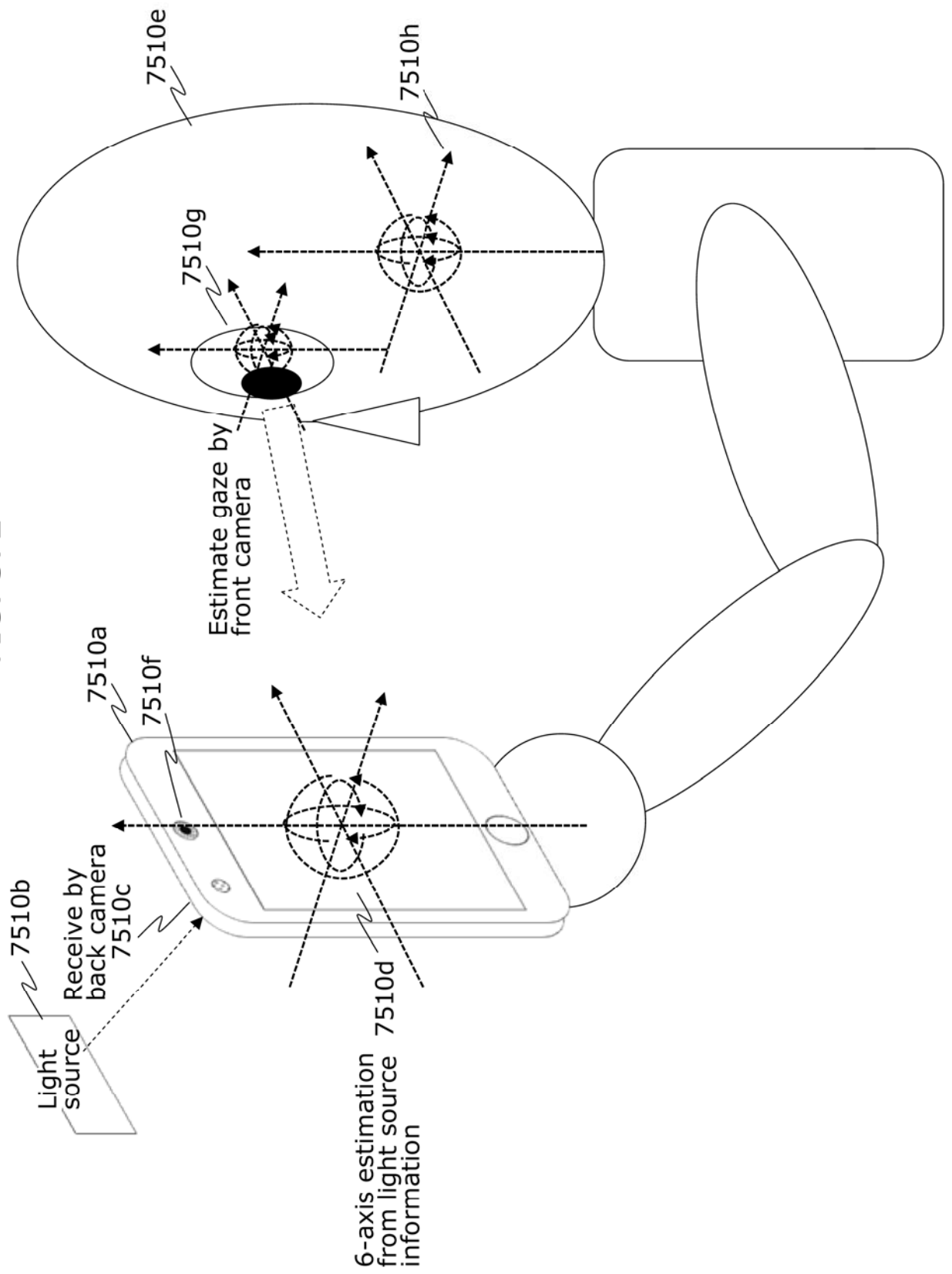


FIG. 373

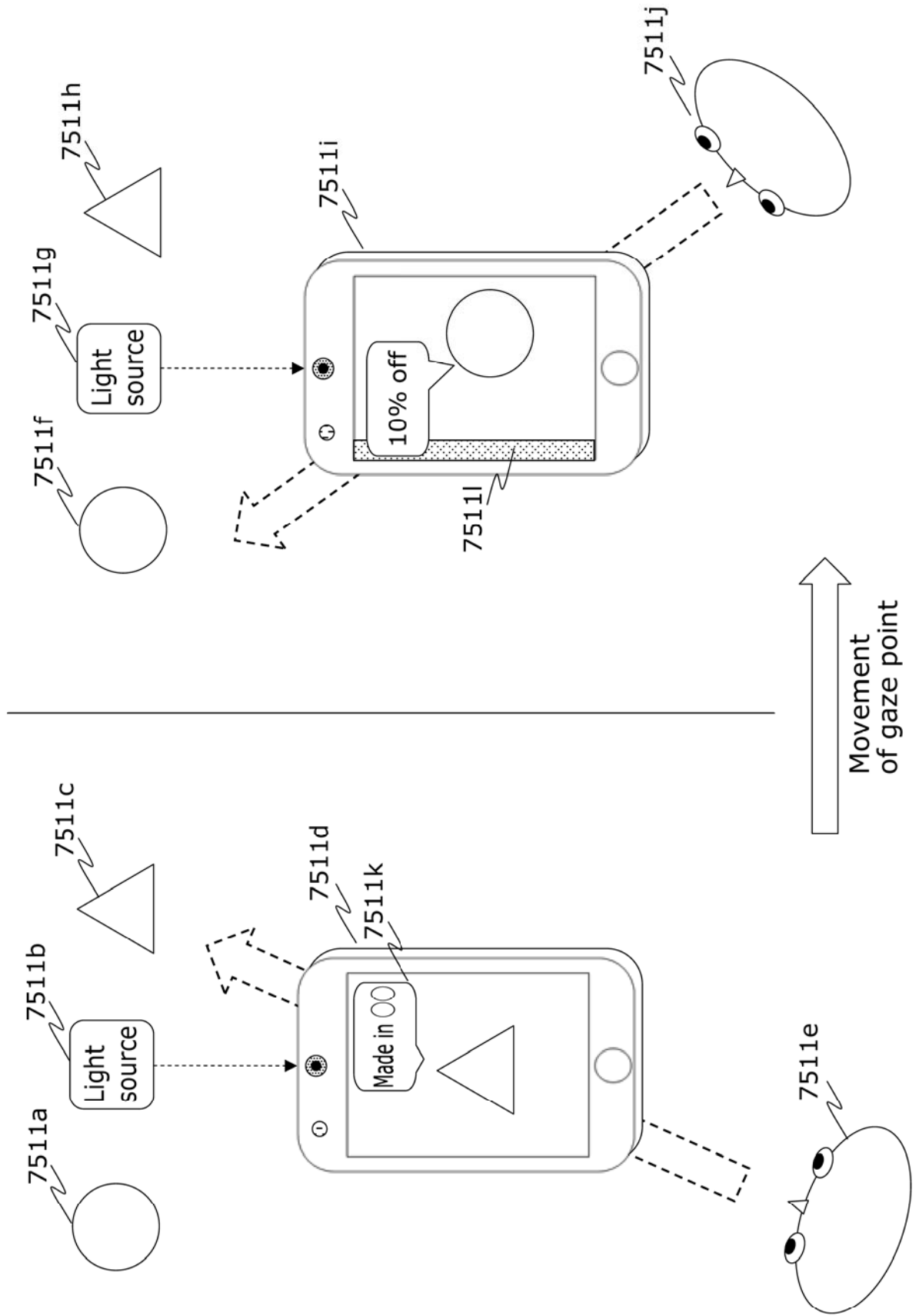


FIG. 374

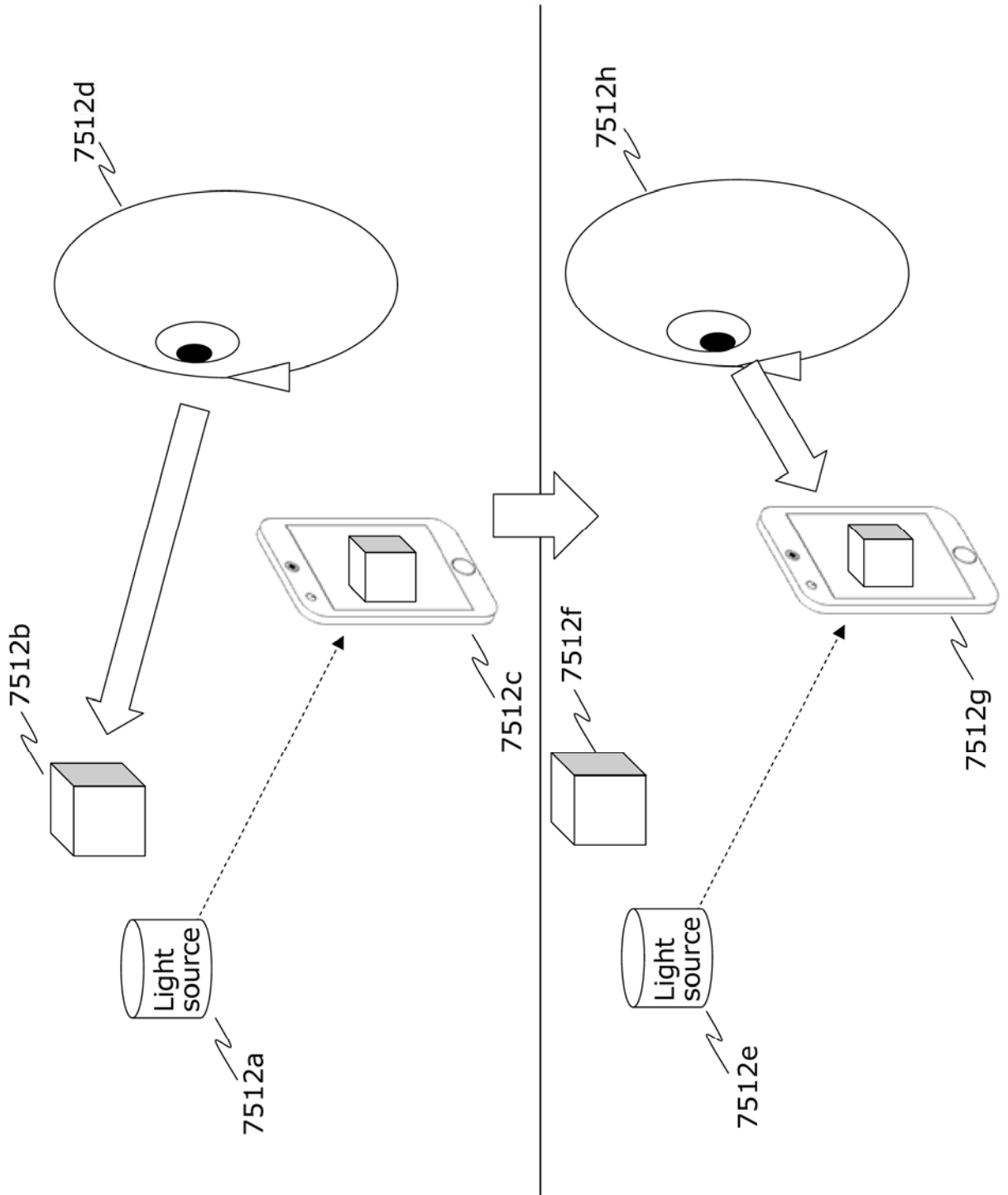


FIG. 375

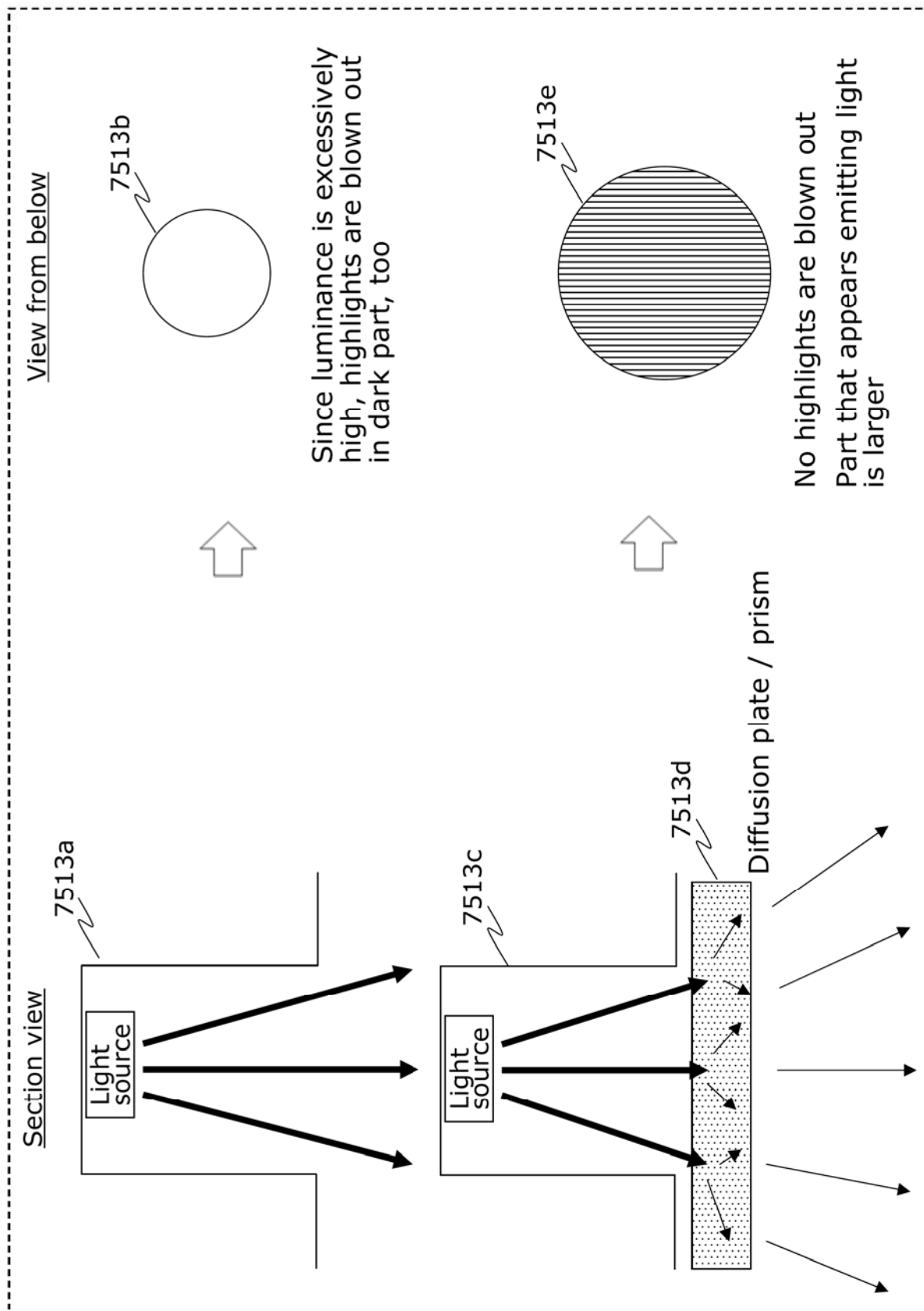


FIG. 376

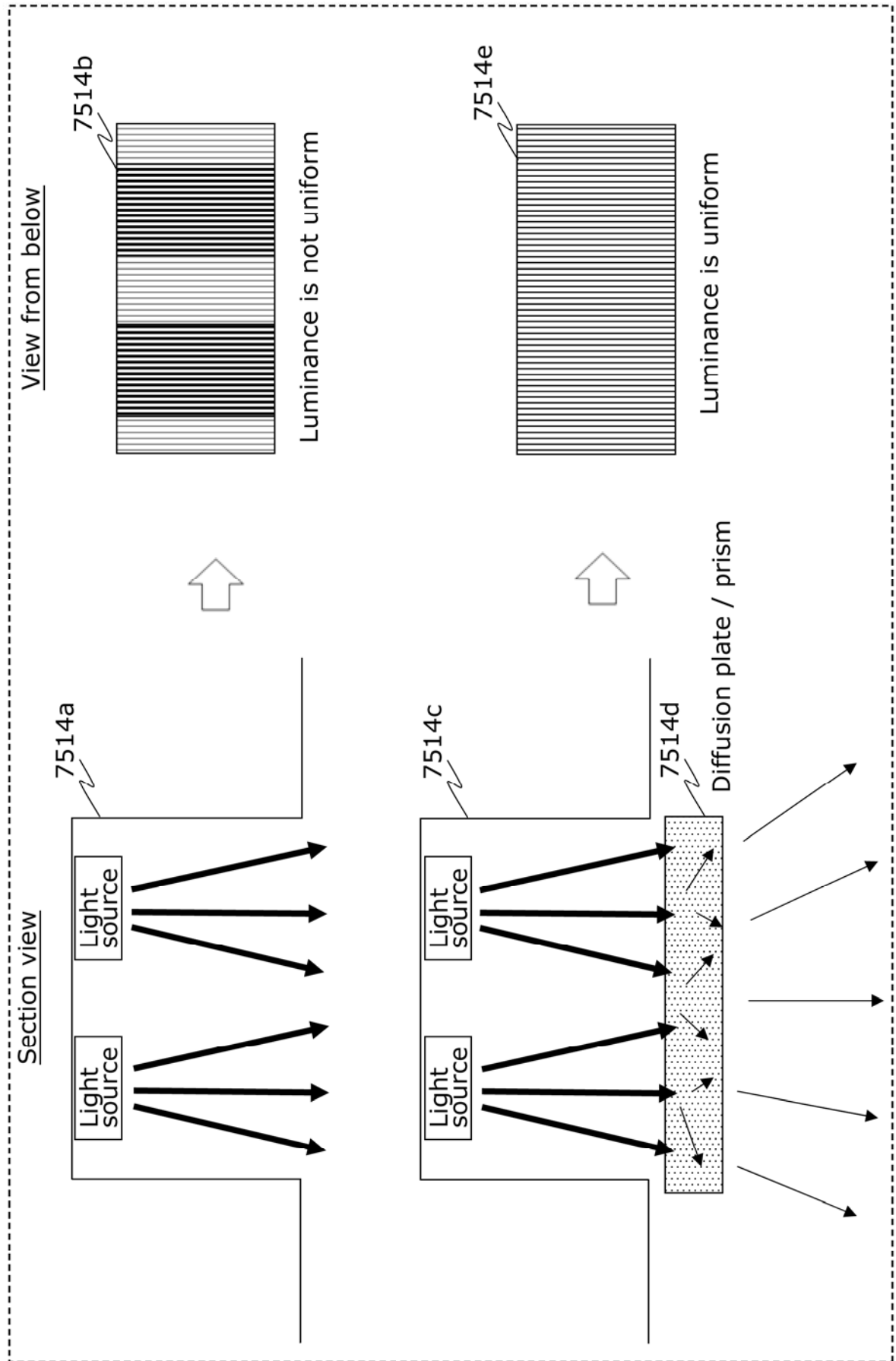


FIG. 377

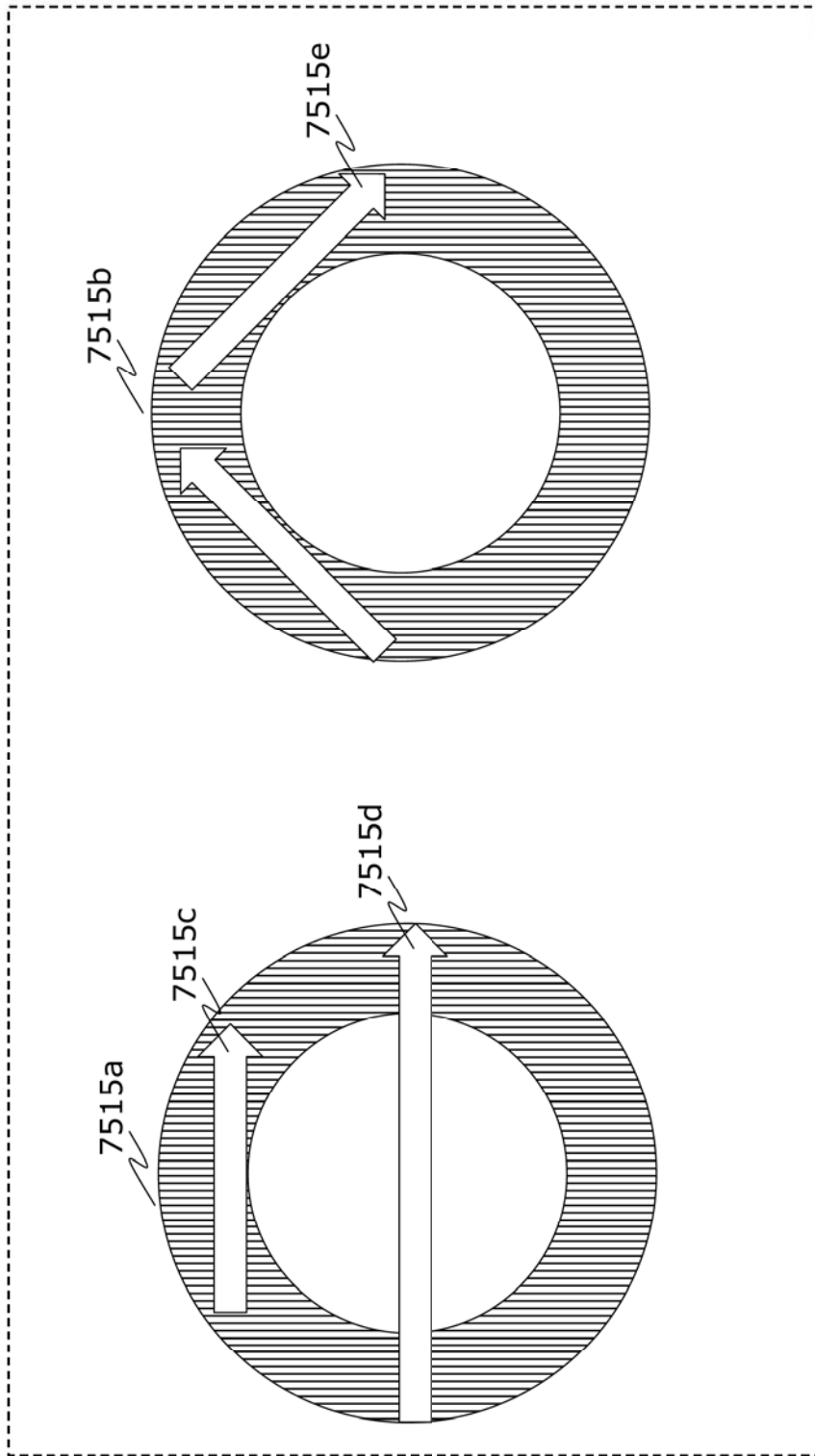


FIG. 378

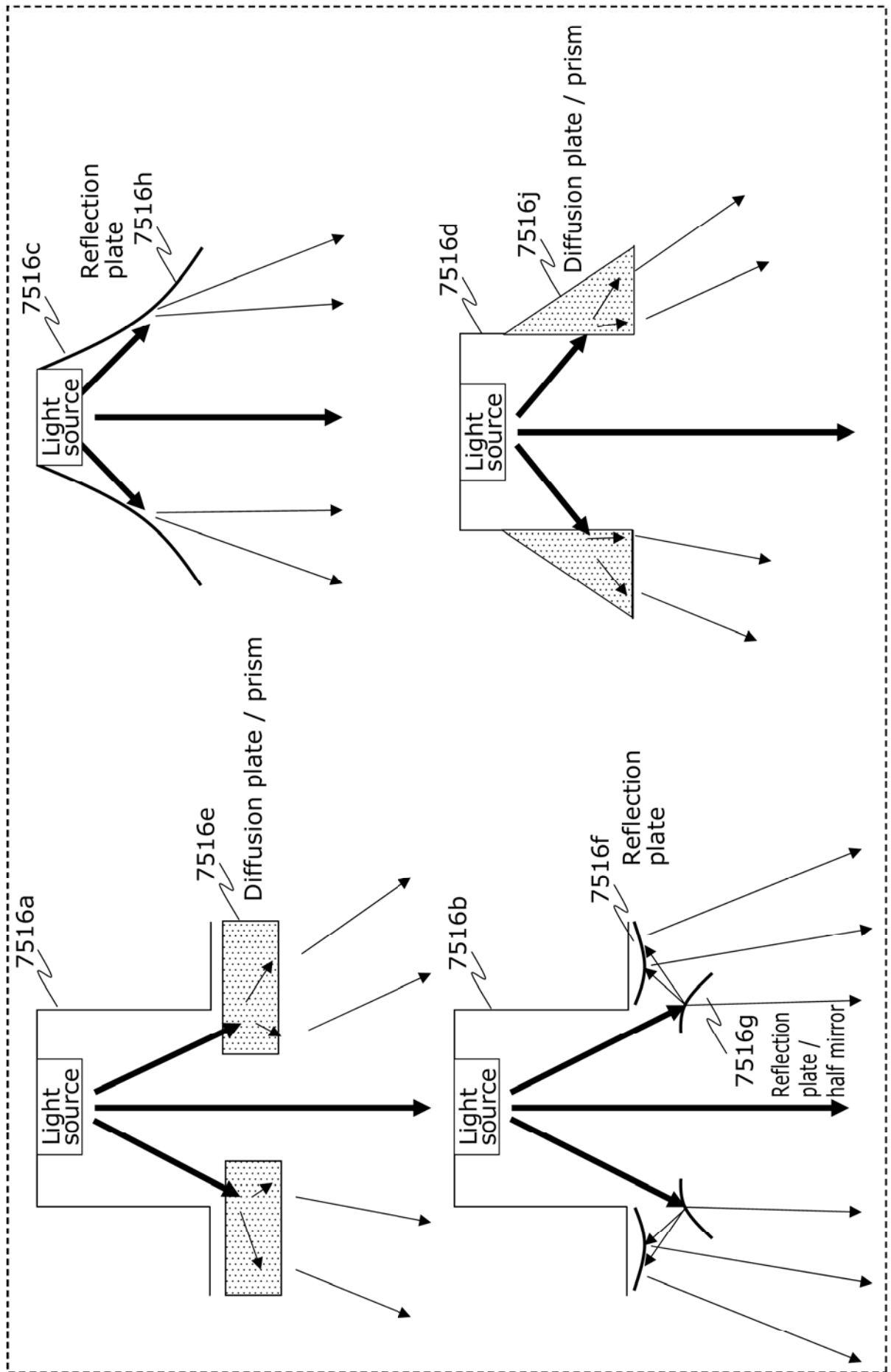


FIG. 379

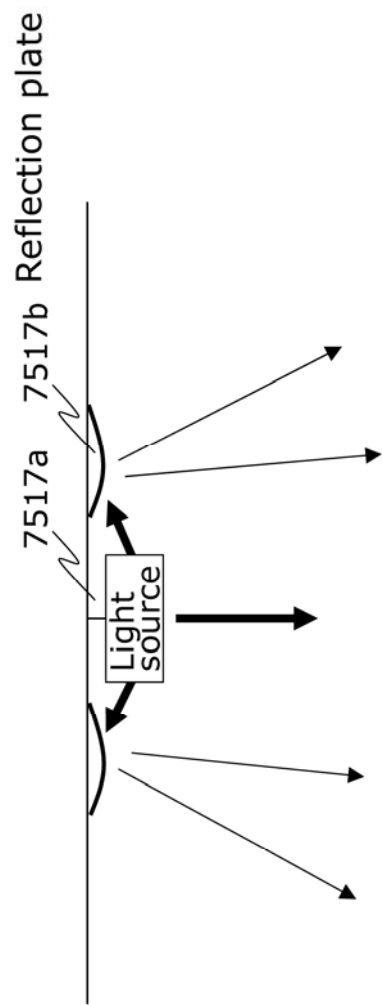




FIG. 380

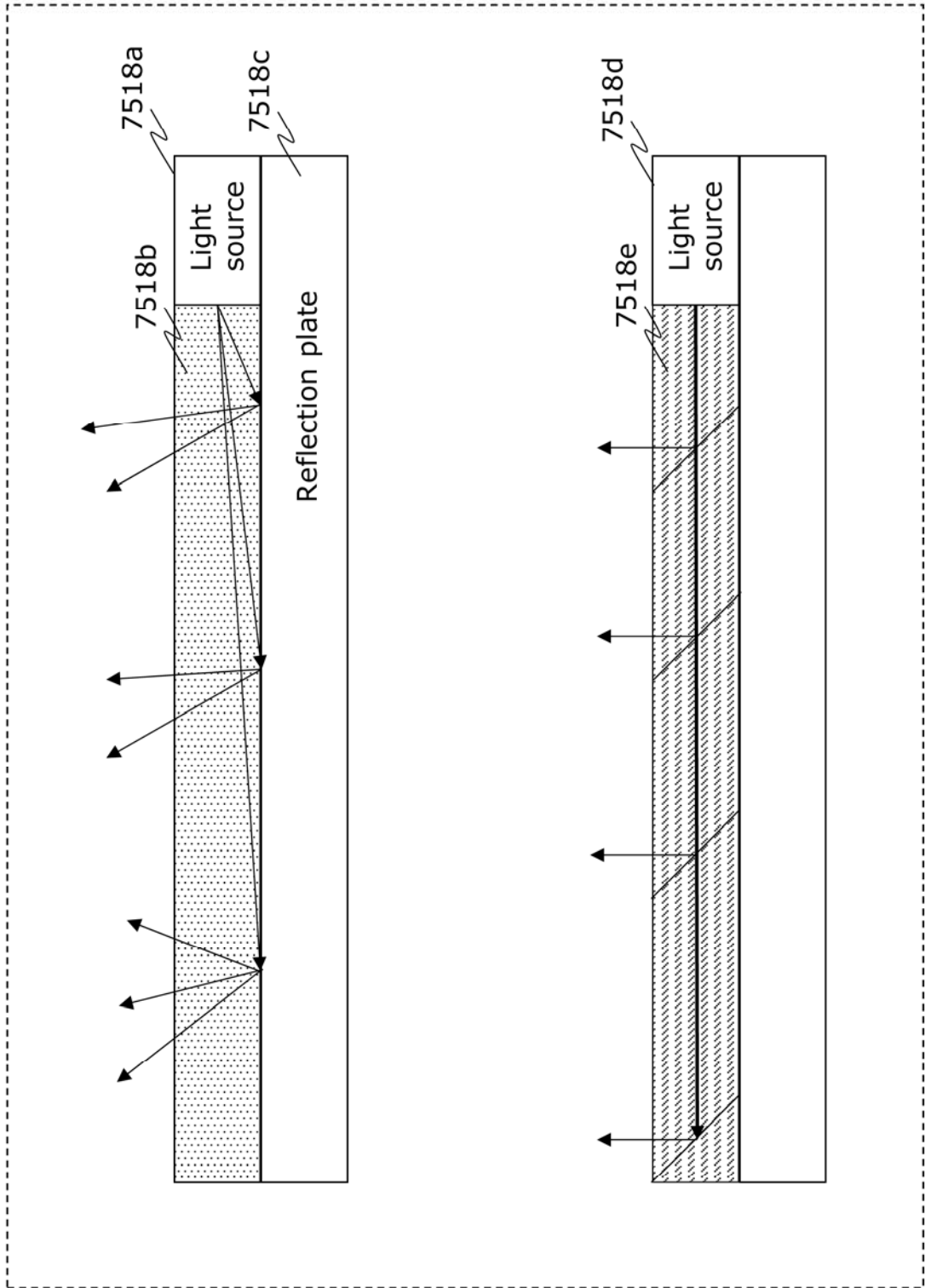
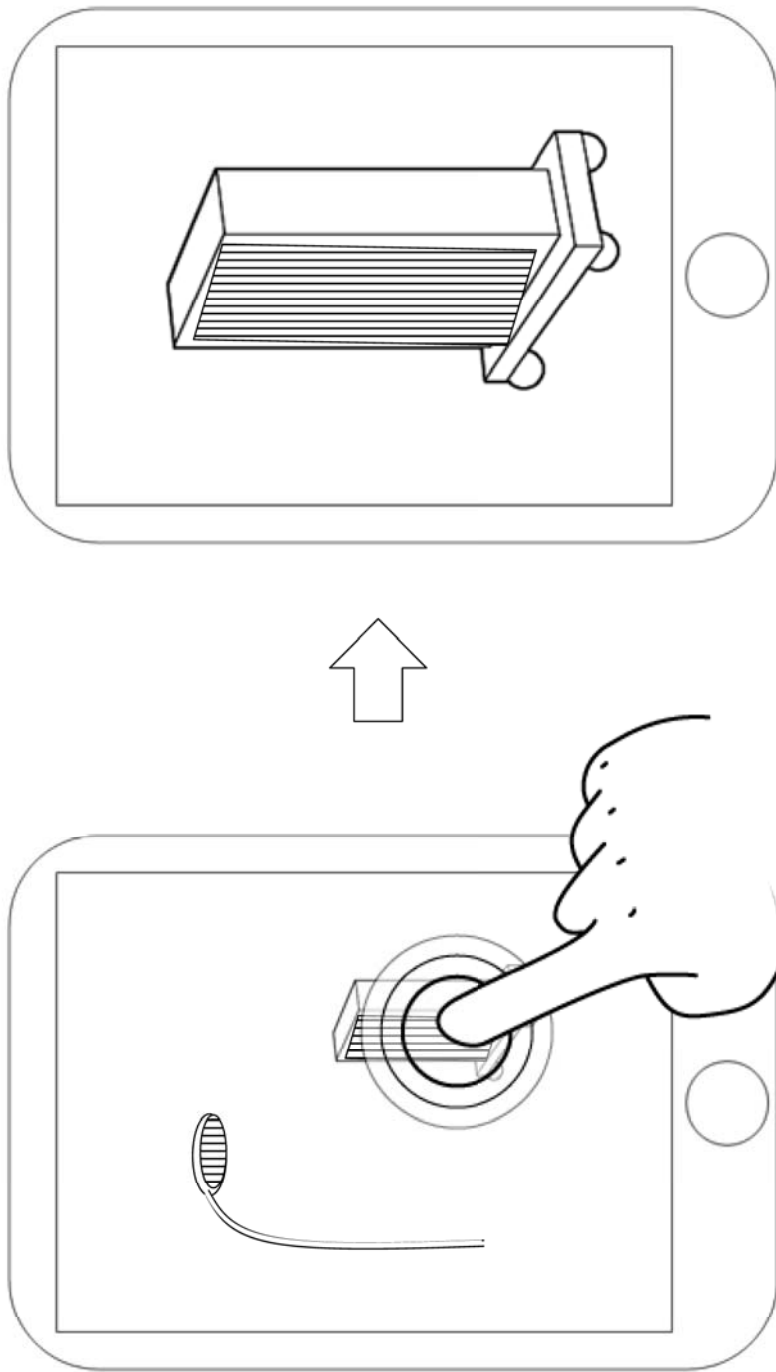


FIG. 381



Zoom in and receive signal

FIG. 382

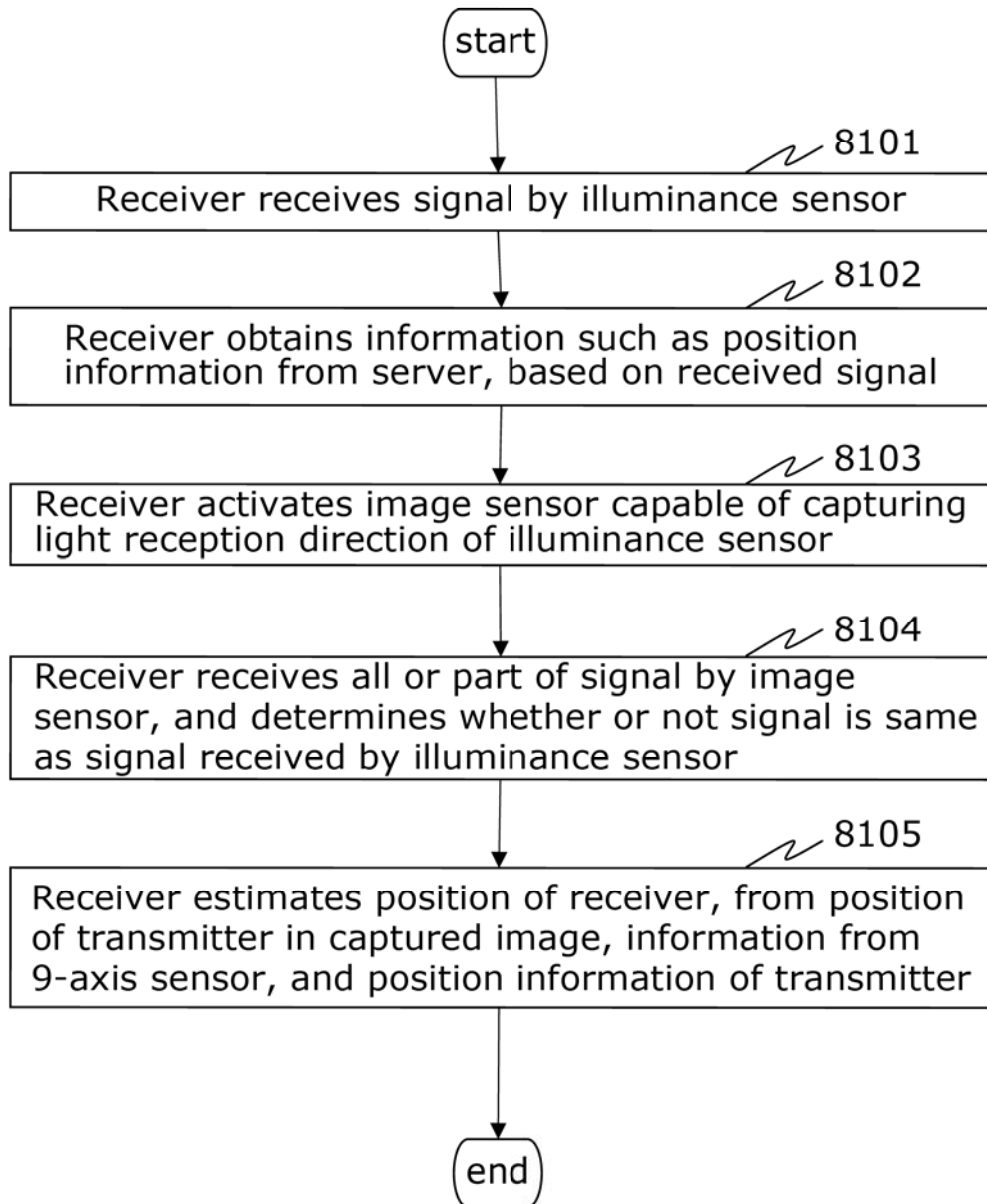
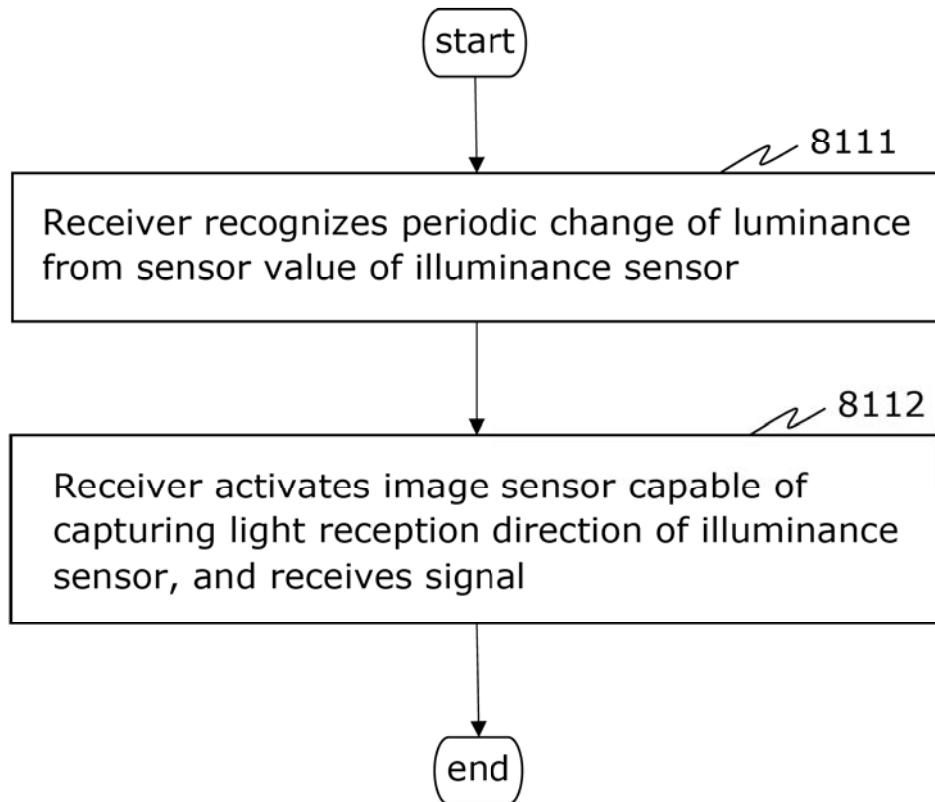


FIG. 383



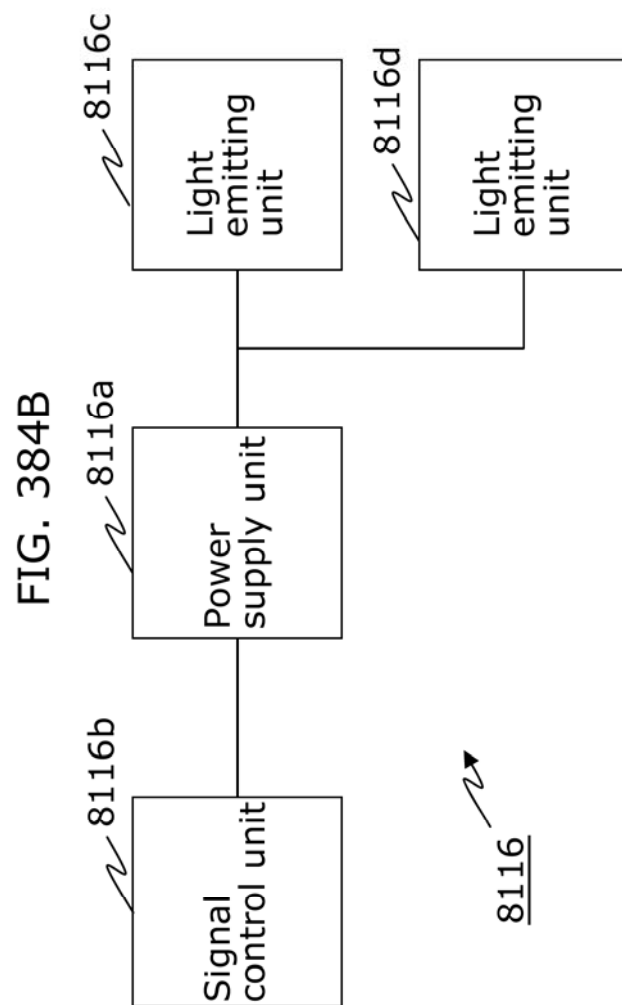
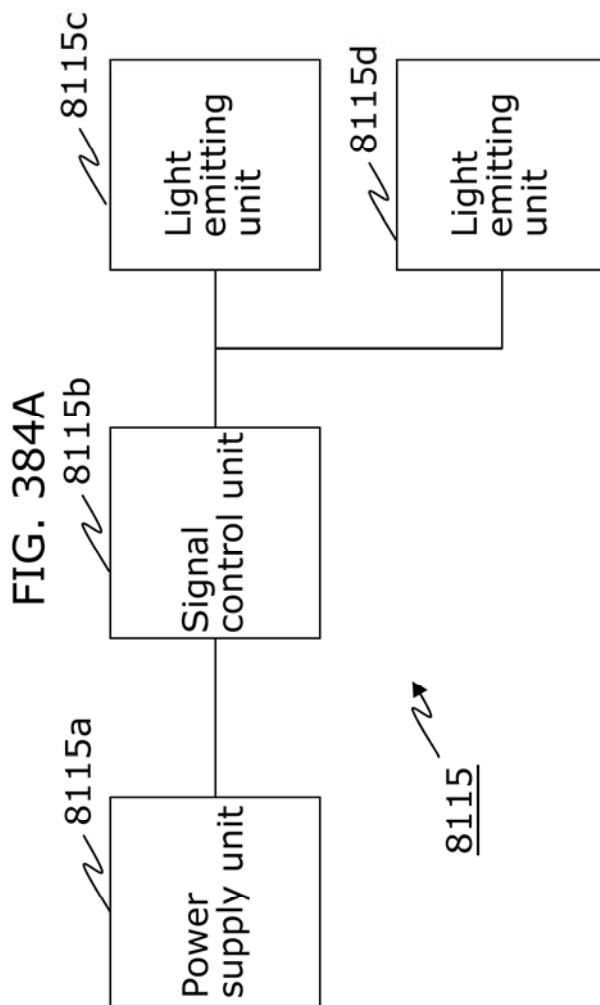


FIG. 385

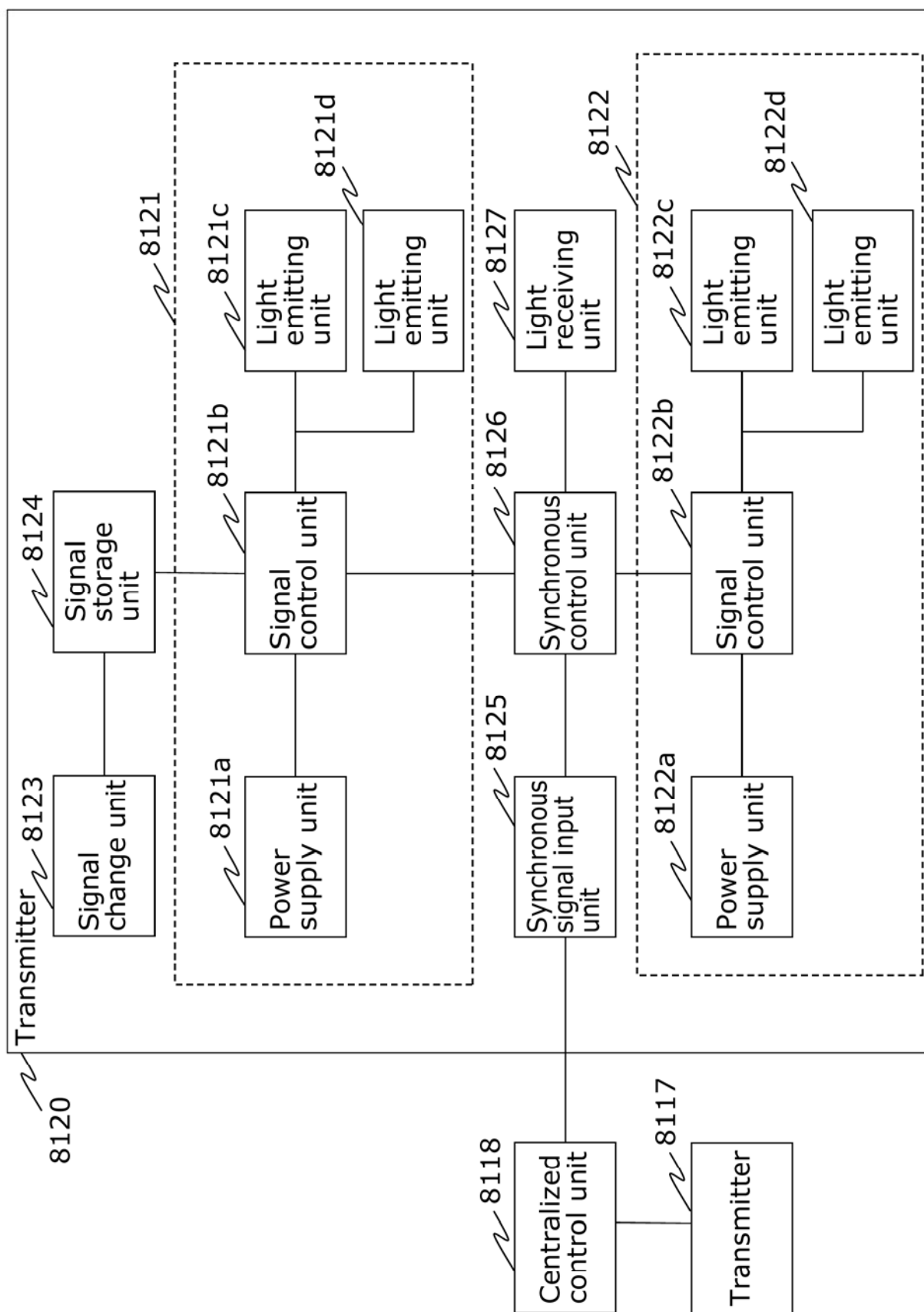


FIG. 386

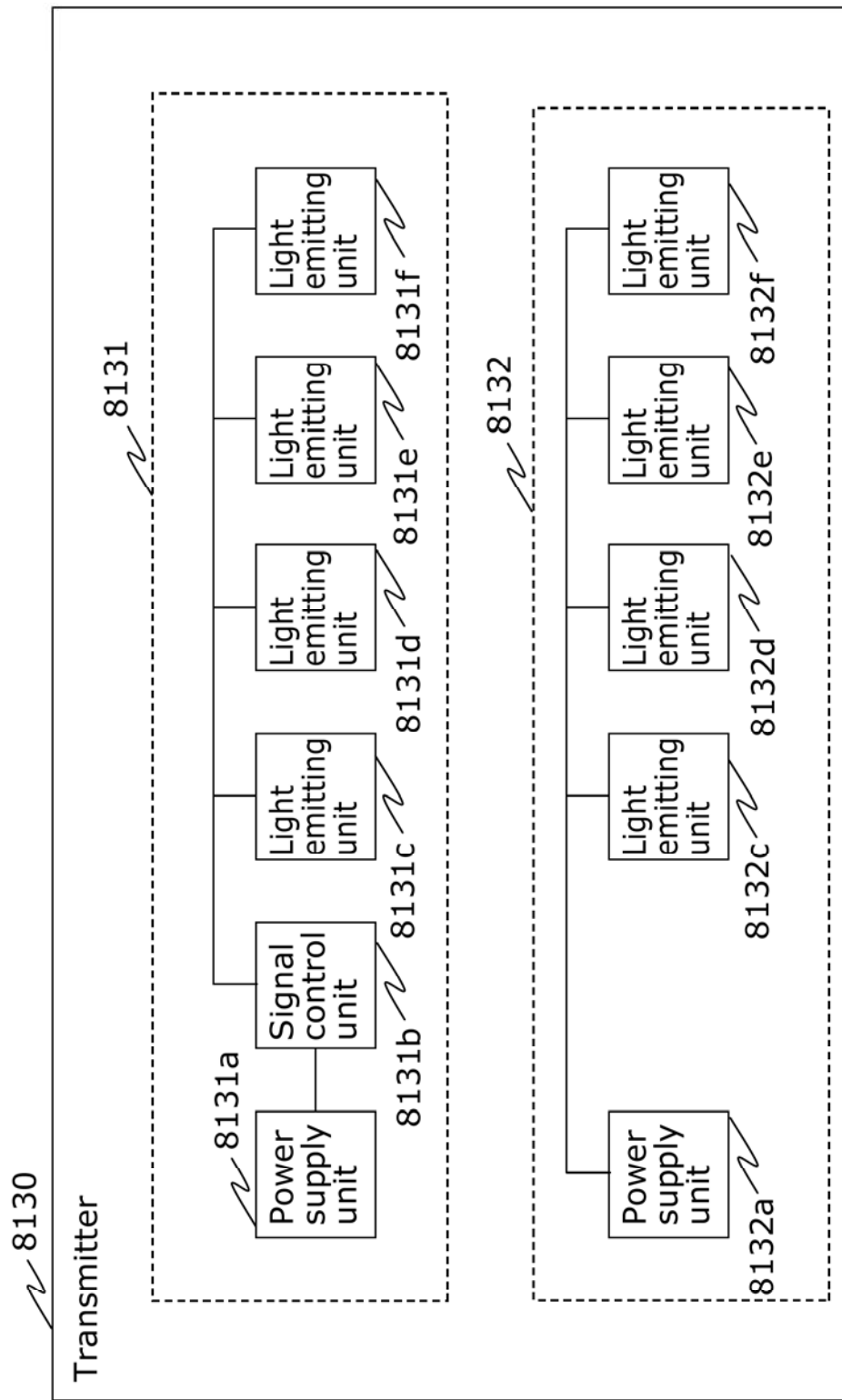


FIG. 387A

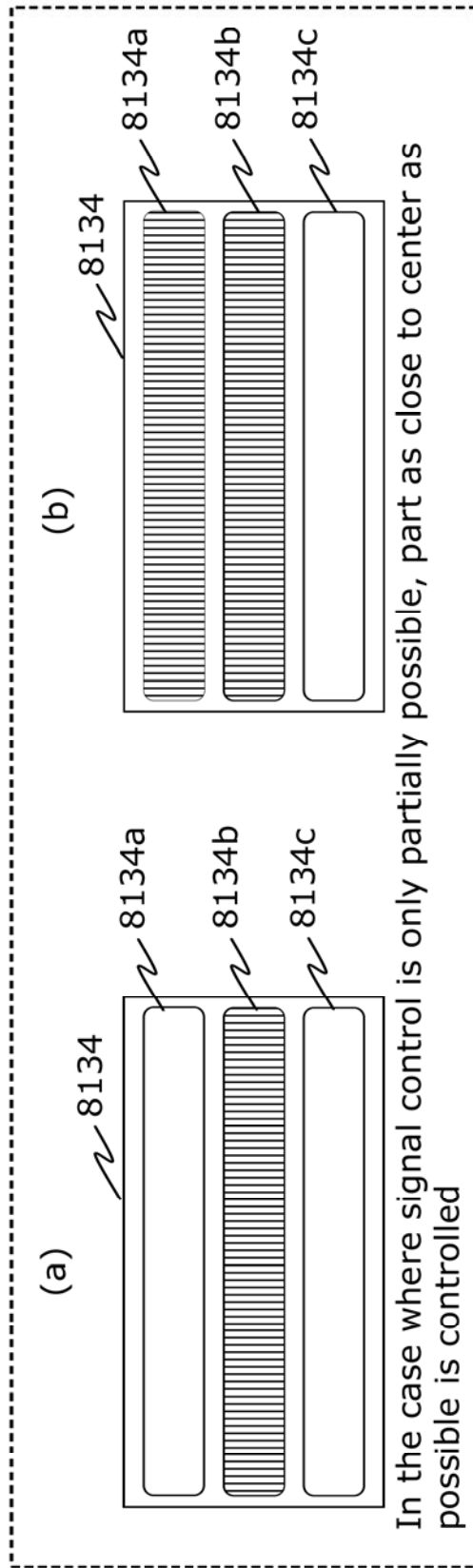


FIG. 387B

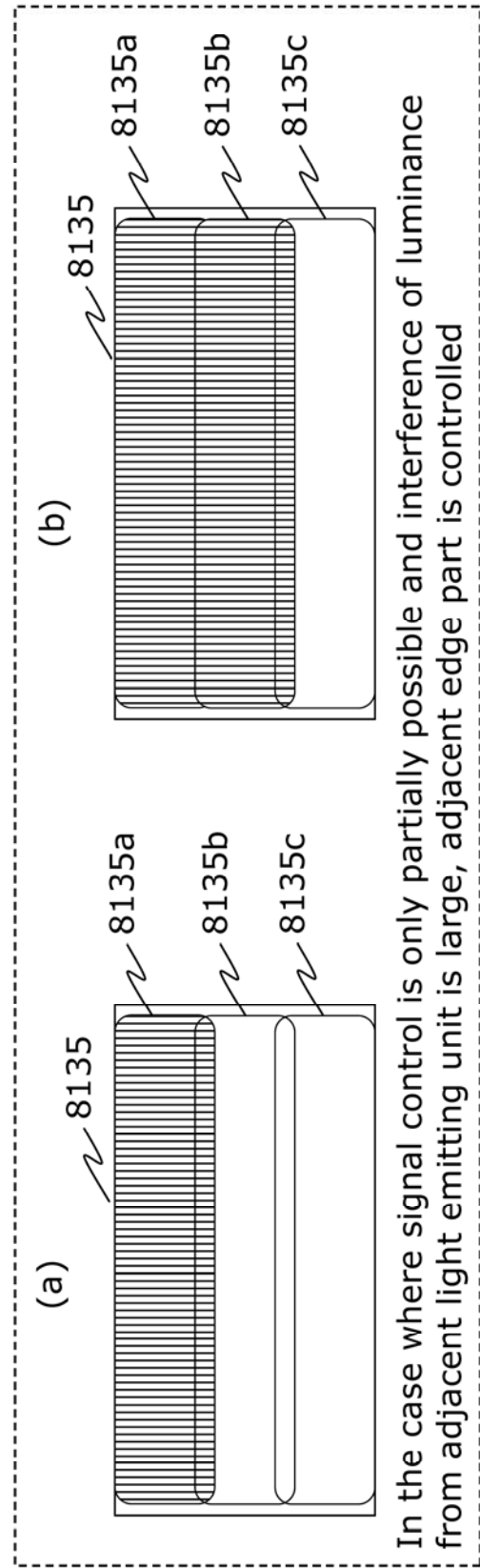
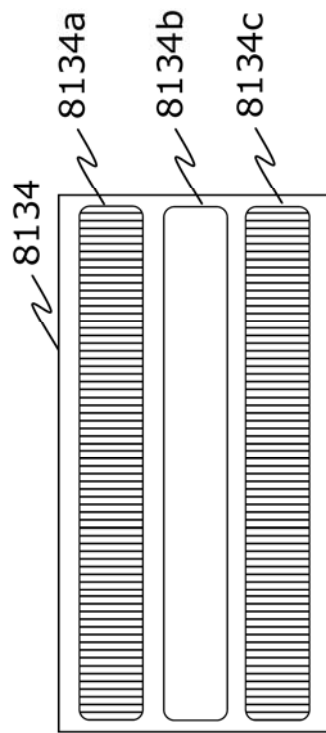


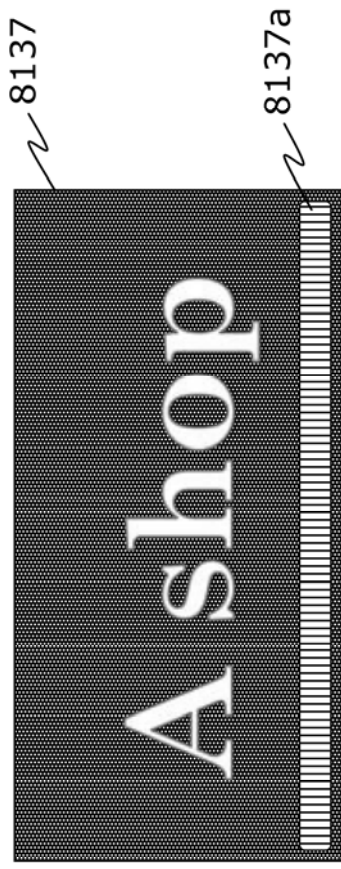


FIG. 387C



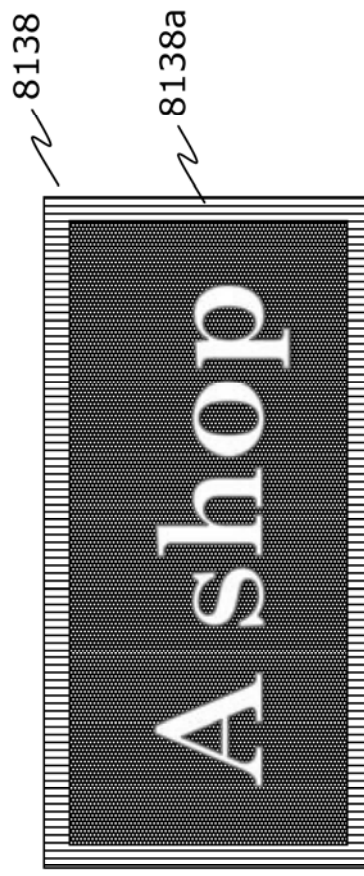
In the case where signal control is only partially possible and receivable range needs to be widened, edge part is controlled

FIG. 388A



Provide uniform light emitting portion in part of sign to facilitate reception

FIG. 388B



Arrange uniform light emitting portion so that uniform light emitting portion is present in large size in whichever direction image is captured

FIG. 389

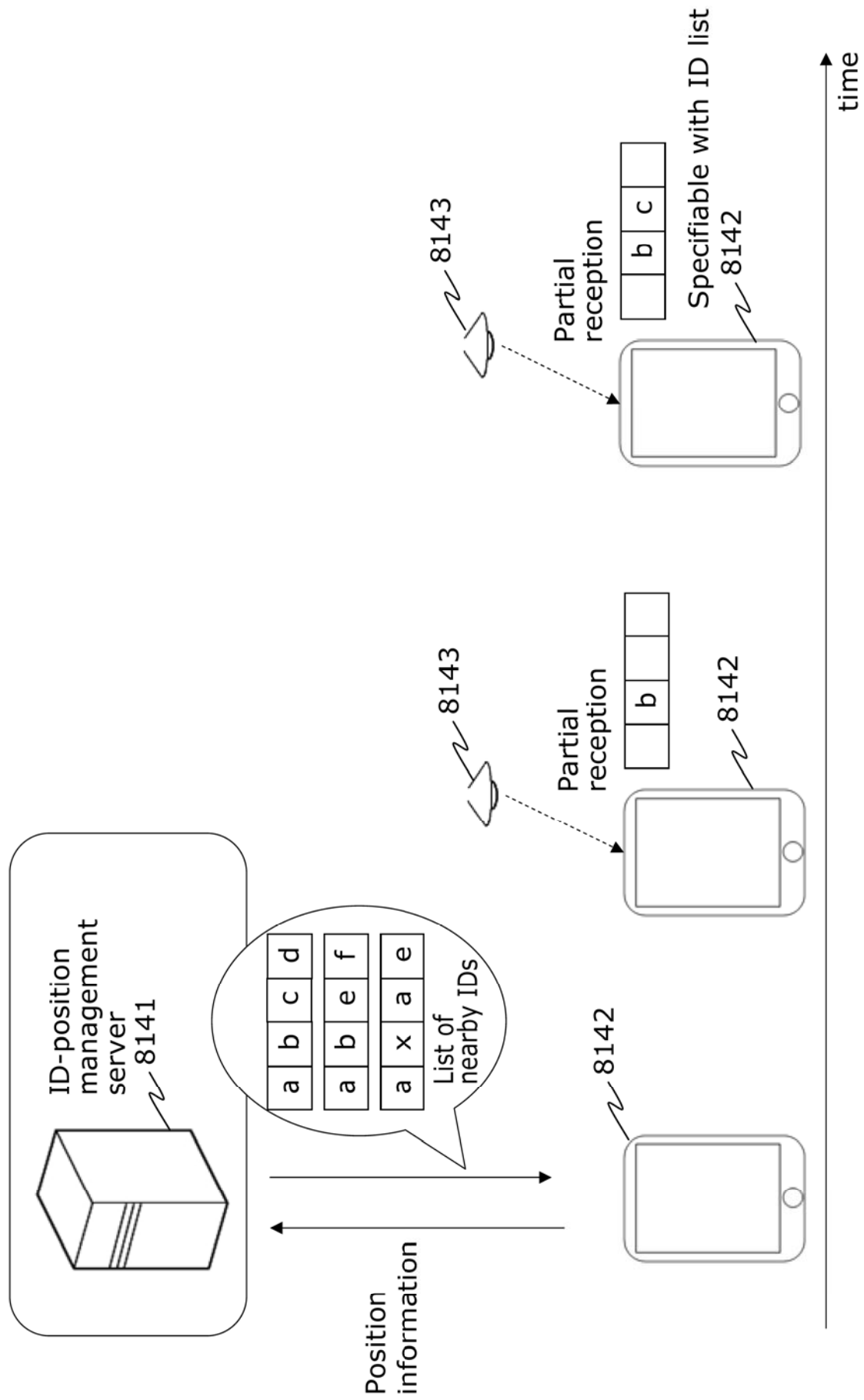


FIG. 390

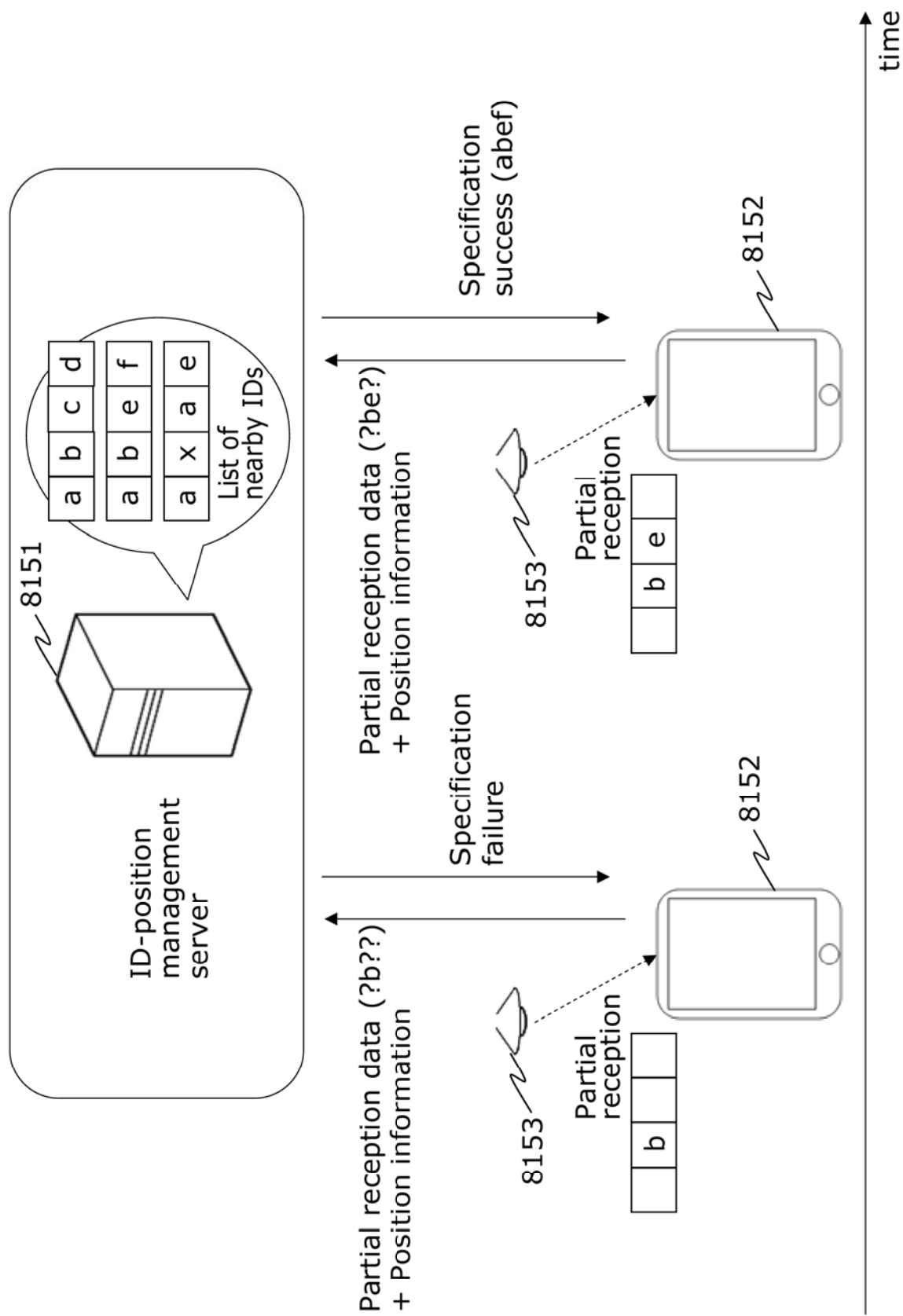


FIG. 391

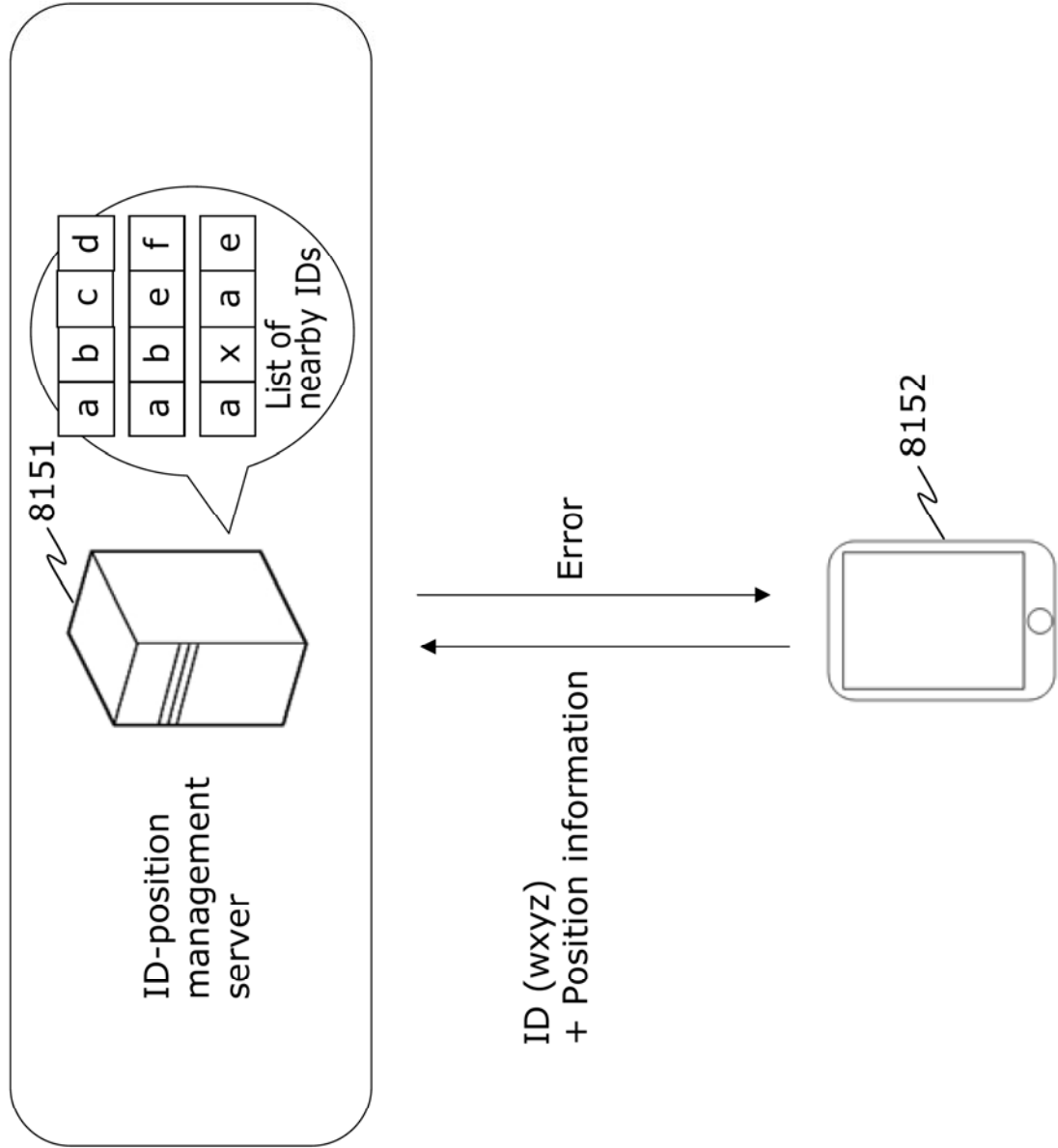


FIG. 392A

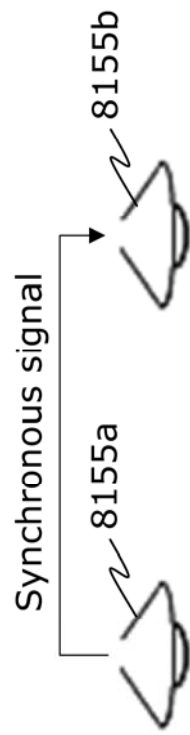


FIG. 392B

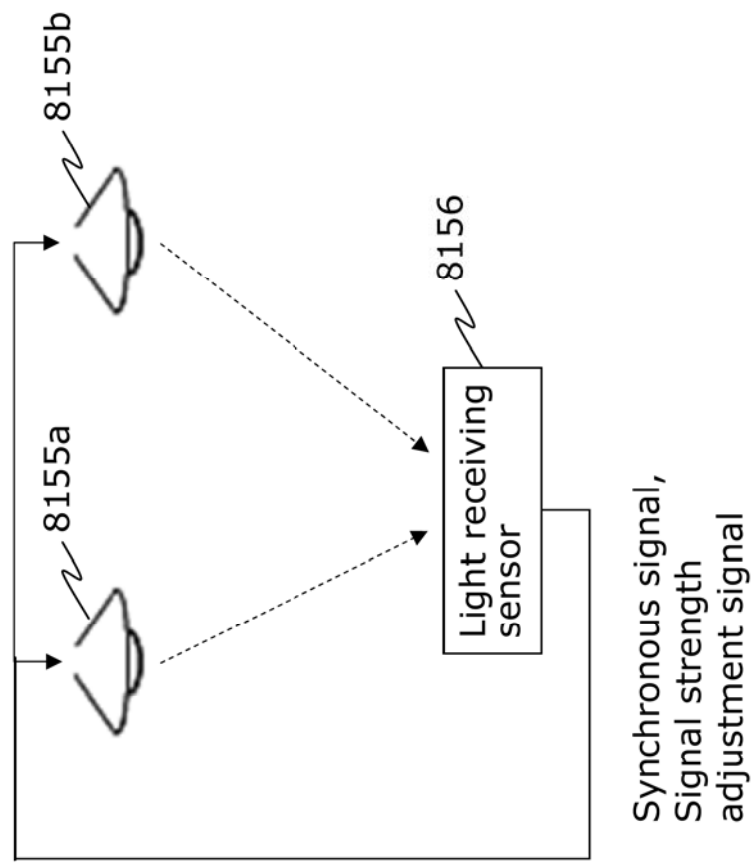


FIG. 393

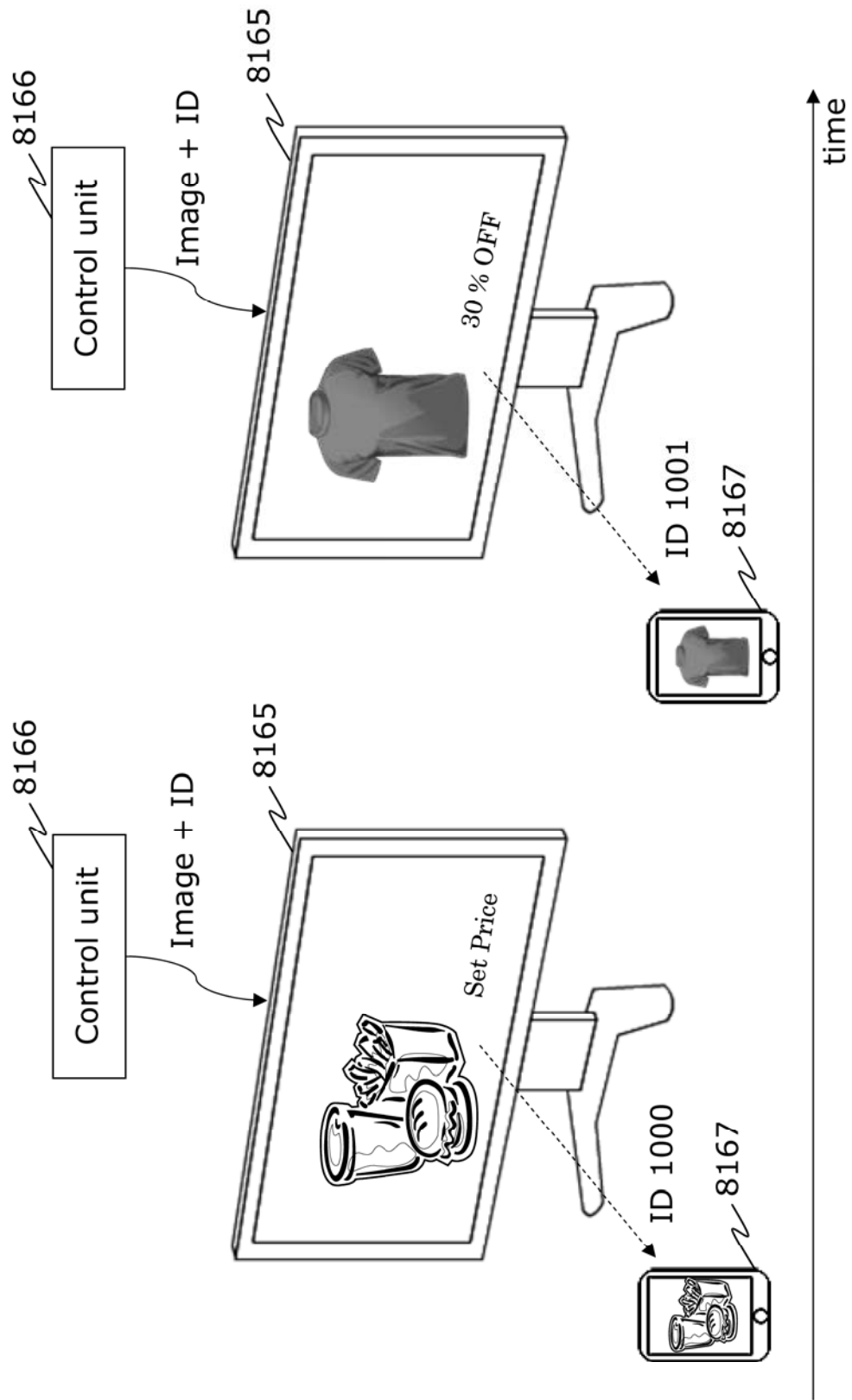


FIG. 394

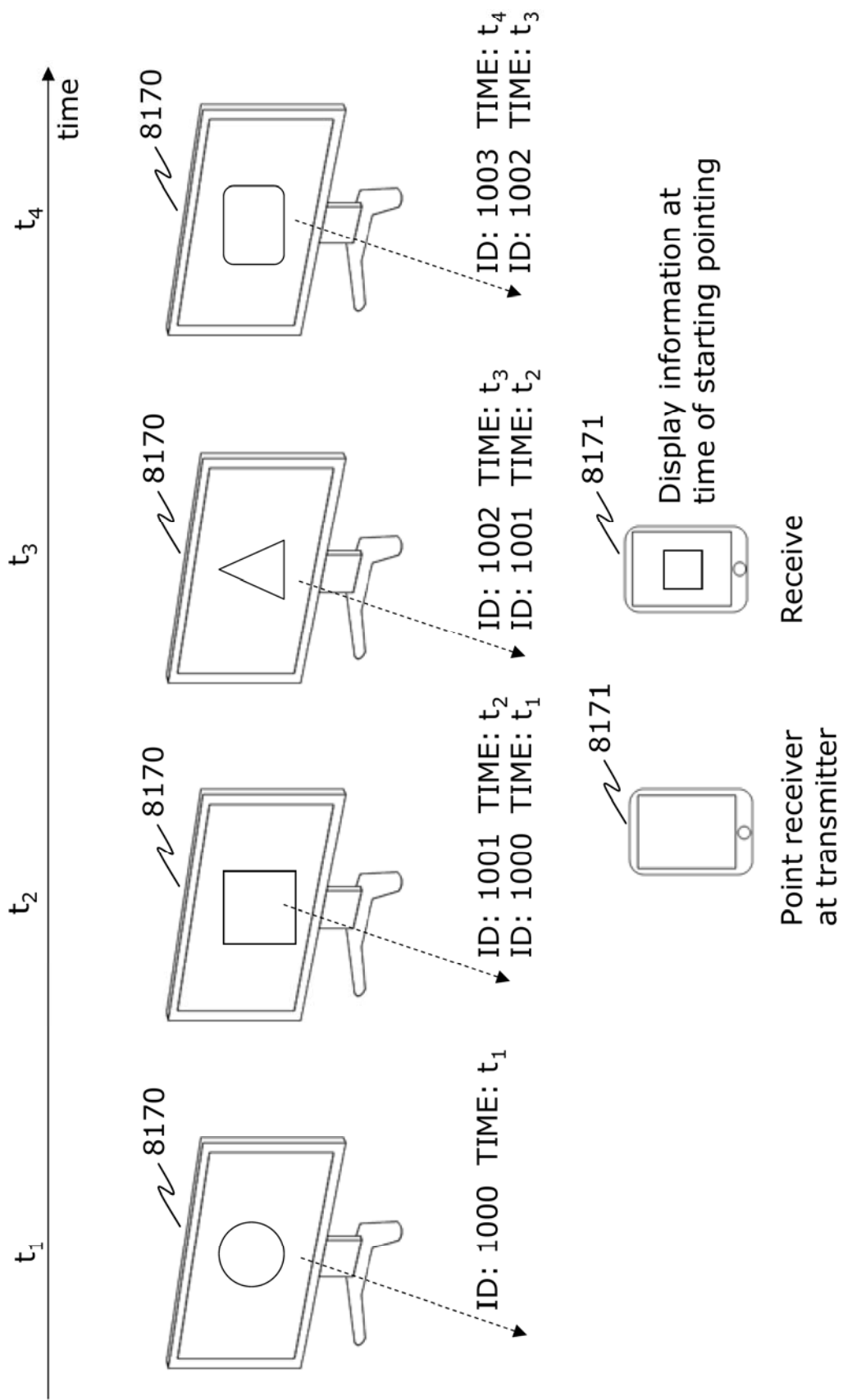




FIG. 395

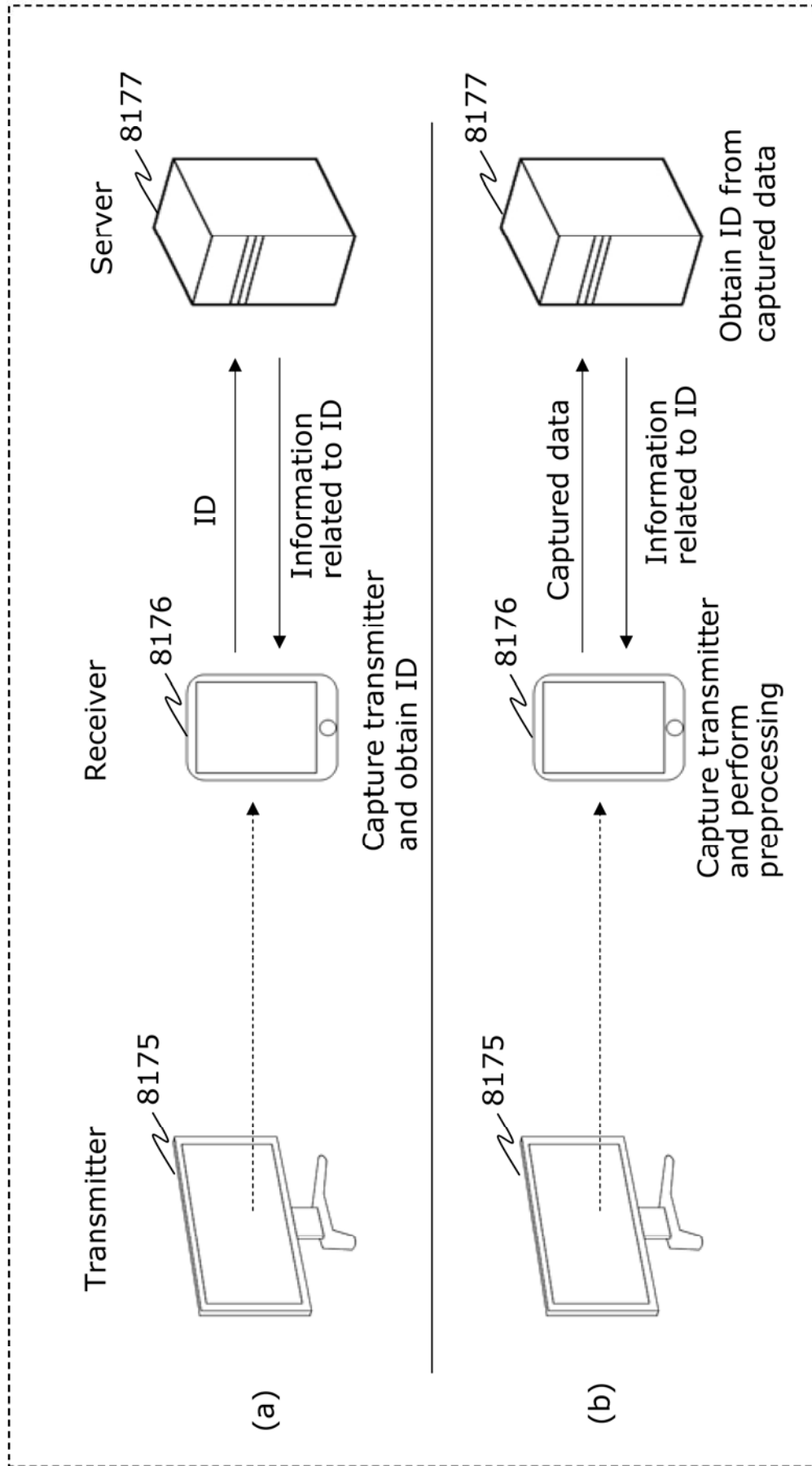


FIG. 396

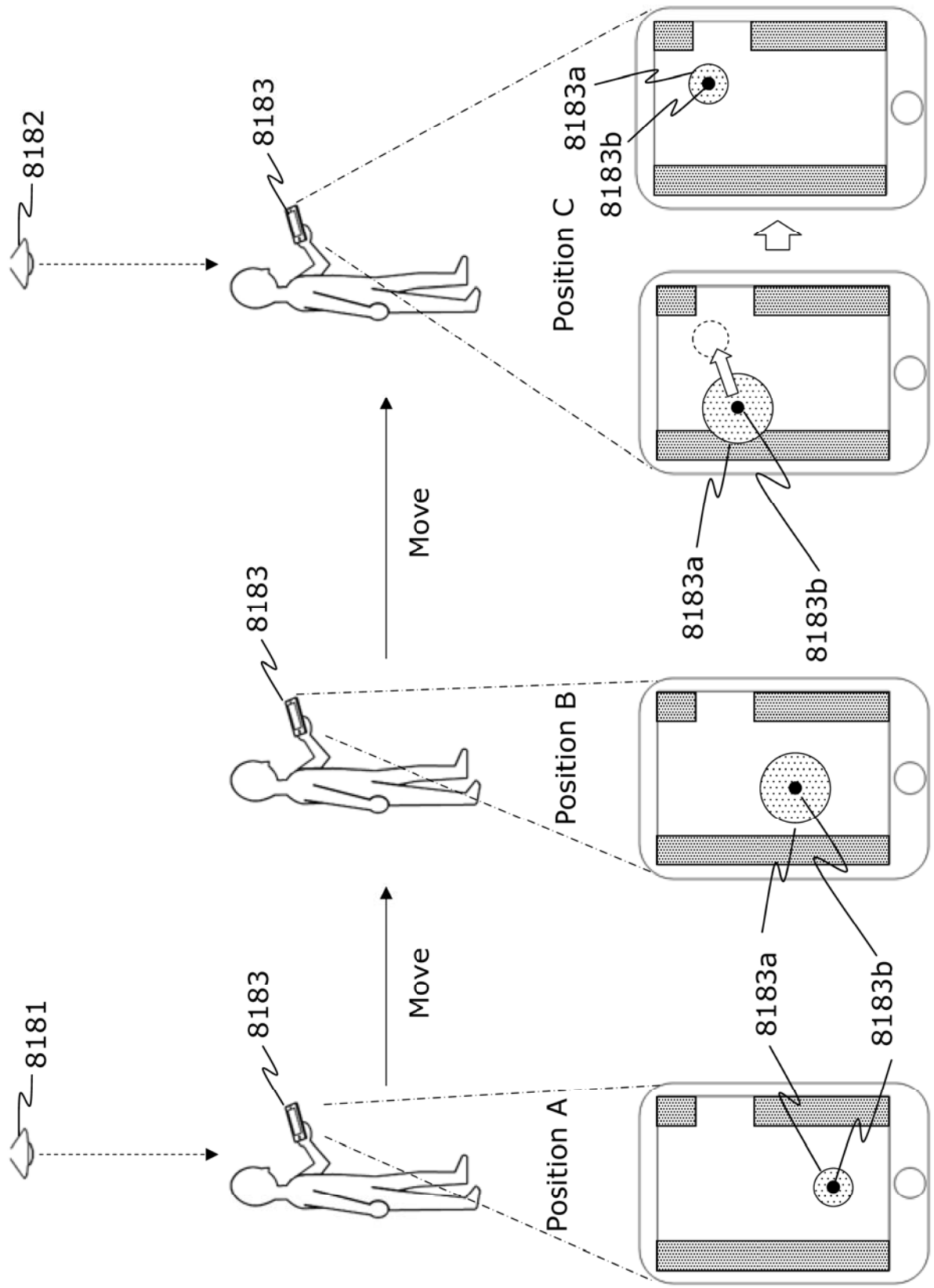


FIG. 397

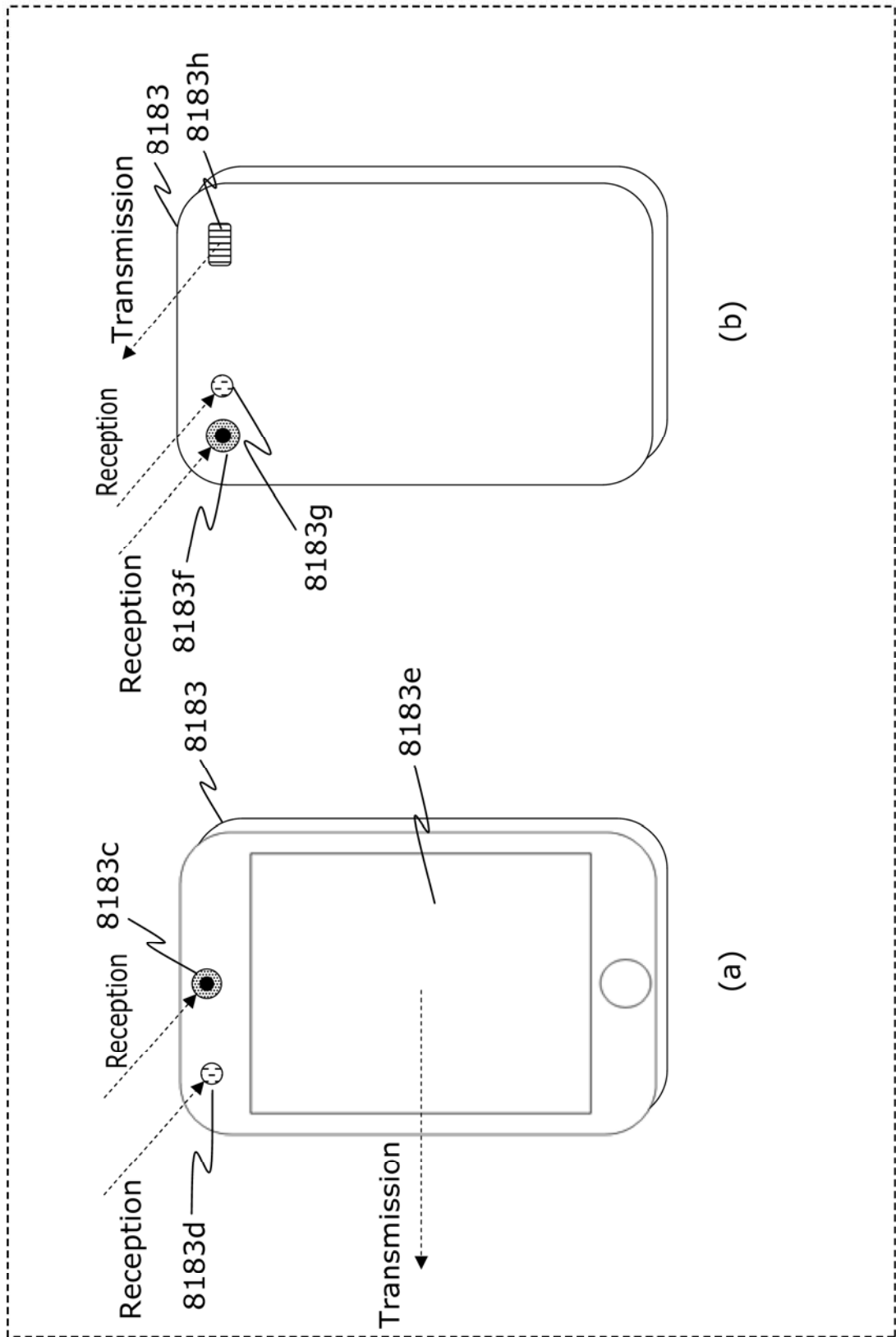


FIG. 398

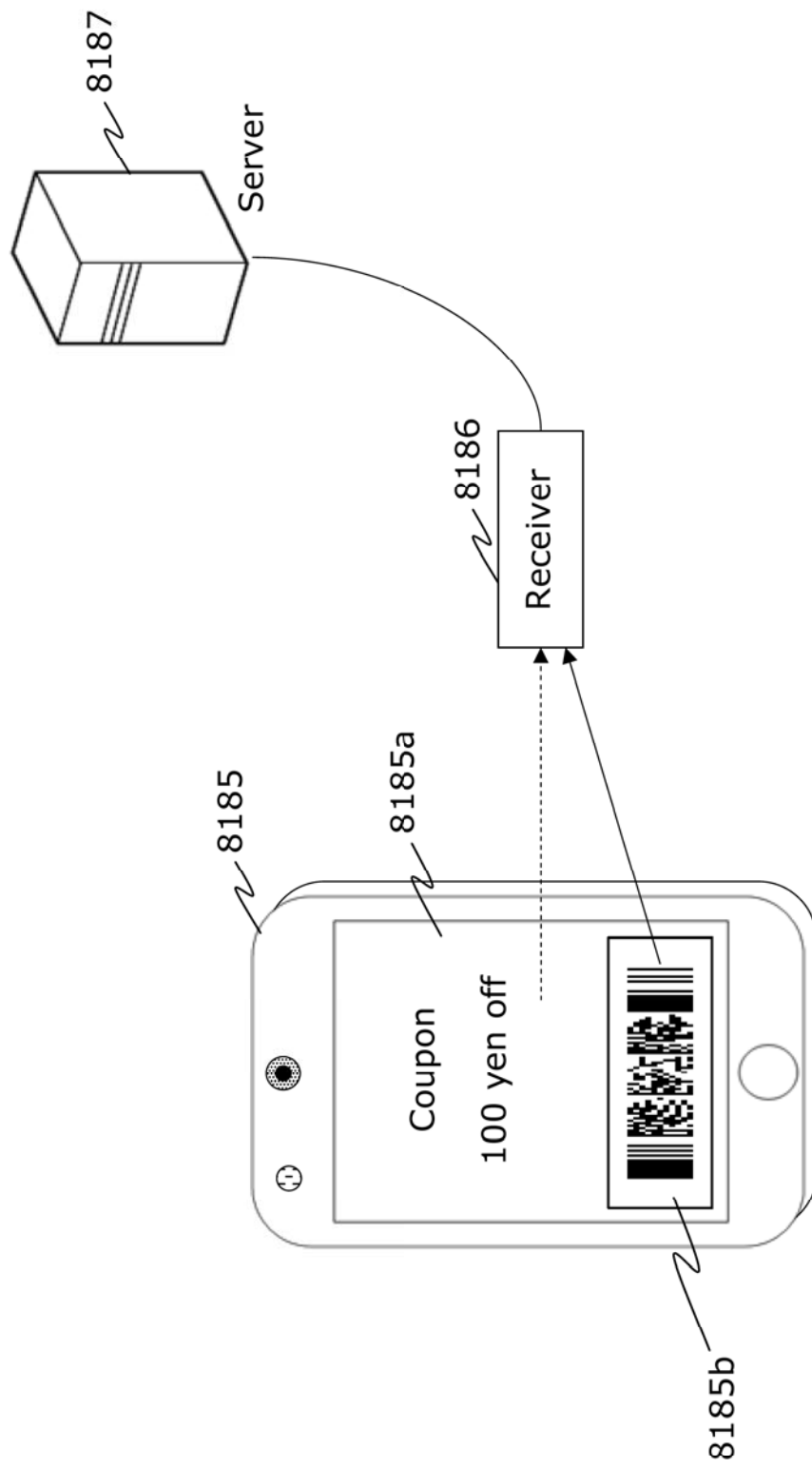


FIG. 399

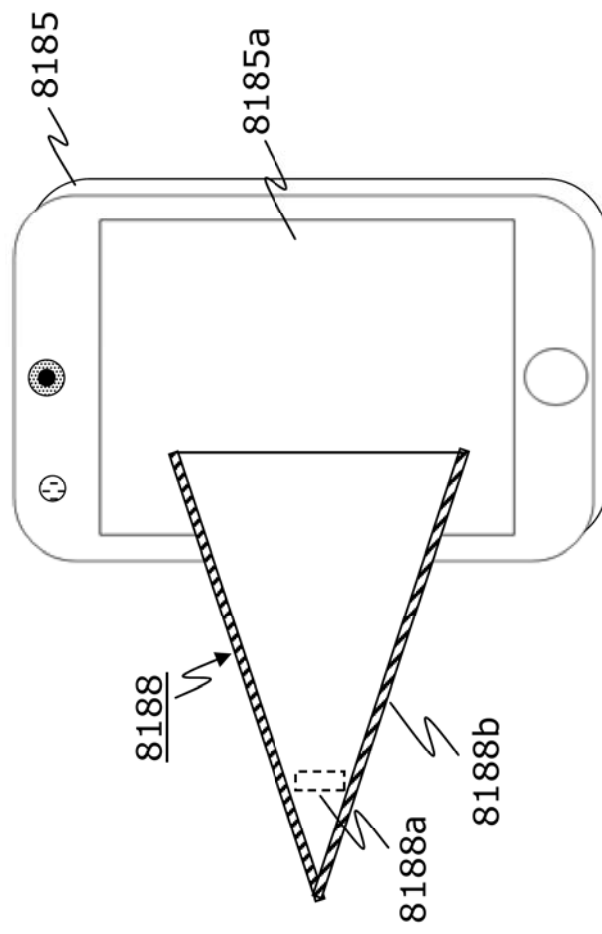


FIG. 400

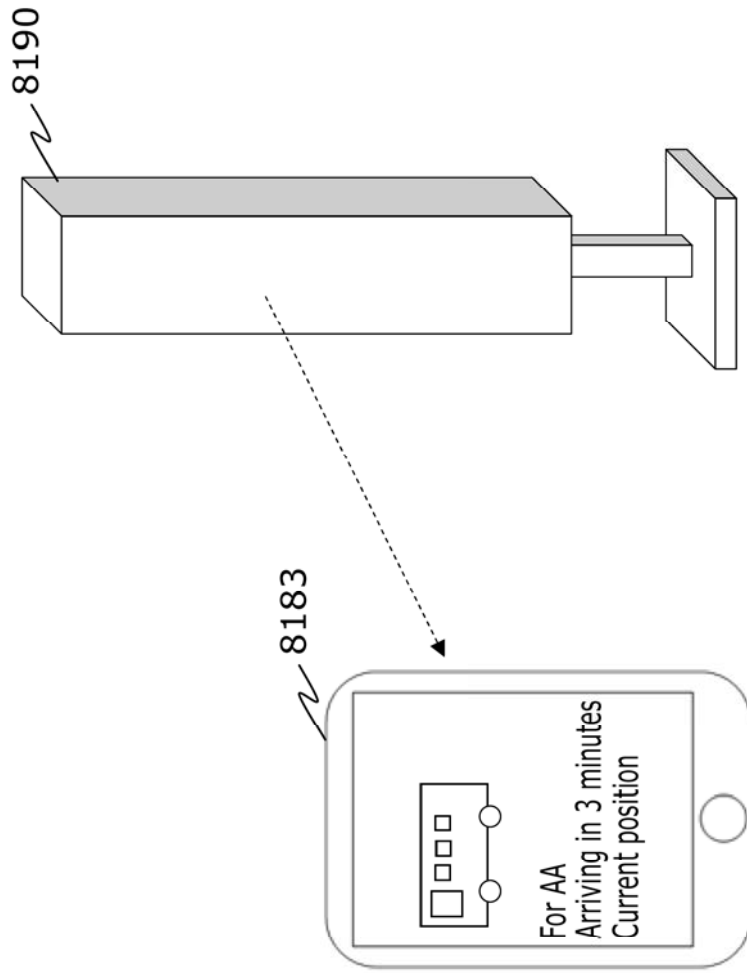


FIG. 401

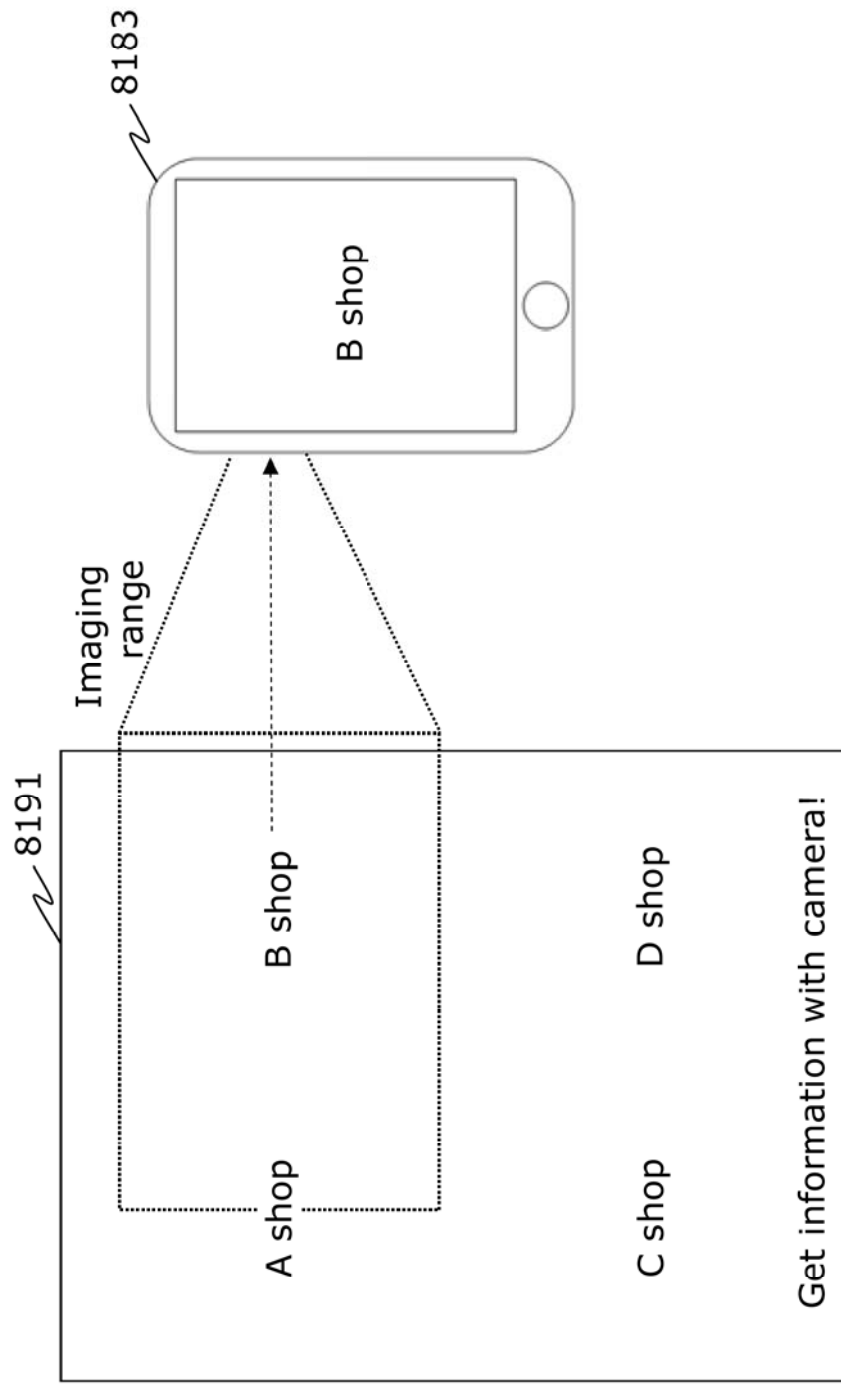


FIG. 402

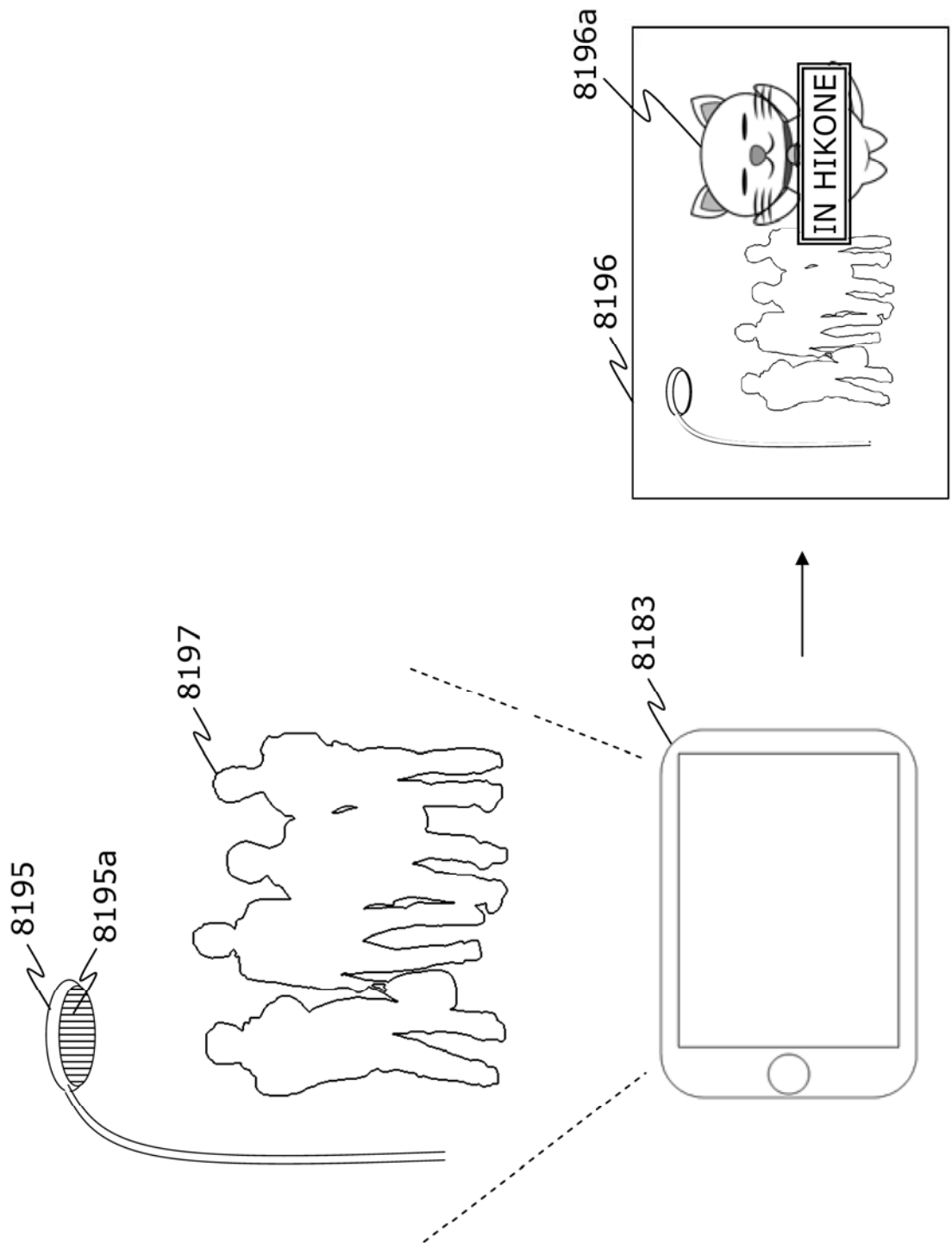




FIG. 403A

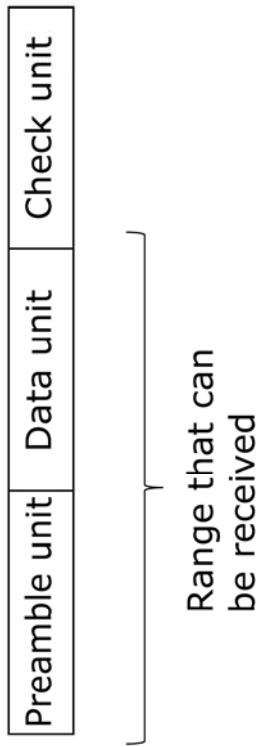


FIG. 403B

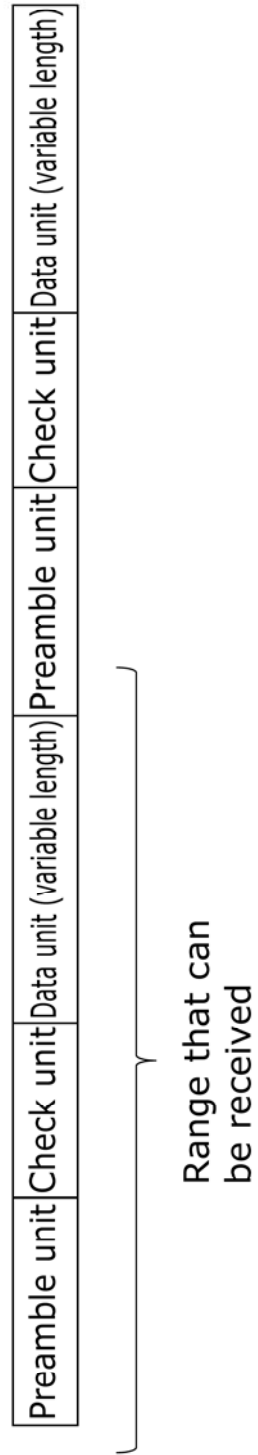


FIG. 404

| Signal | Rise position | Brightness |      |      |
|--------|---------------|------------|------|------|
|        |               | 75 %       | 50 % | 25 % |
| 00     | Slots 1 → 2   |            |      |      |
| 01     | Slots 2 → 3   |            |      |      |
| 10     | Slots 3 → 4   |            |      |      |
| 11     | None          |            |      |      |

FIG. 405

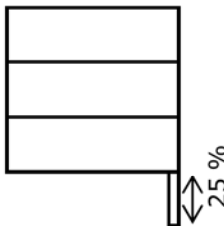
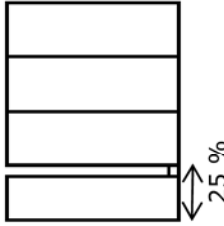
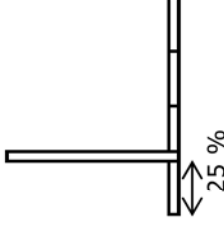
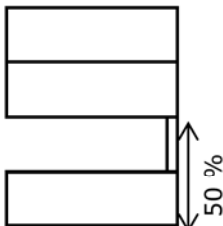
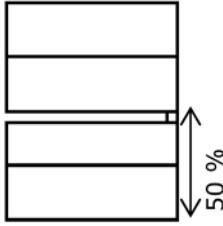
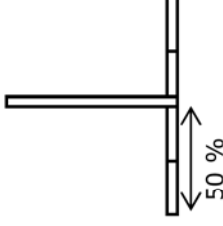
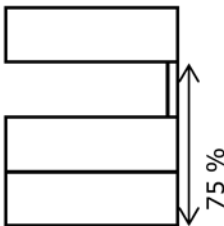
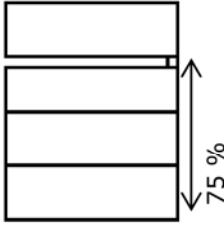
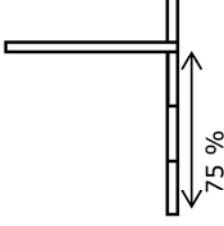
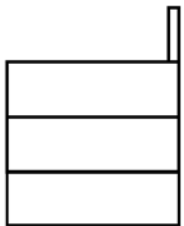
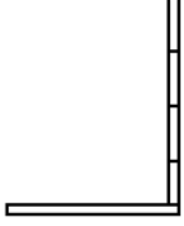
| Signal | Rise position   | Brightness                                                                            |                                                                                     |                                                                                     |
|--------|-----------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        |                 | 75 % (Basic)                                                                          | 99 %                                                                                | 1 %                                                                                 |
| 00     | Position of 25% |    |    |    |
| 01     | Position of 50% |    |    |    |
| 10     | Position of 75% |   |   |   |
| 11     | None            |  |  |  |

FIG. 406

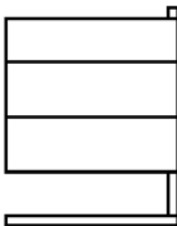
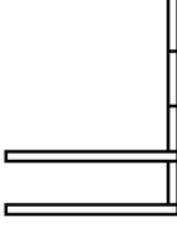
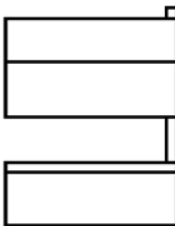
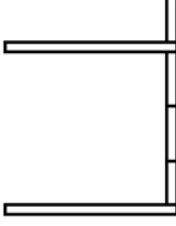
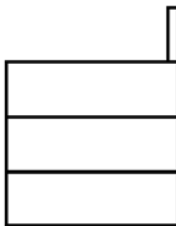
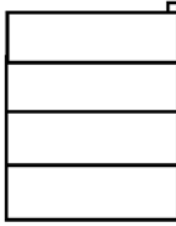
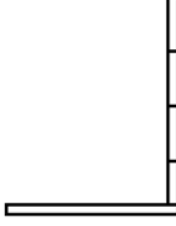
| Signal | Rise position   | Brightness                                                                            |                                                                                     |                                                                                     |
|--------|-----------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|        |                 | 75 %                                                                                  | 99 %                                                                                | 1 %                                                                                 |
| 00     | Position of 25% |    |    |    |
| 01     | Position of 50% |    |    |    |
| 10     | Position of 75% |   |   |   |
| 11     | None            |  |  |  |

FIG. 407A

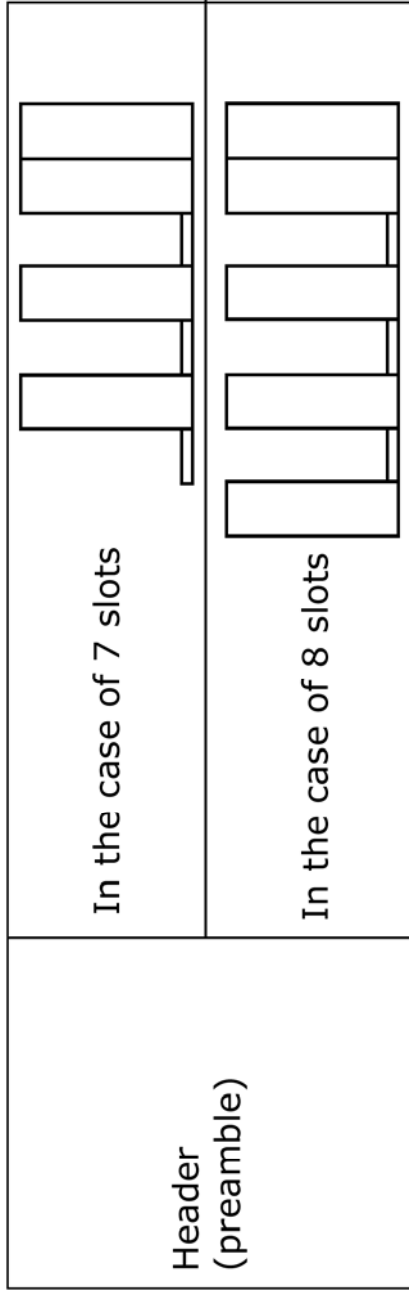


FIG. 407B

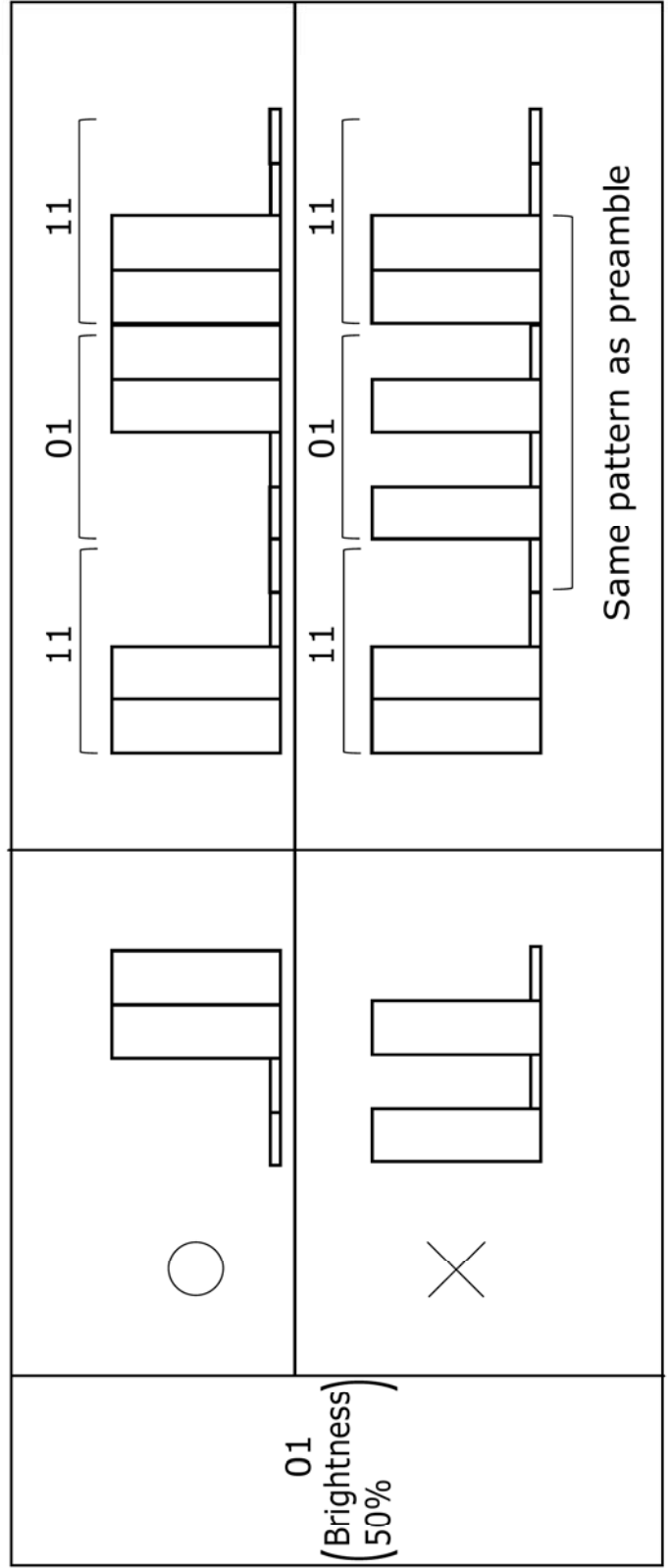


FIG. 408A

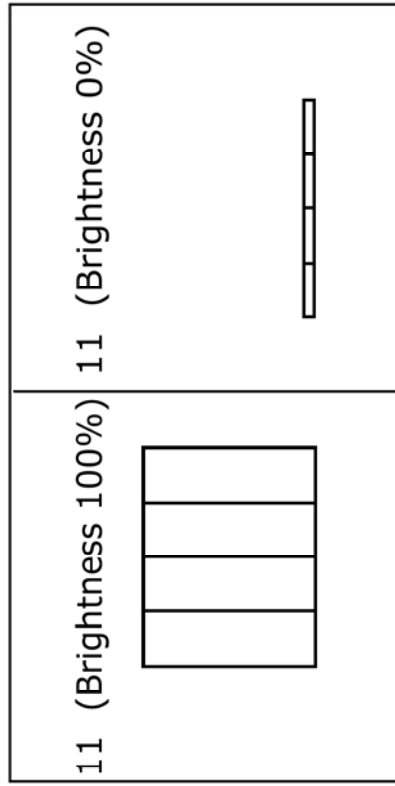
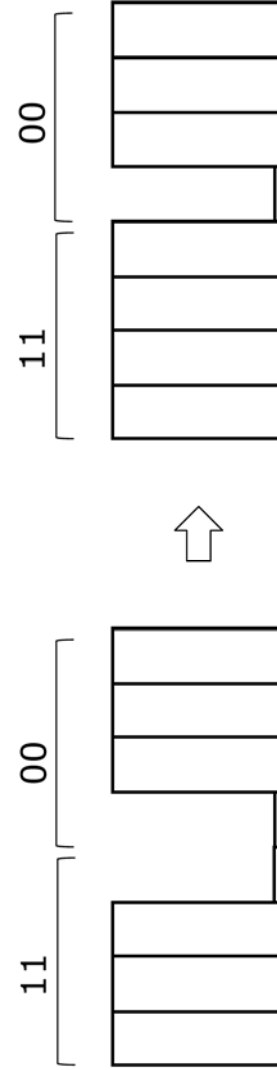


FIG. 408B



In the case of consecutive Ls,  
L other than last L is set to H

FIG. 409

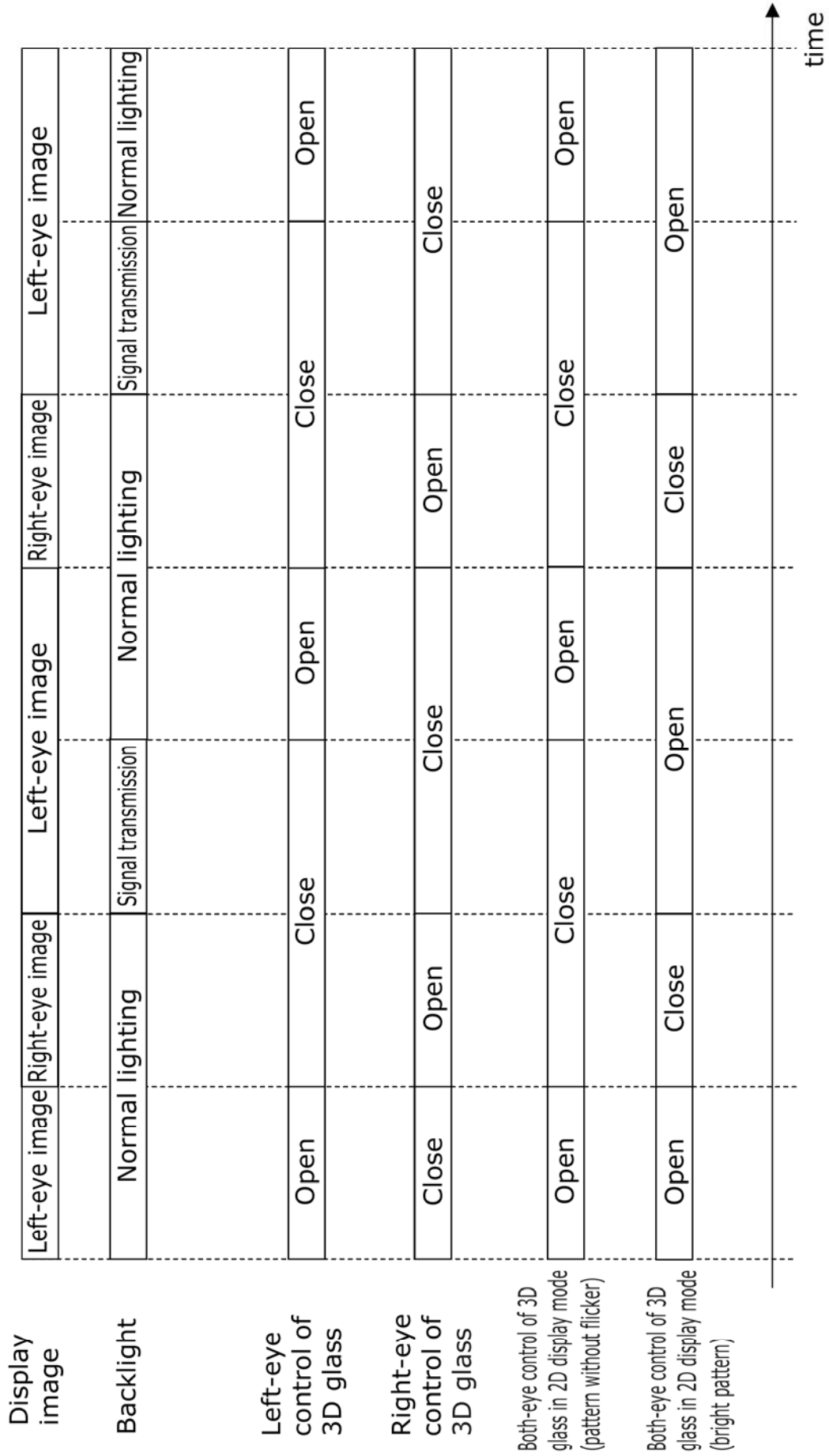


FIG. 410

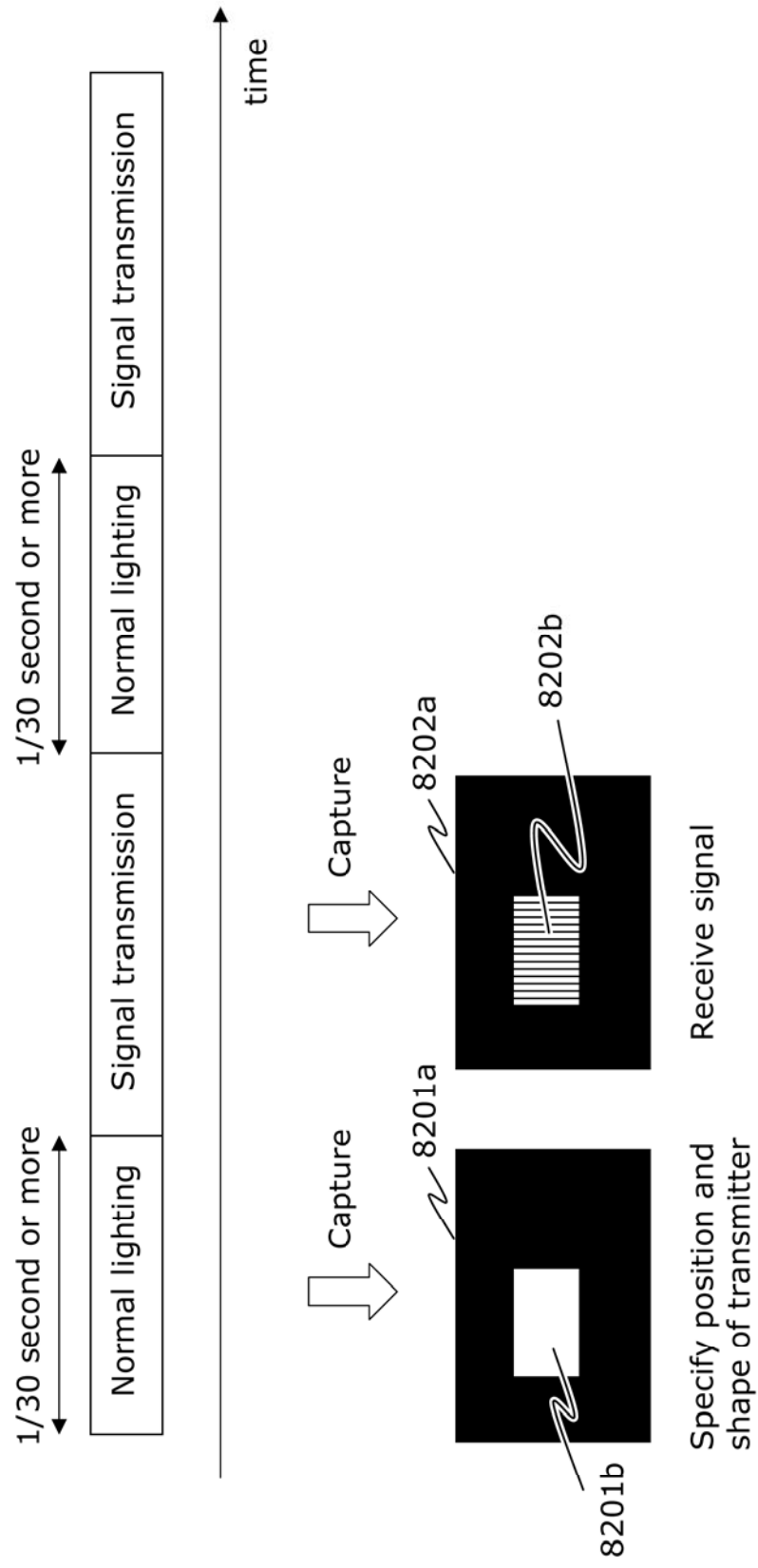




FIG. 411

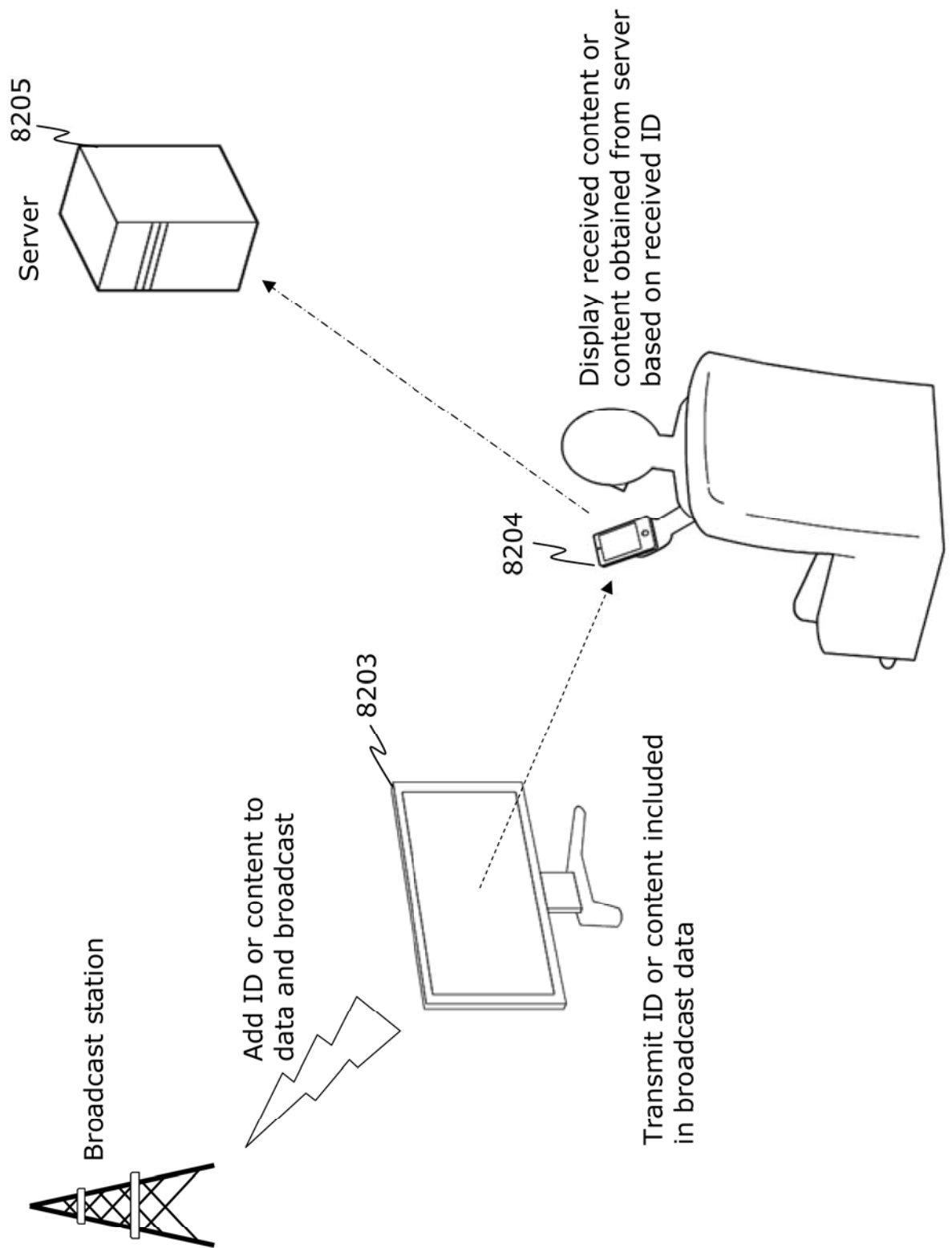


FIG. 412

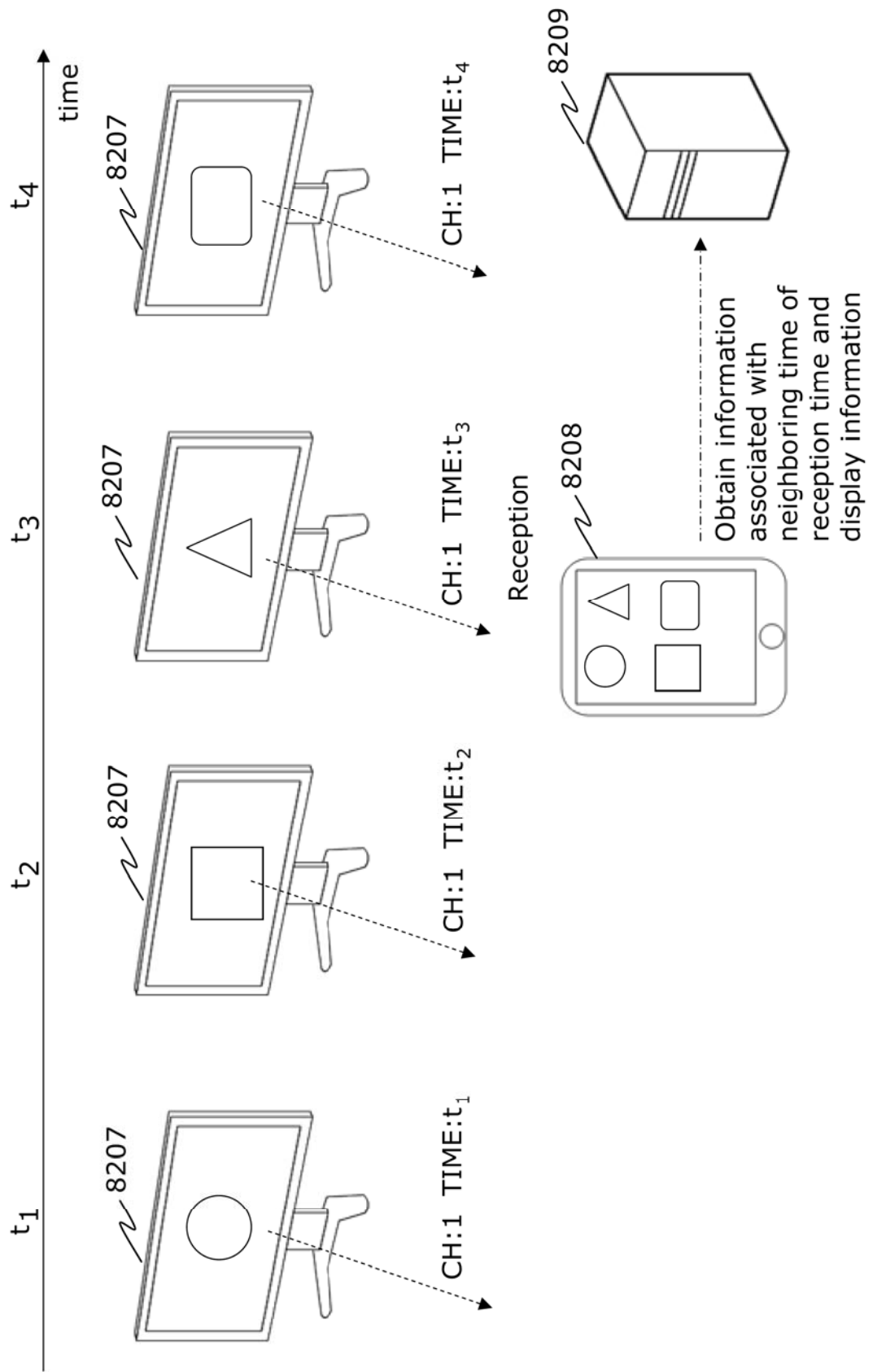
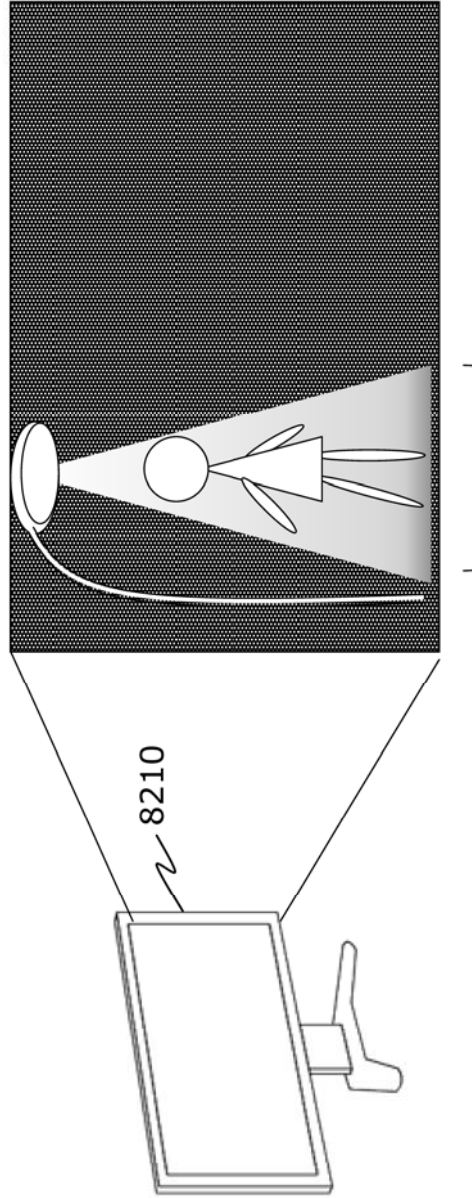


FIG. 413



Transmit signal only from part having predetermined brightness or more  
Display can express darker gray level by keeping signal from dark part

FIG. 414

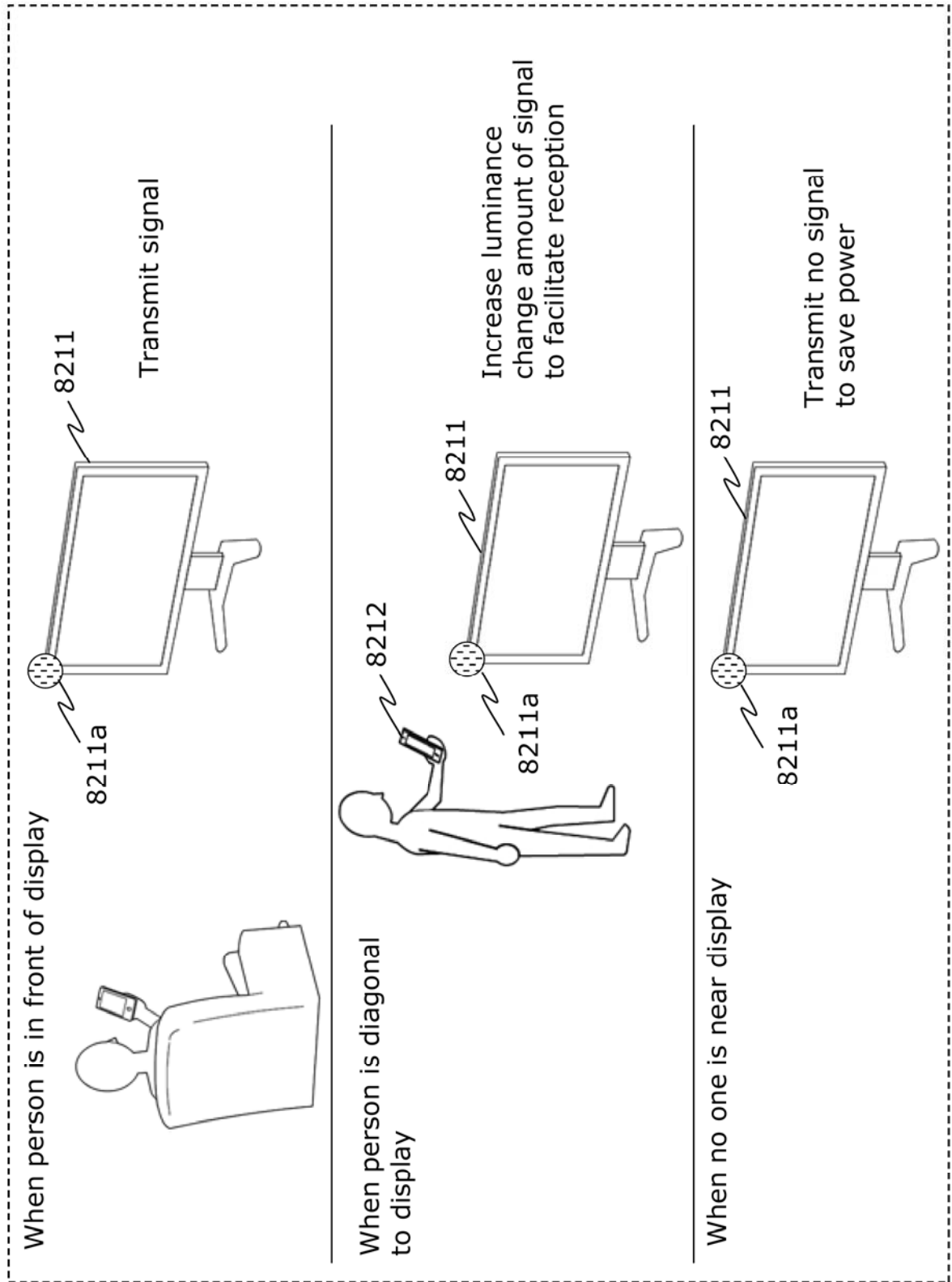


FIG. 415

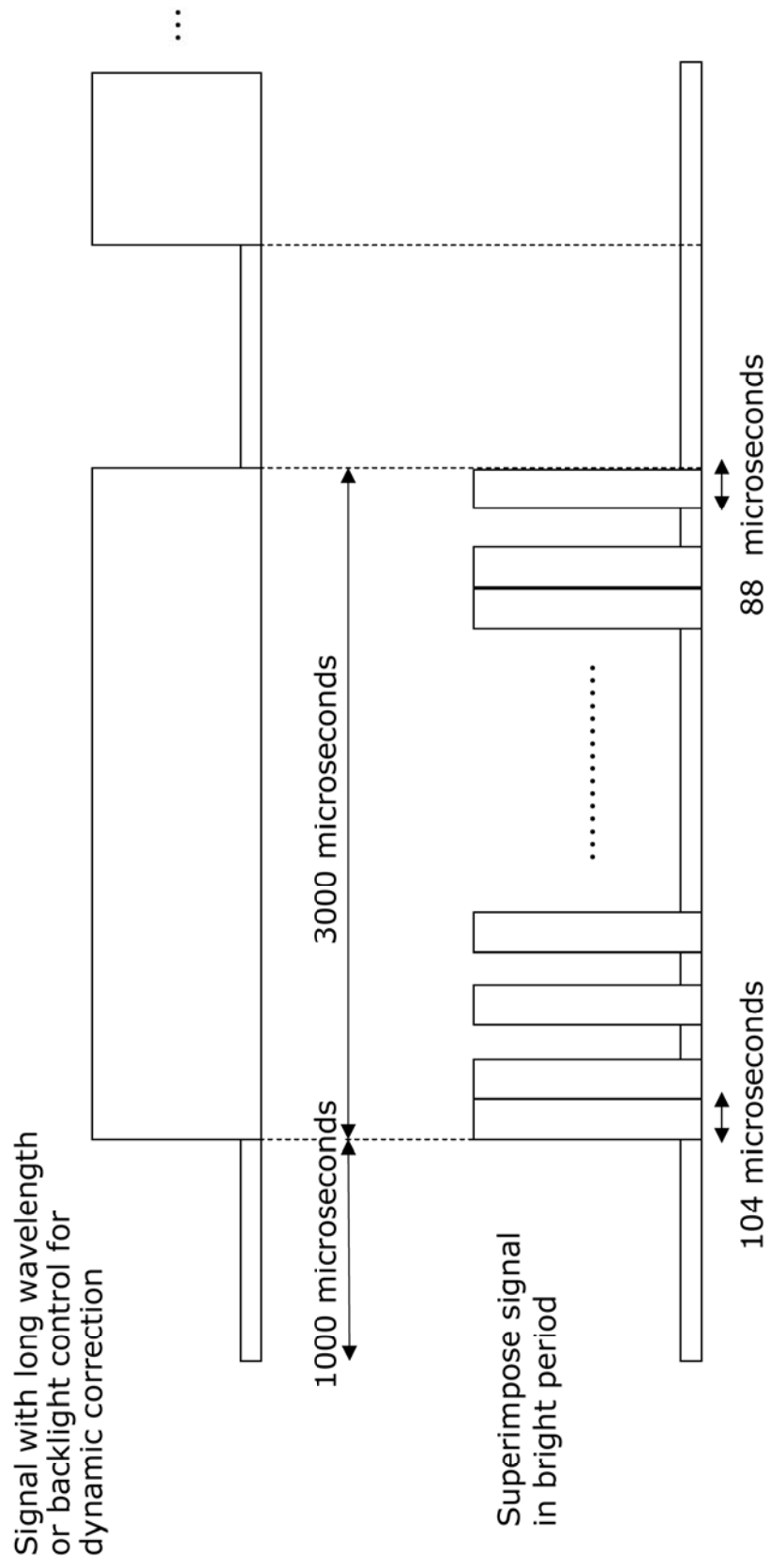


FIG. 416

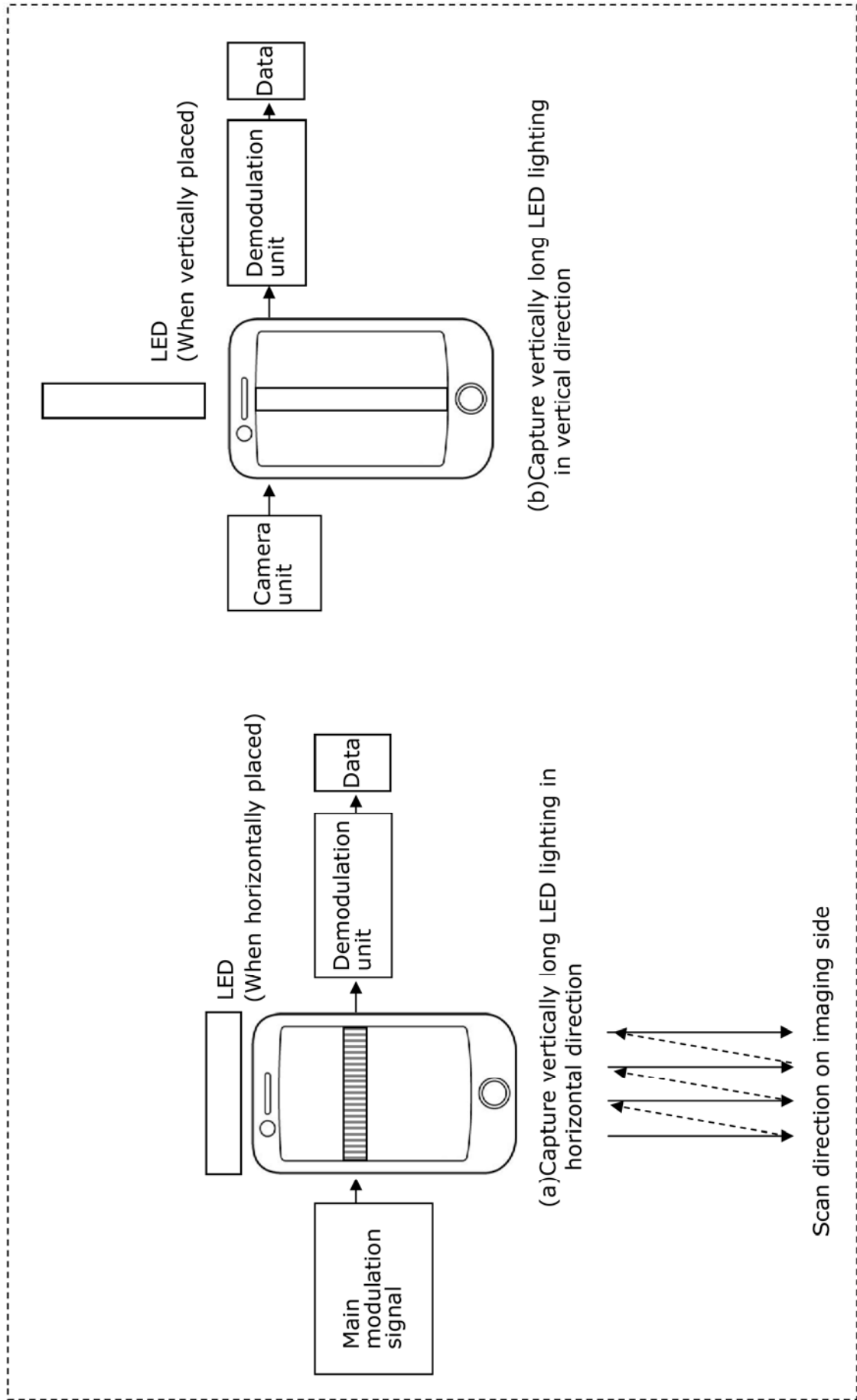


FIG. 417

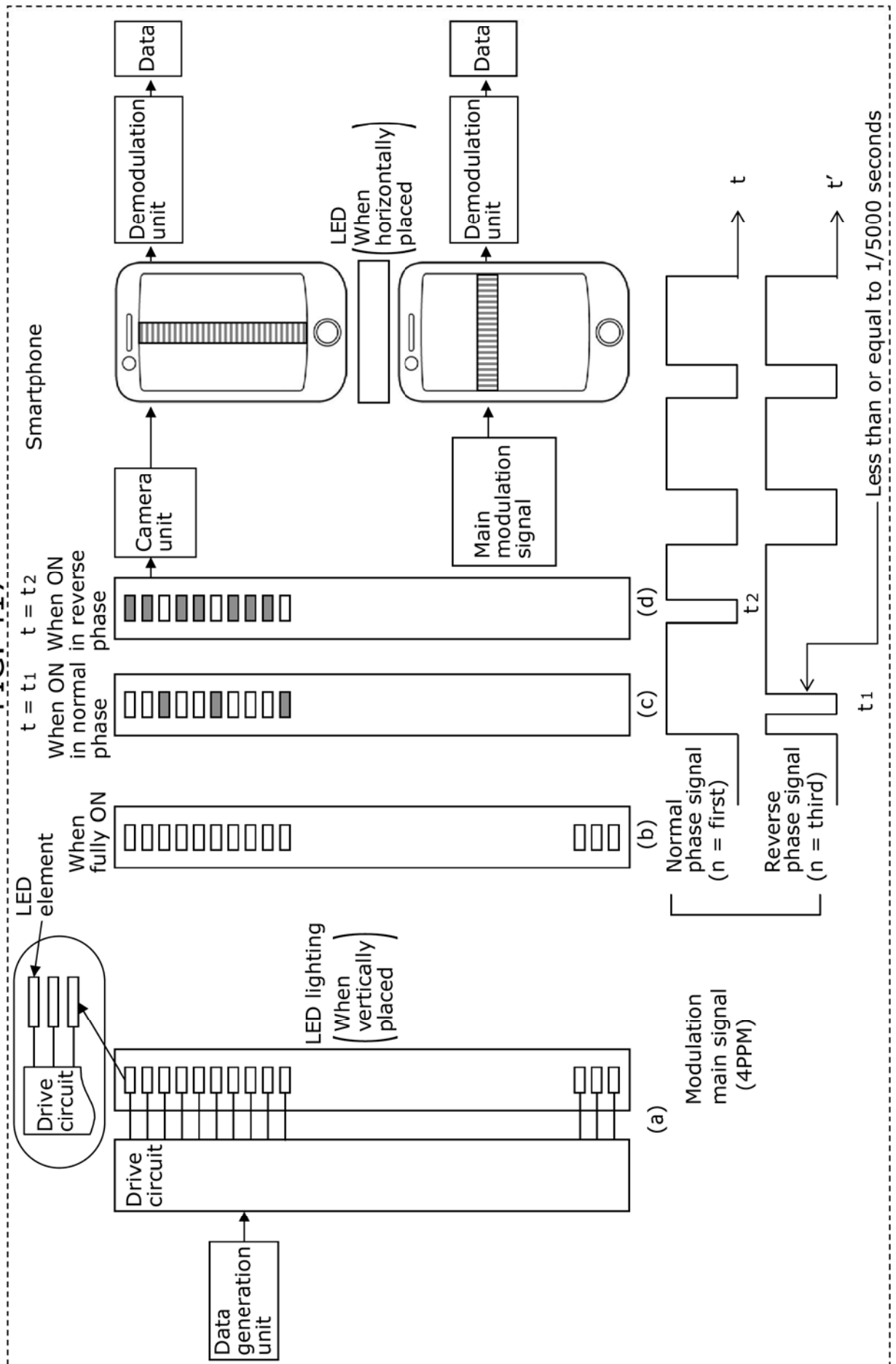


FIG. 418

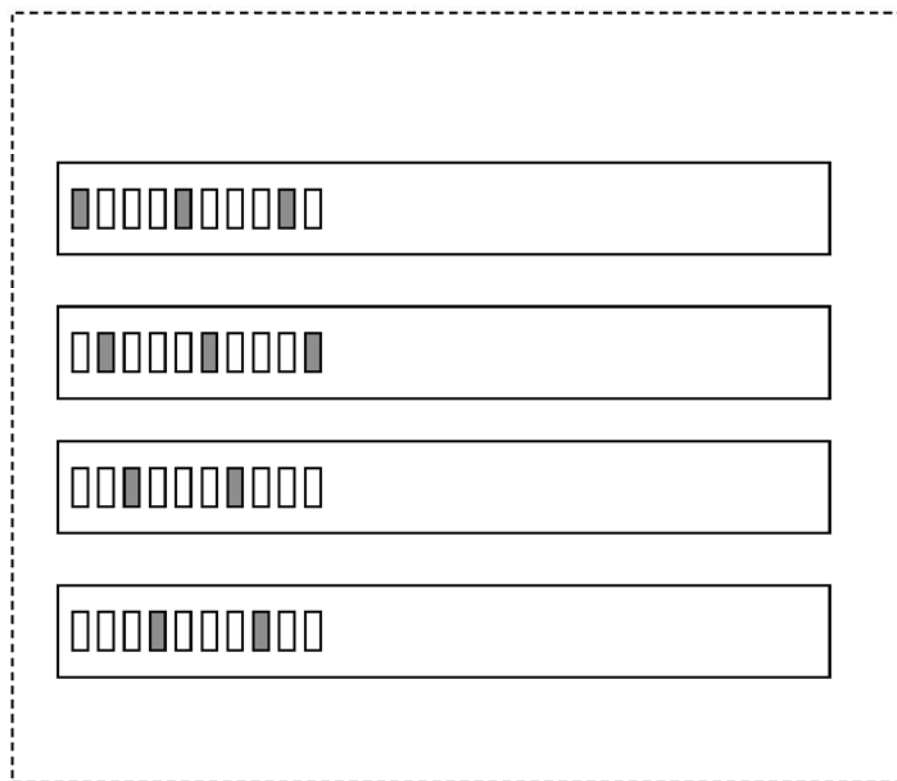




FIG. 419

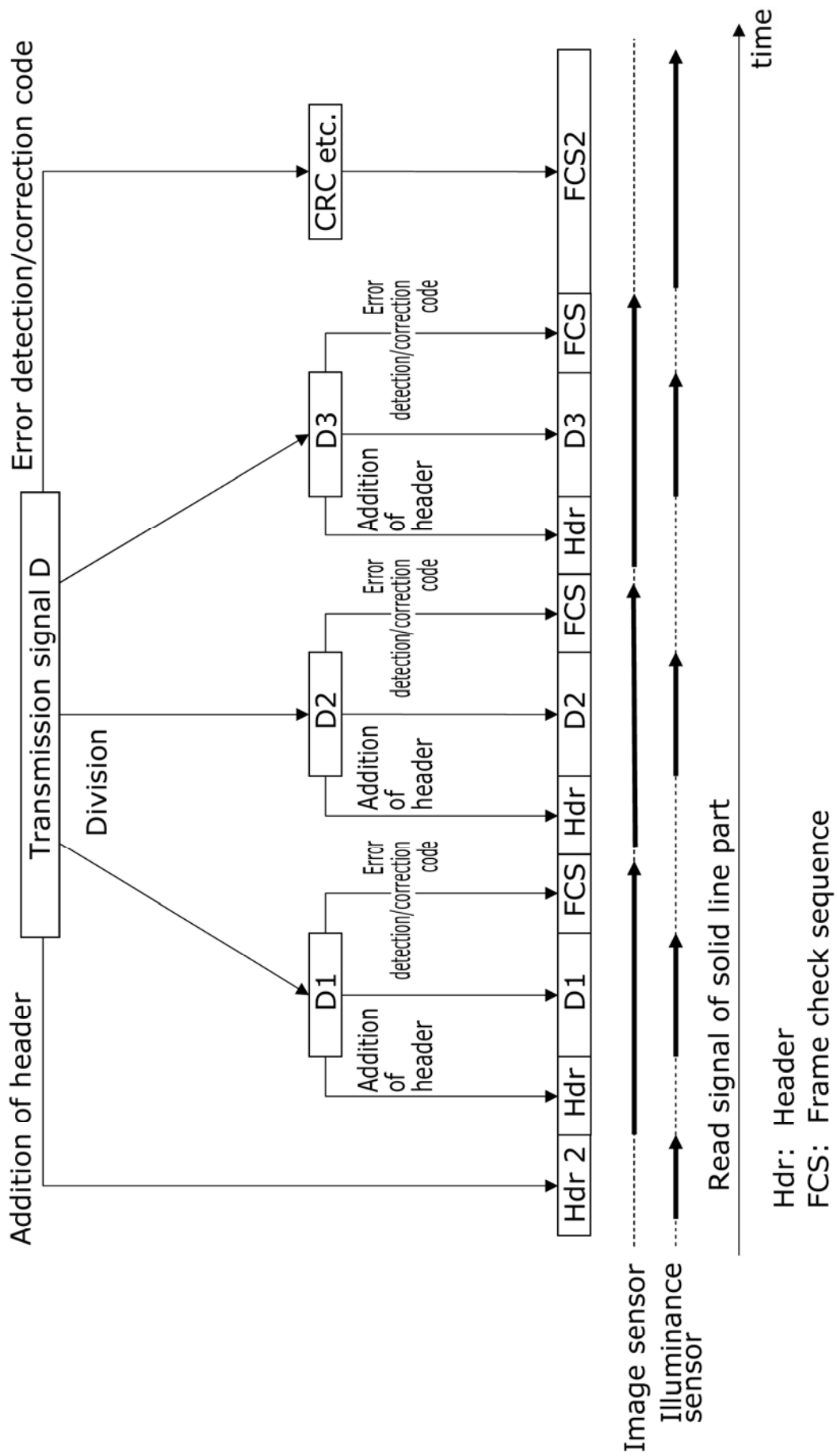


FIG. 420

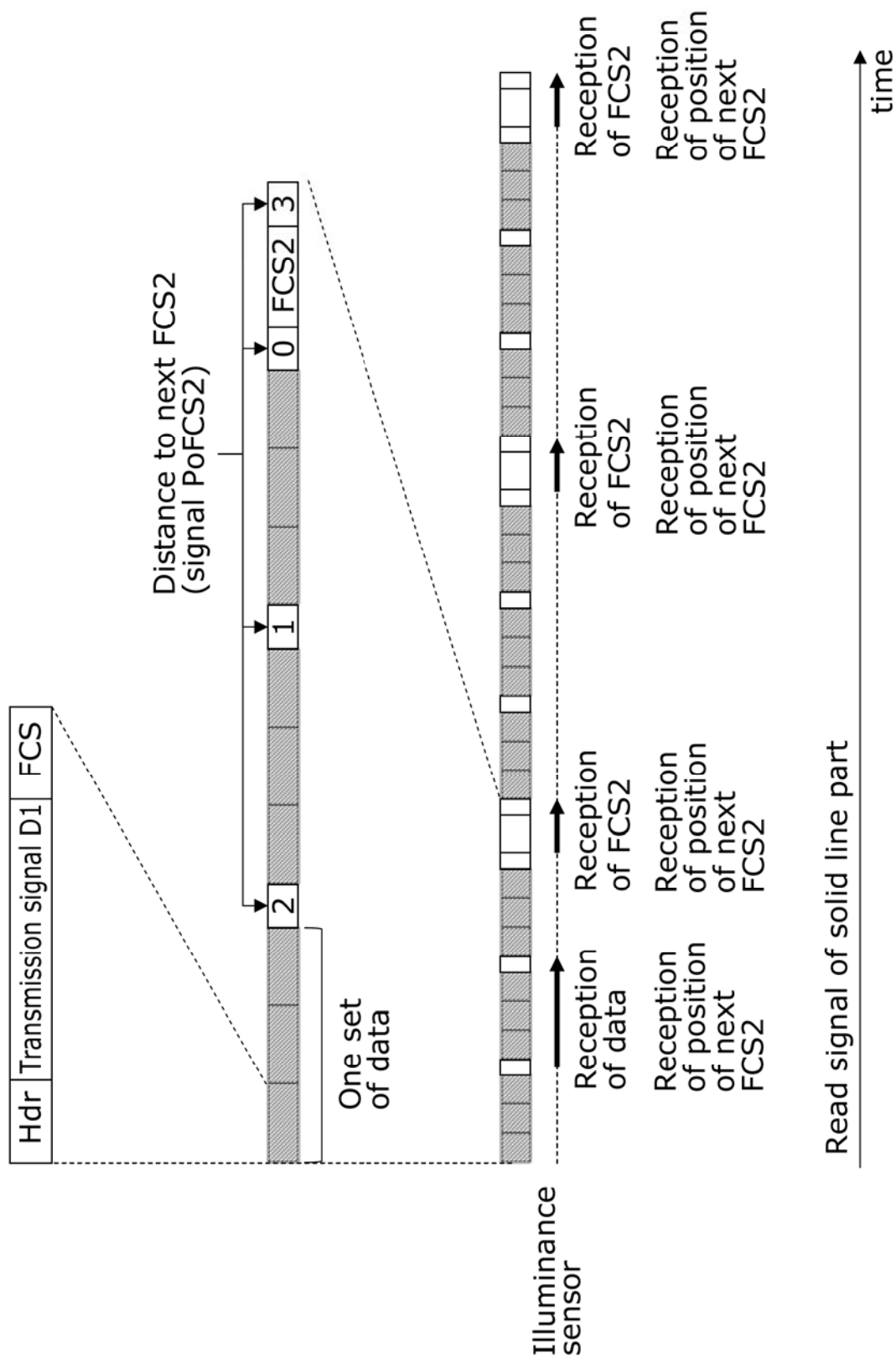


FIG. 421A

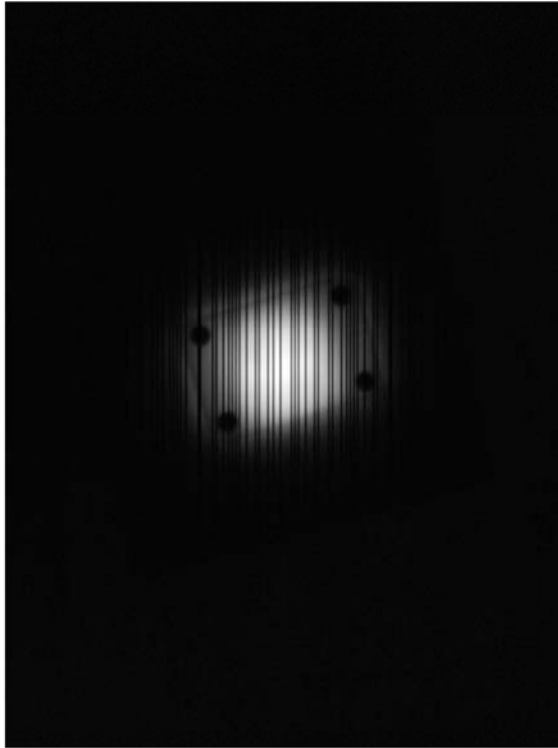


FIG. 421B

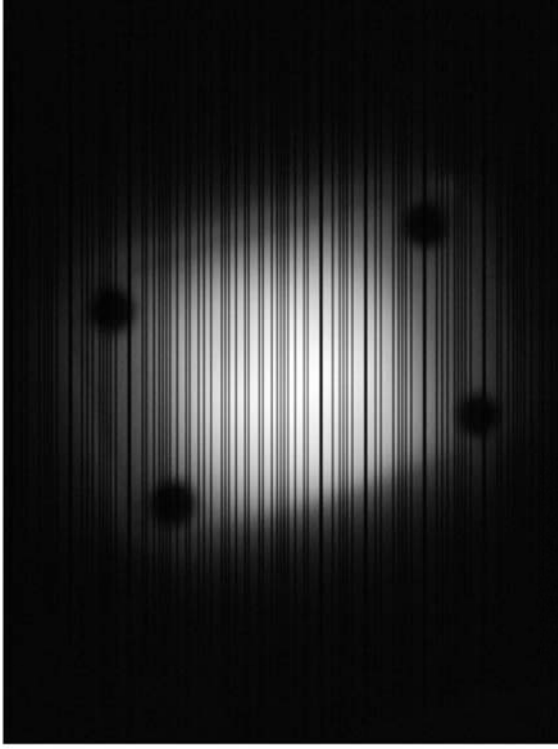


FIG. 421C

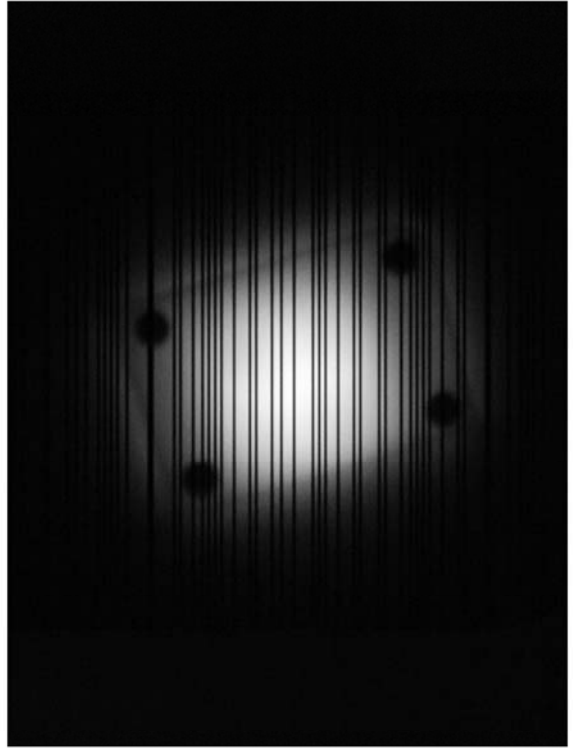


FIG. 422B

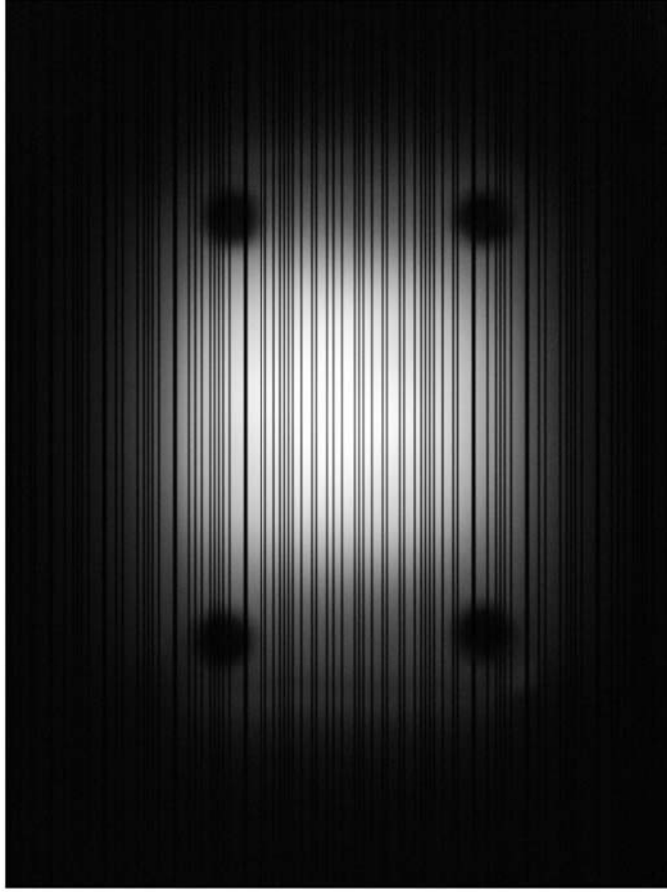


FIG. 422A

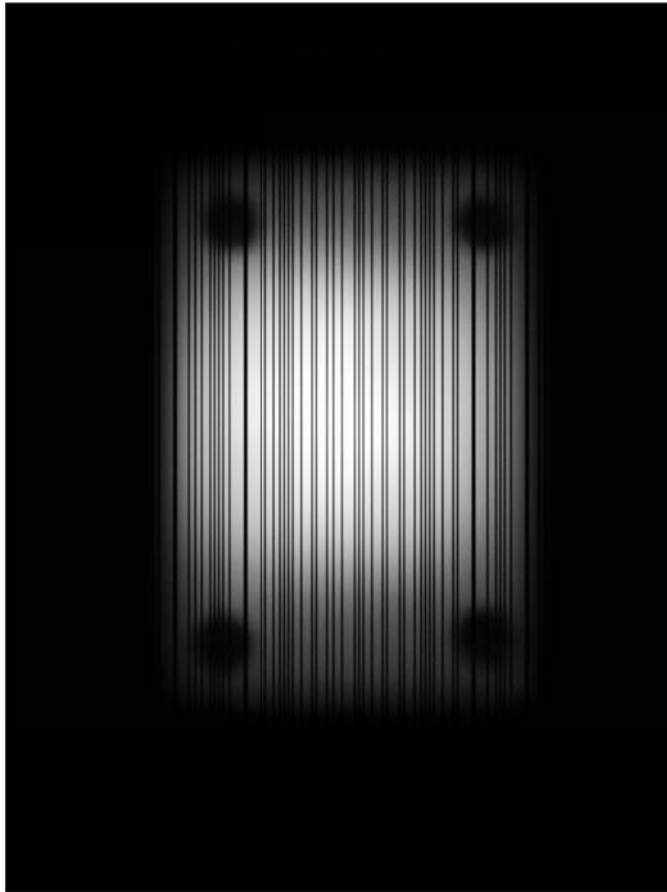


FIG. 423C

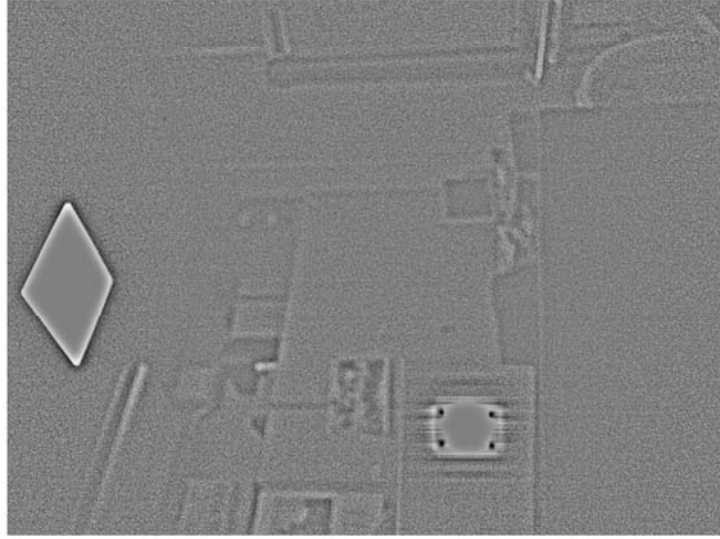


FIG. 423B

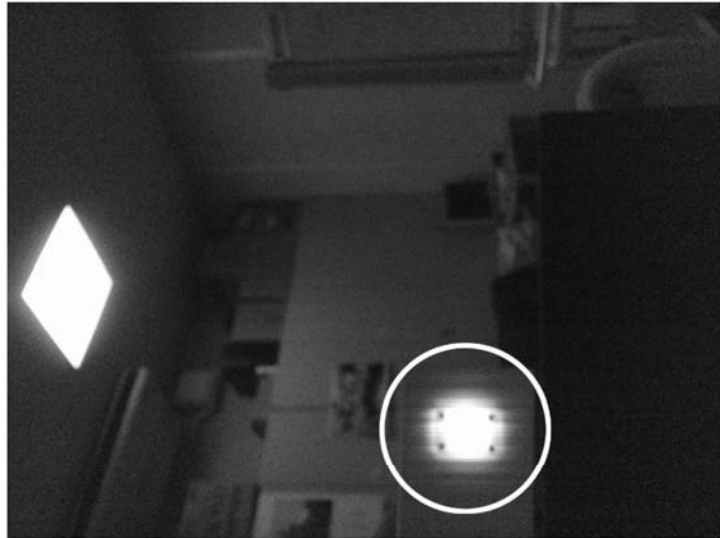


FIG. 423A

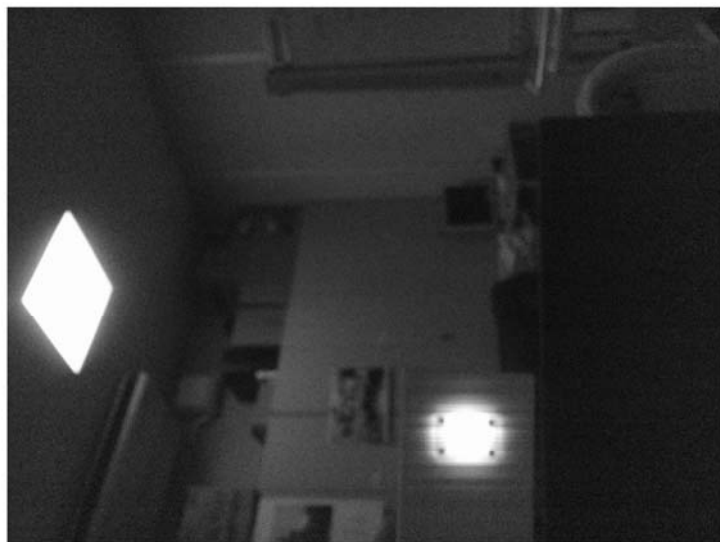


FIG. 424

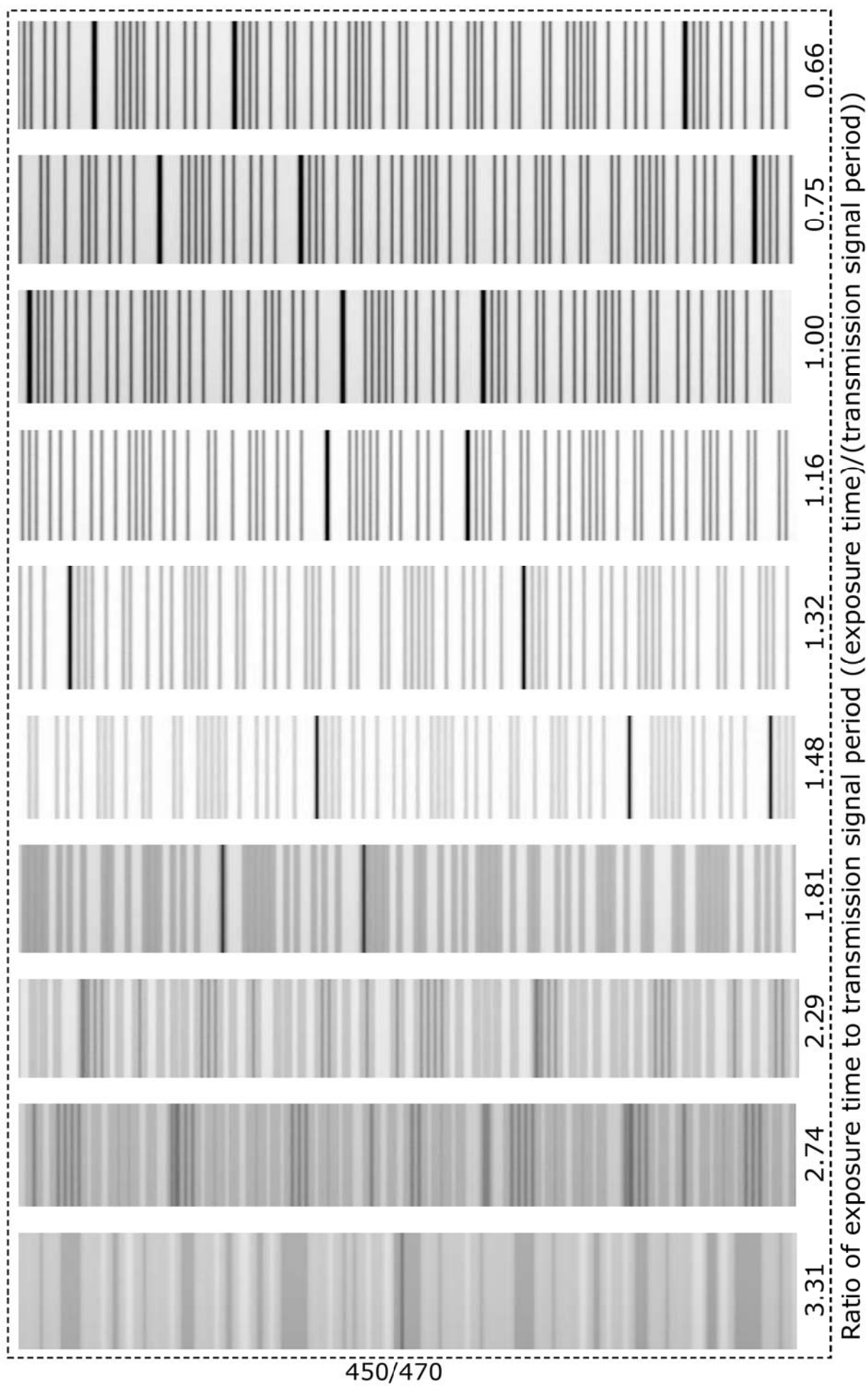


FIG. 425

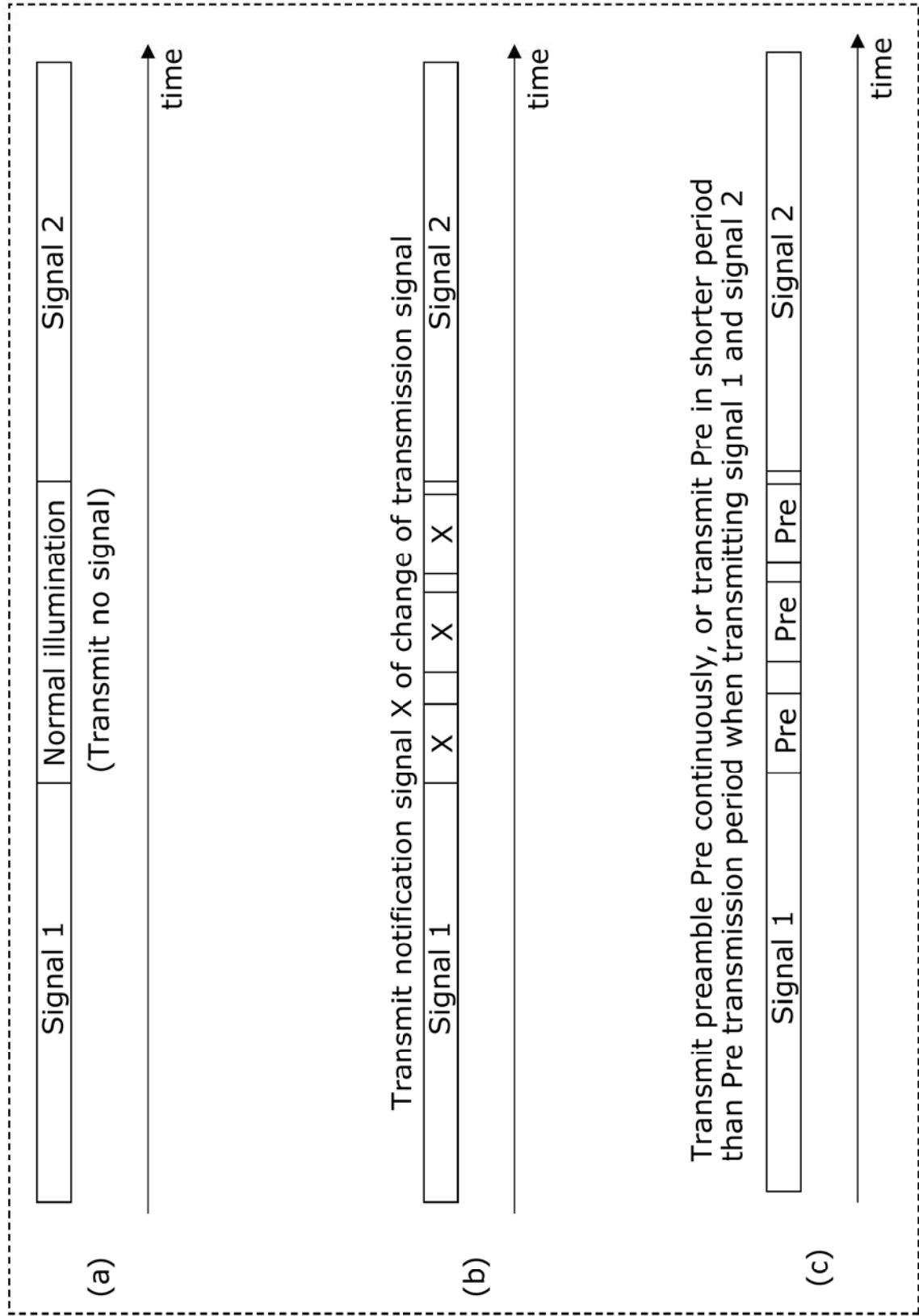
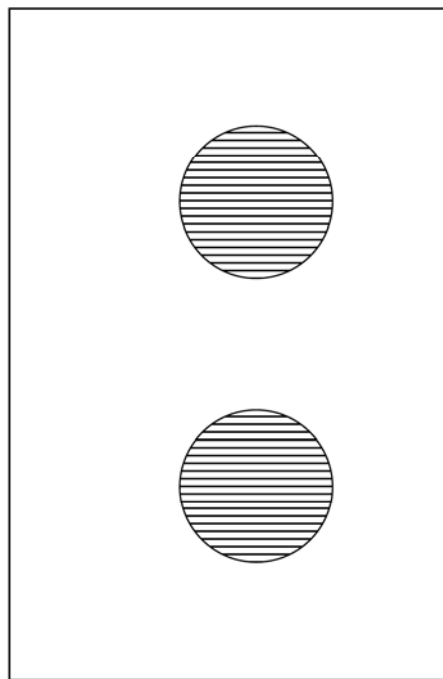
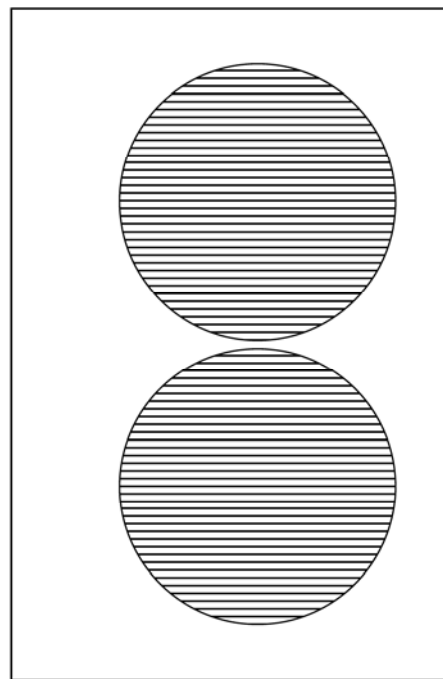


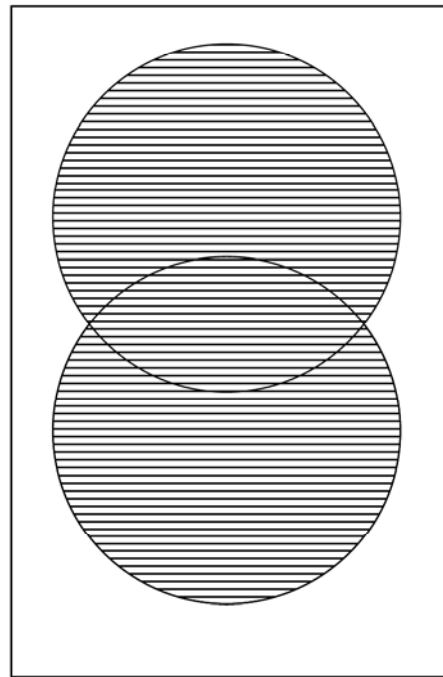
FIG. 426



(a)



(b)



(c)



FIG. 427

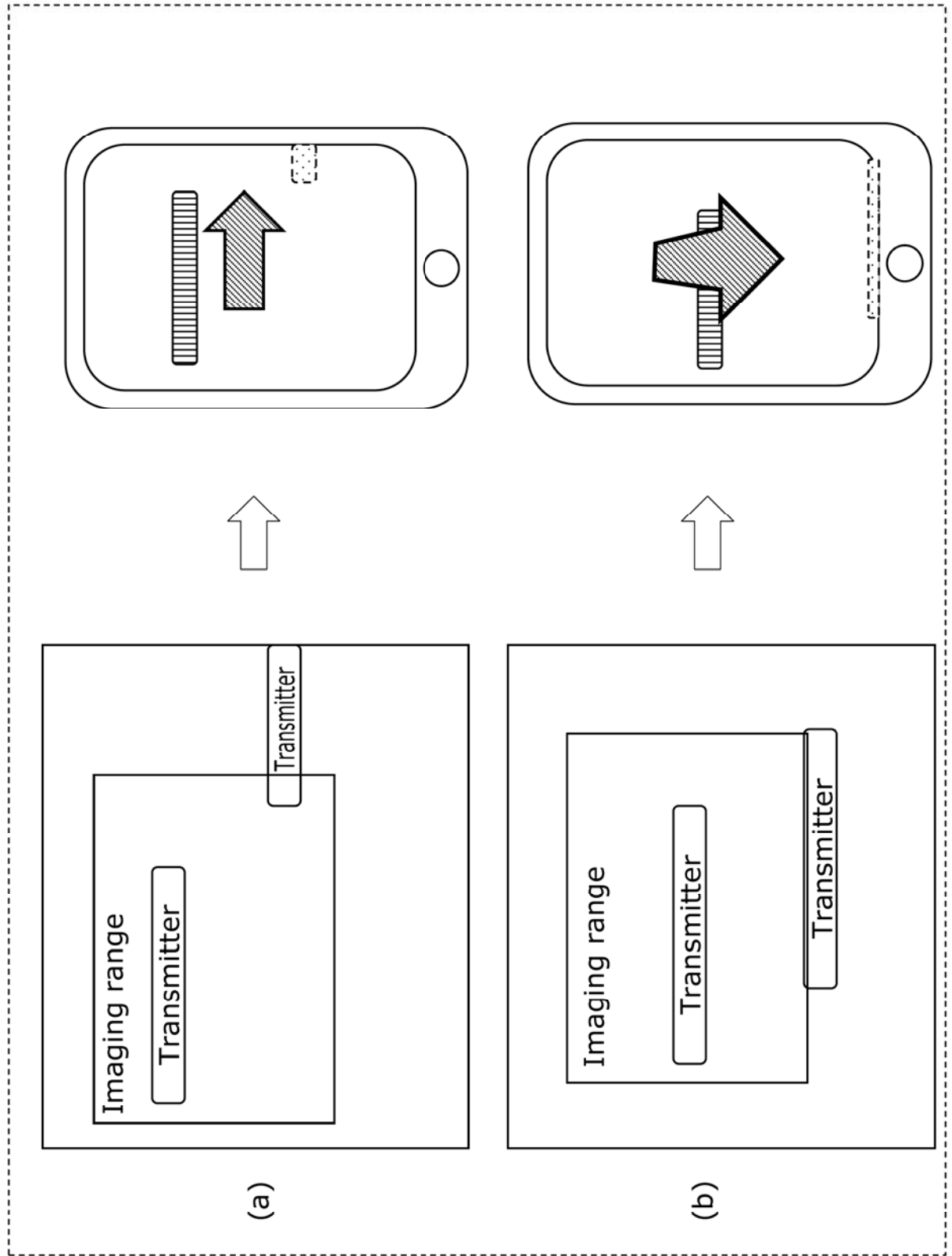


FIG. 428

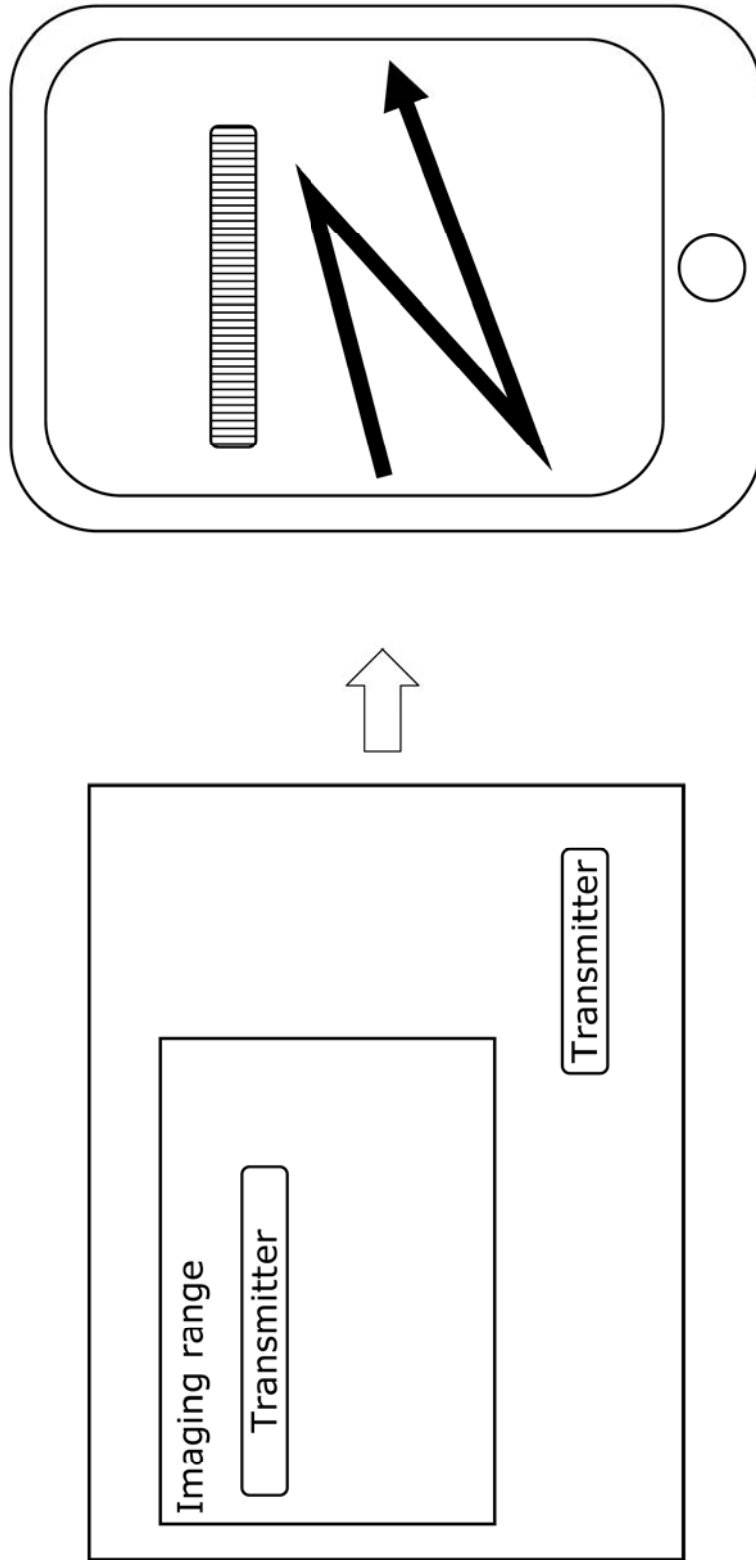


FIG. 429

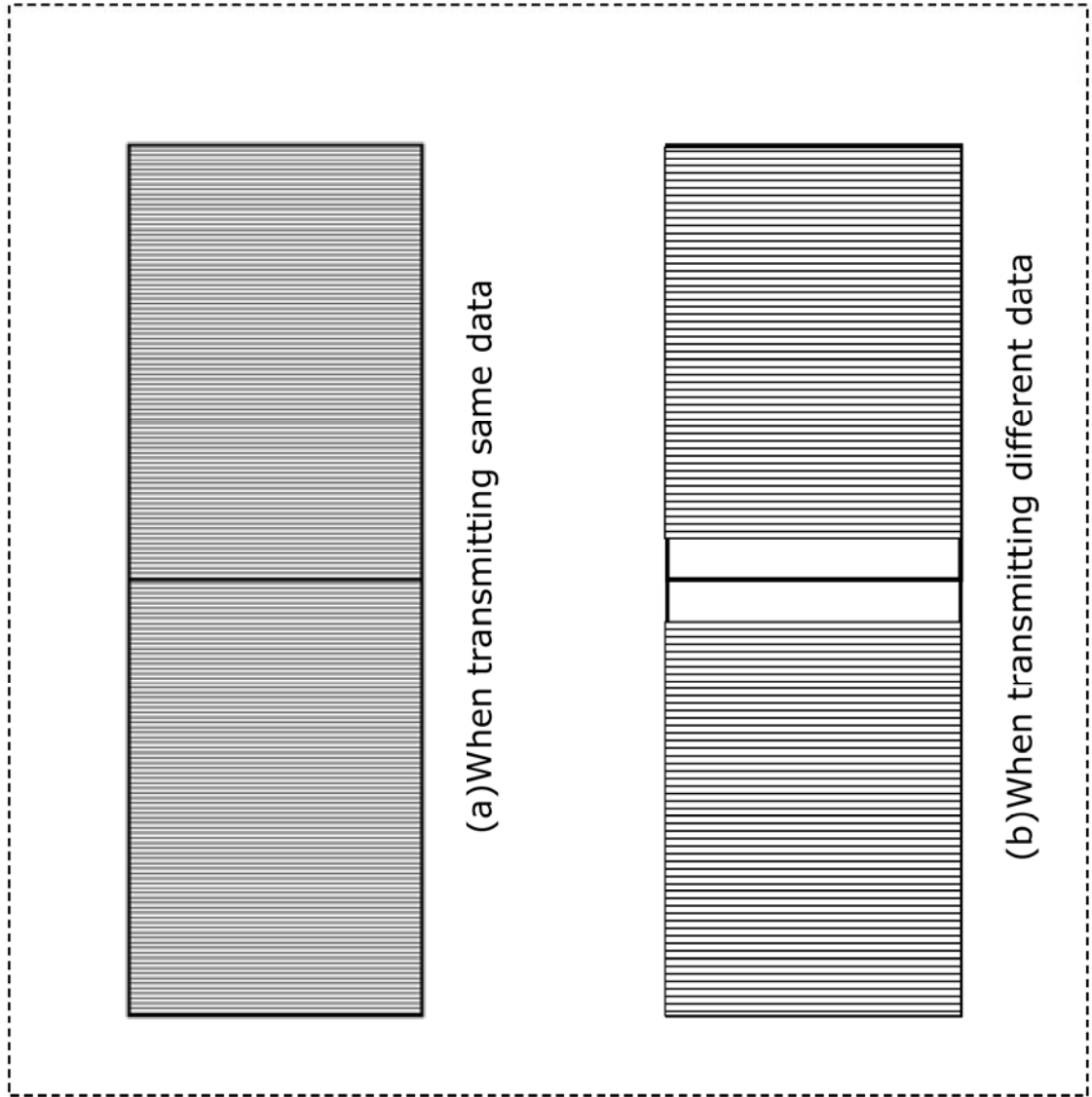


FIG. 430

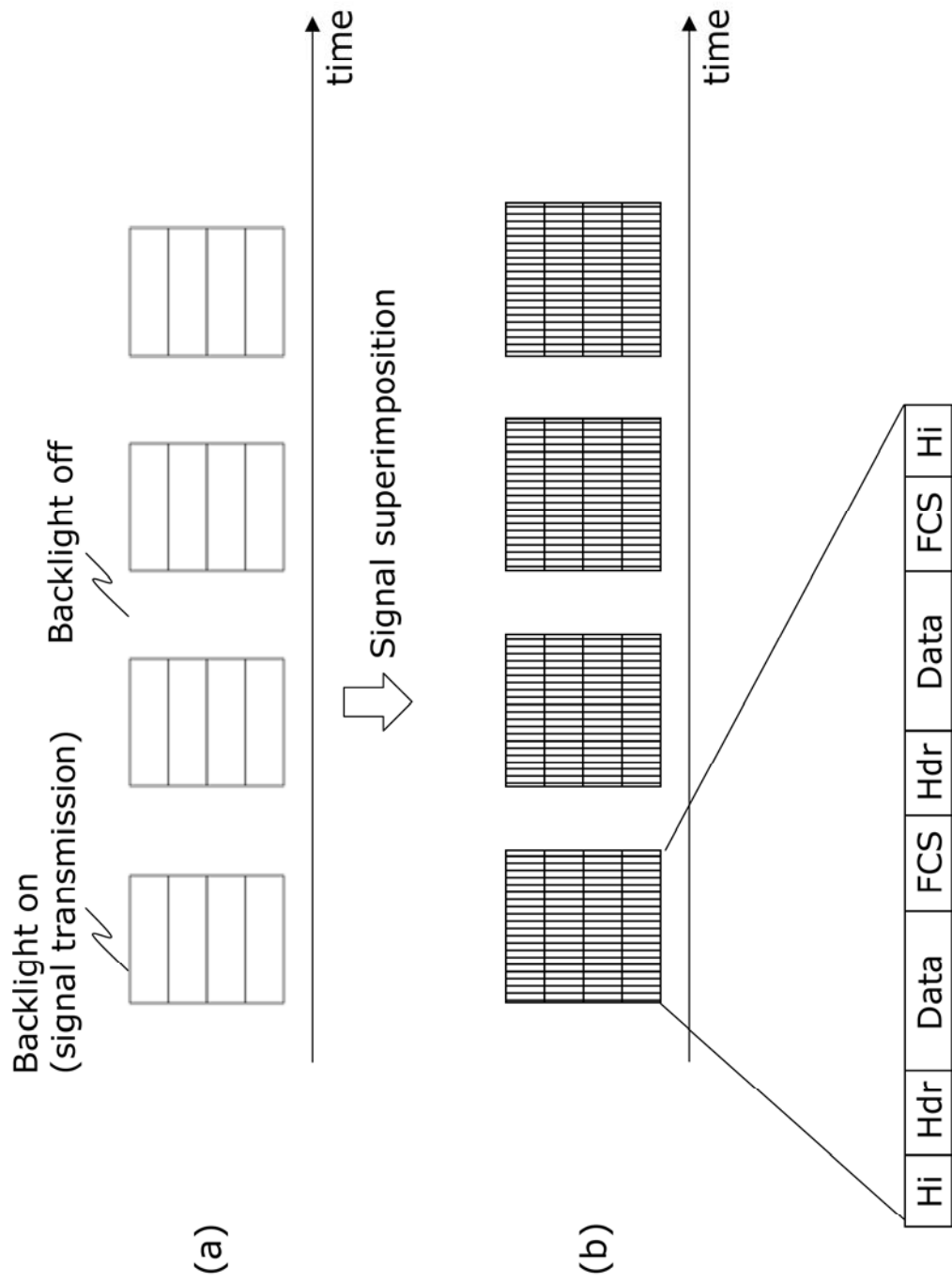


FIG. 431

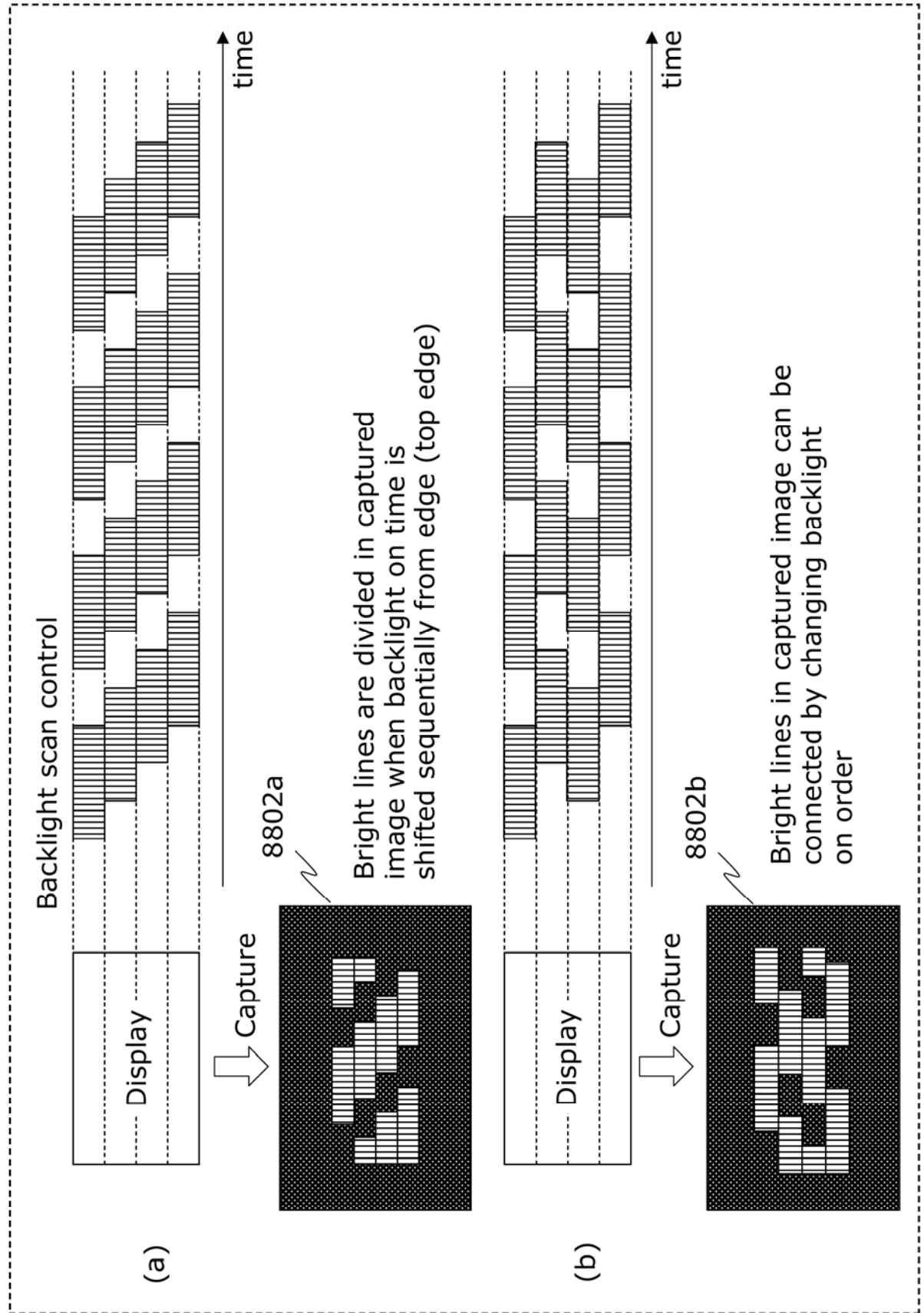


FIG. 432

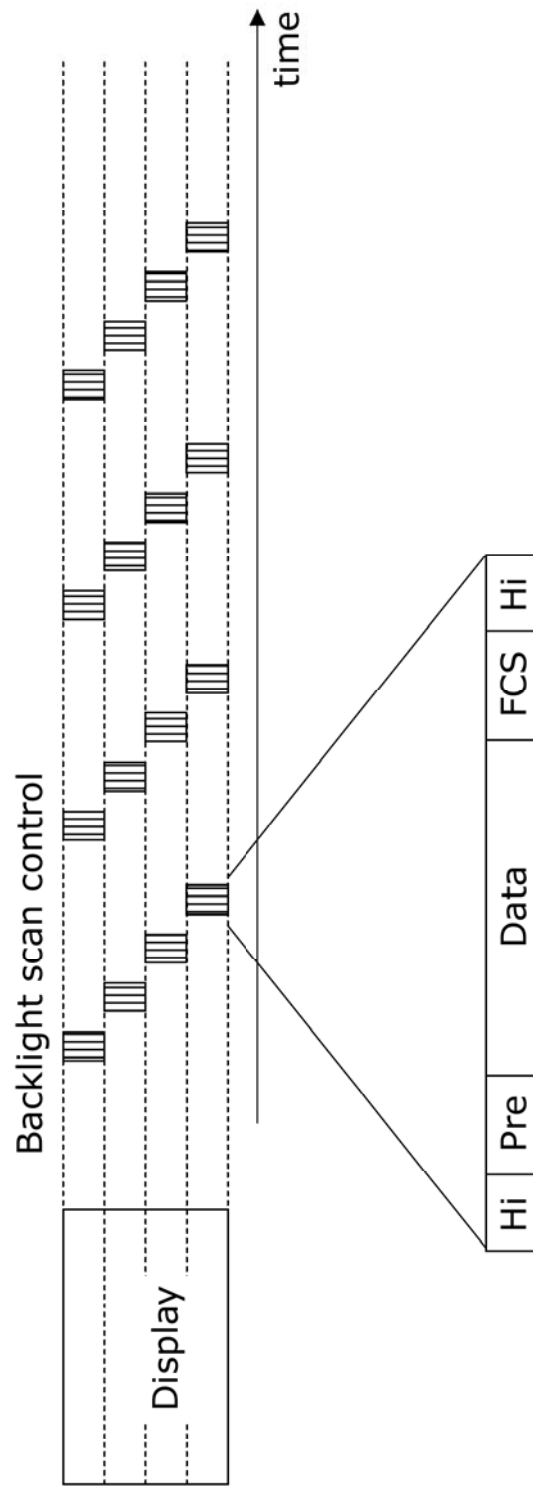


FIG. 433

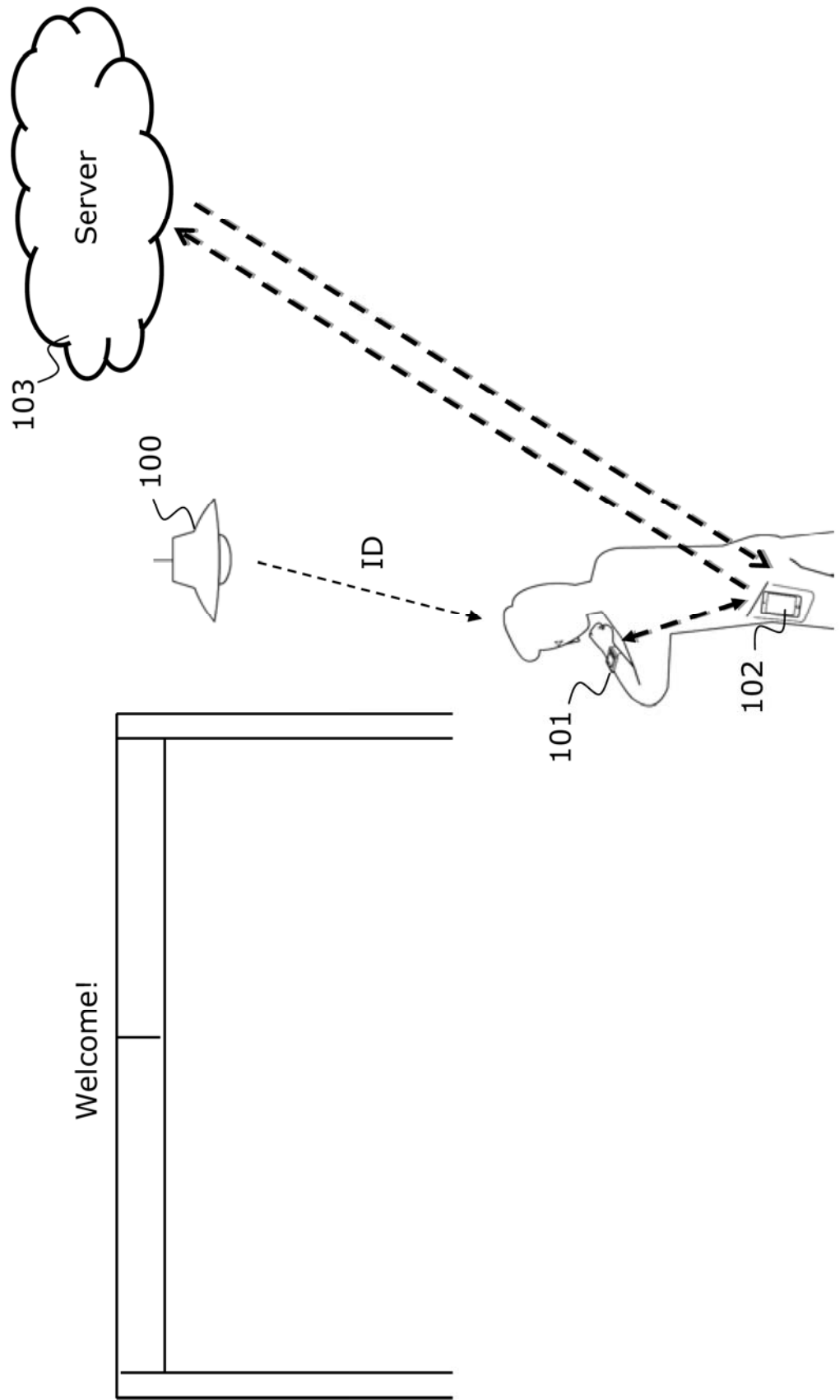


FIG. 434

| Membership number           | Store ID                    | Time | Position information |
|-----------------------------|-----------------------------|------|----------------------|
| User preference information | User biological information |      |                      |
| User search history         | User behavior history       |      |                      |



FIG. 435

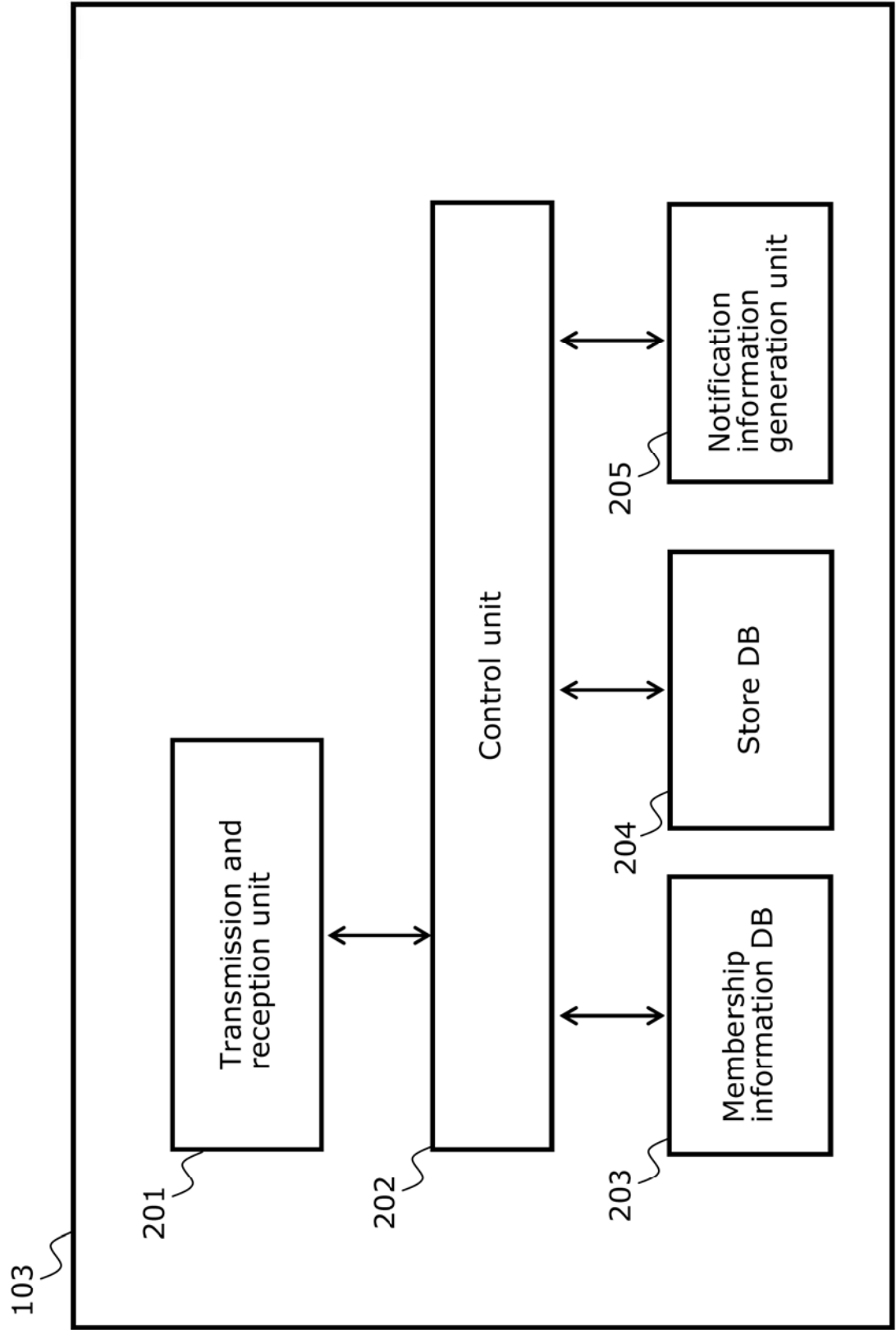


FIG. 436

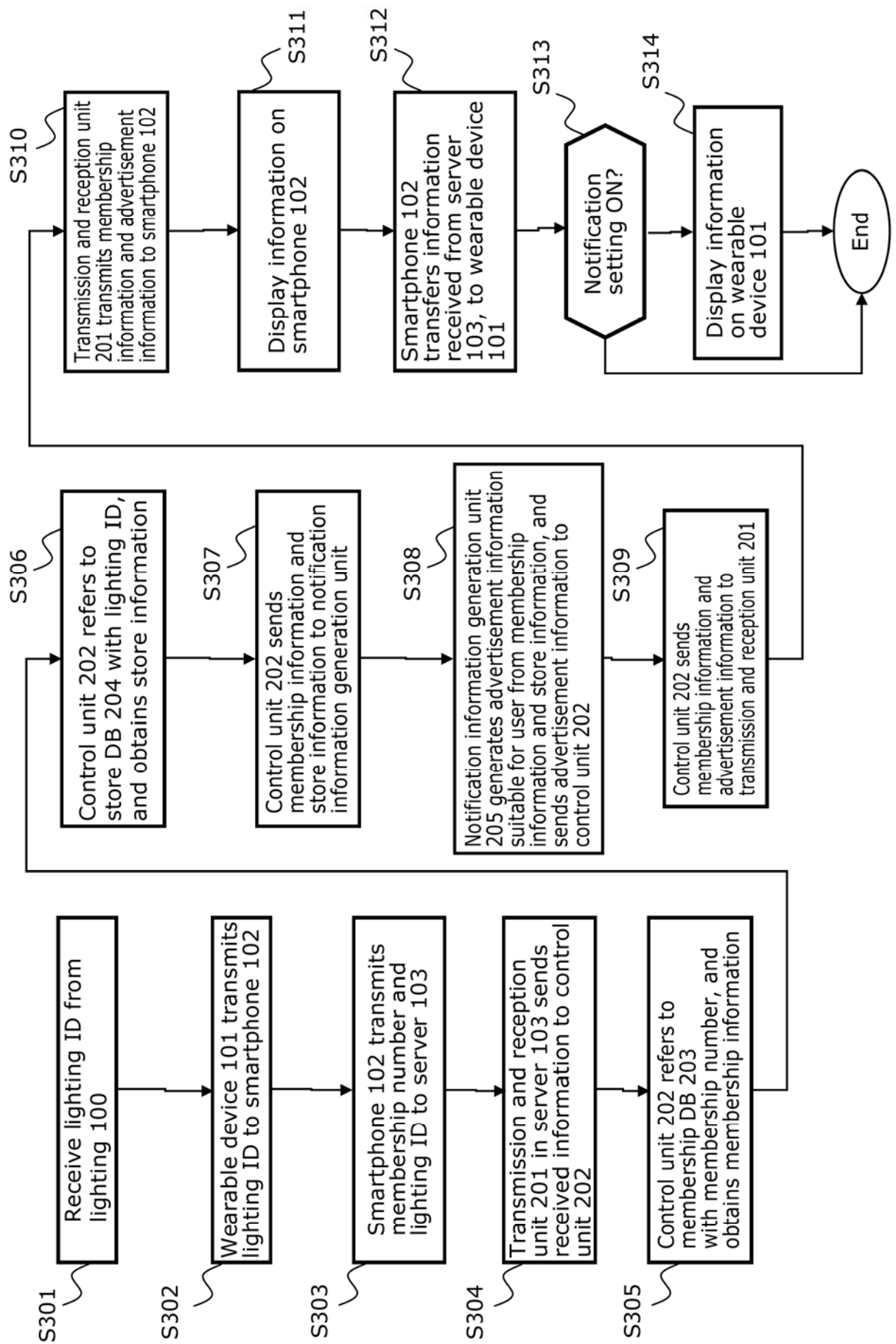


FIG. 437

|                                                 |                                                                |      |              |
|-------------------------------------------------|----------------------------------------------------------------|------|--------------|
| Membership number                               | Store ID                                                       | Time | Store map DB |
| Coupon information<br>Store product information | User membership information<br>(points, expiration date, etc.) |      |              |

FIG. 438

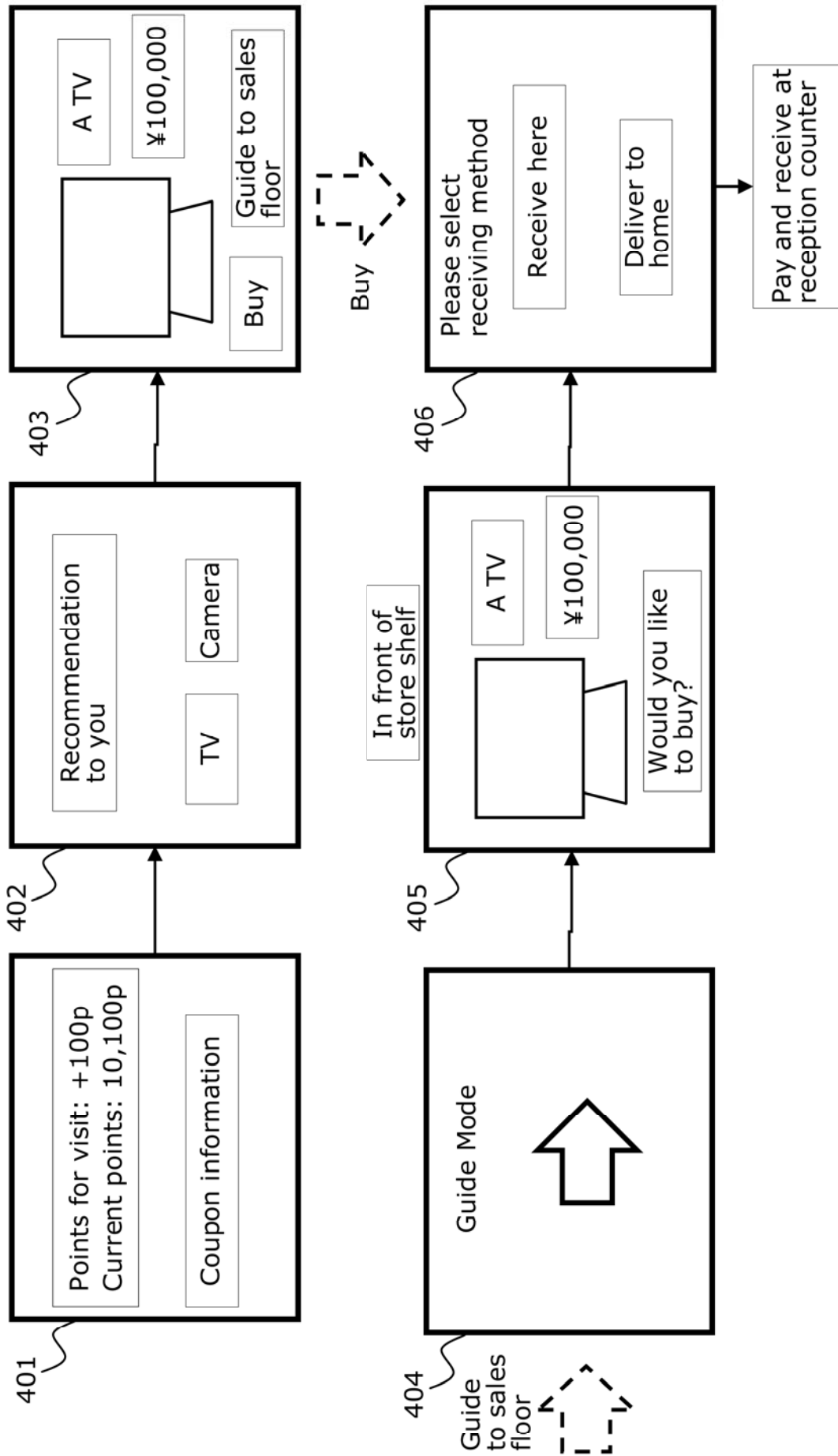


FIG. 439

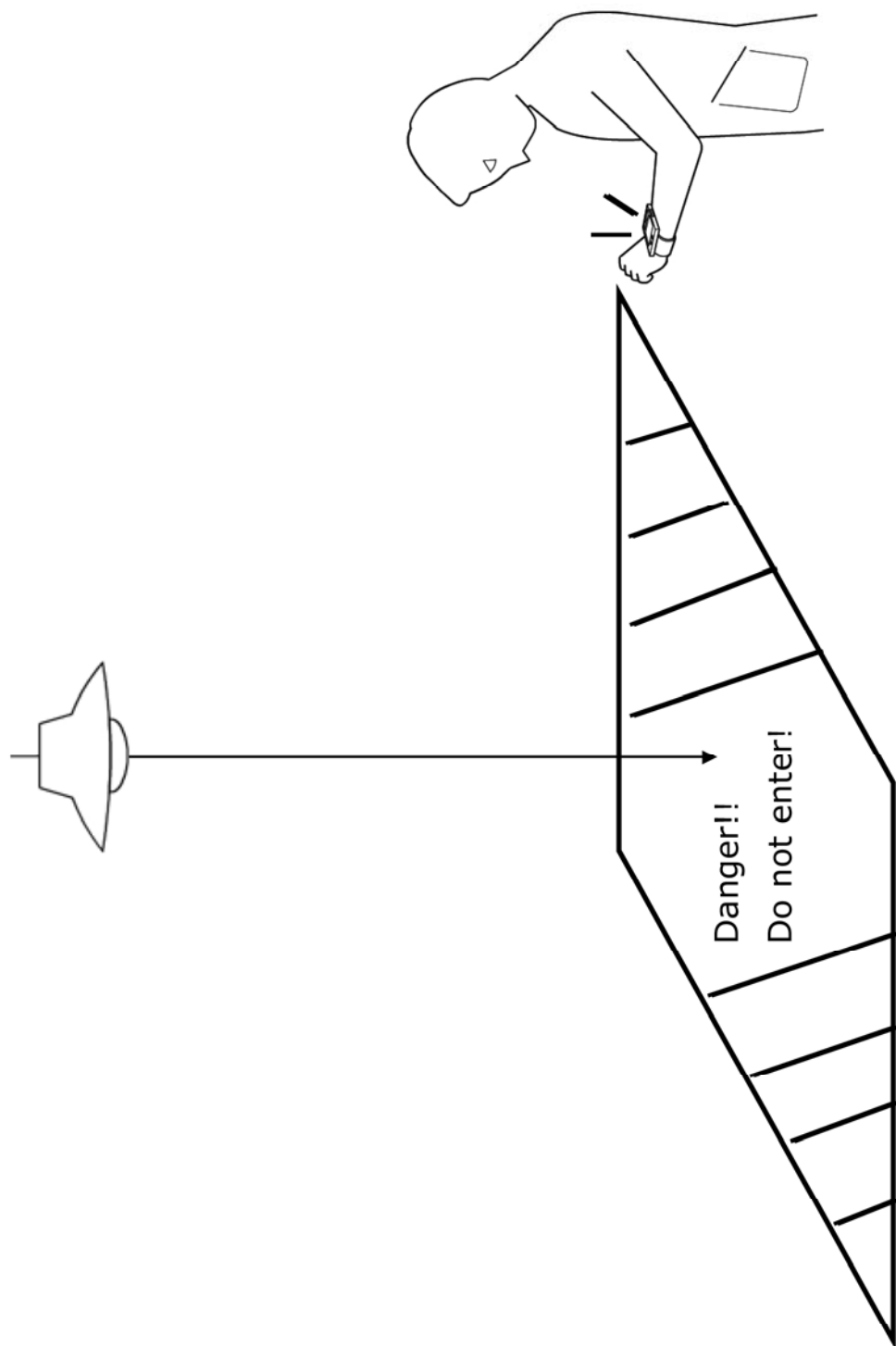


FIG. 440

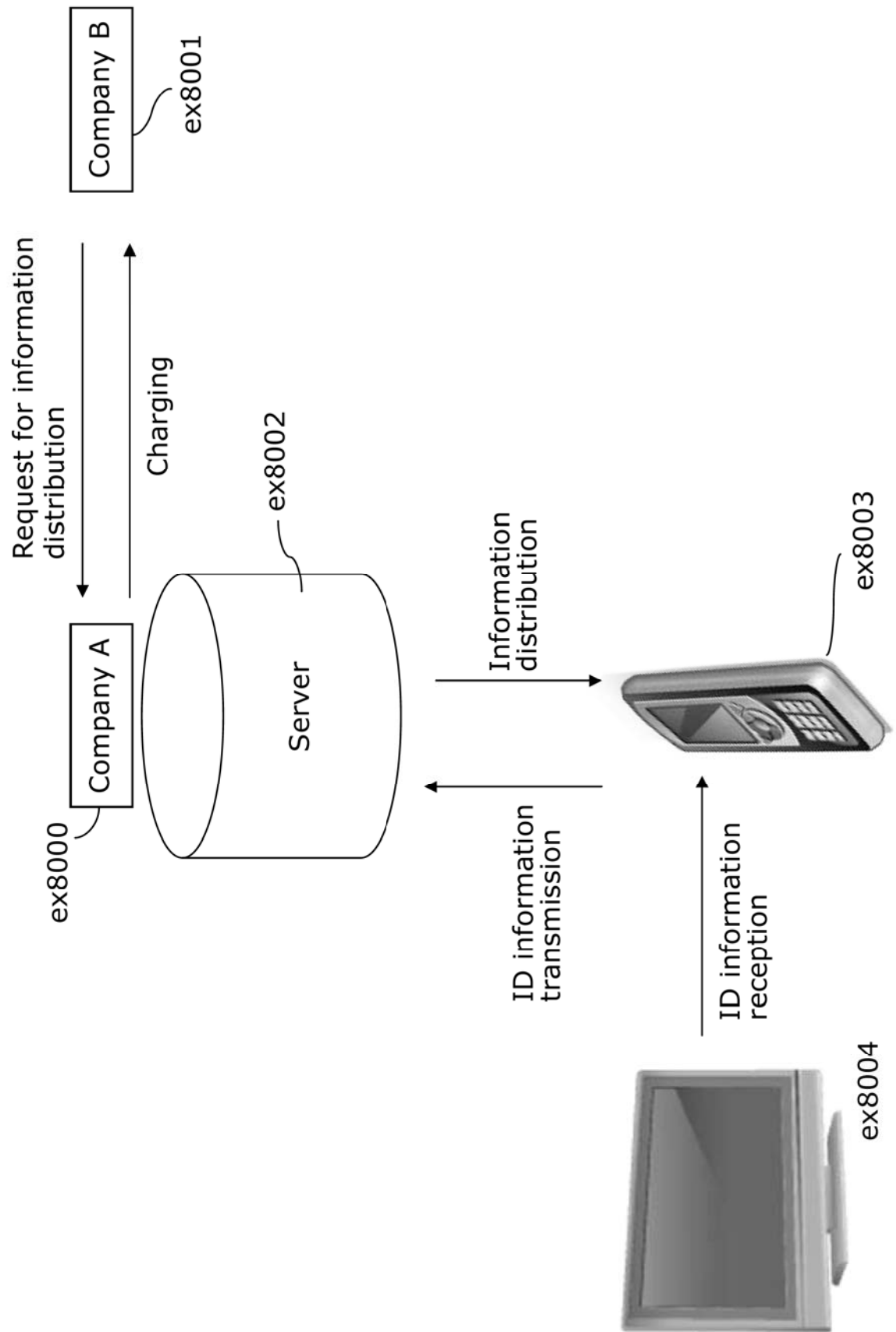


FIG. 441

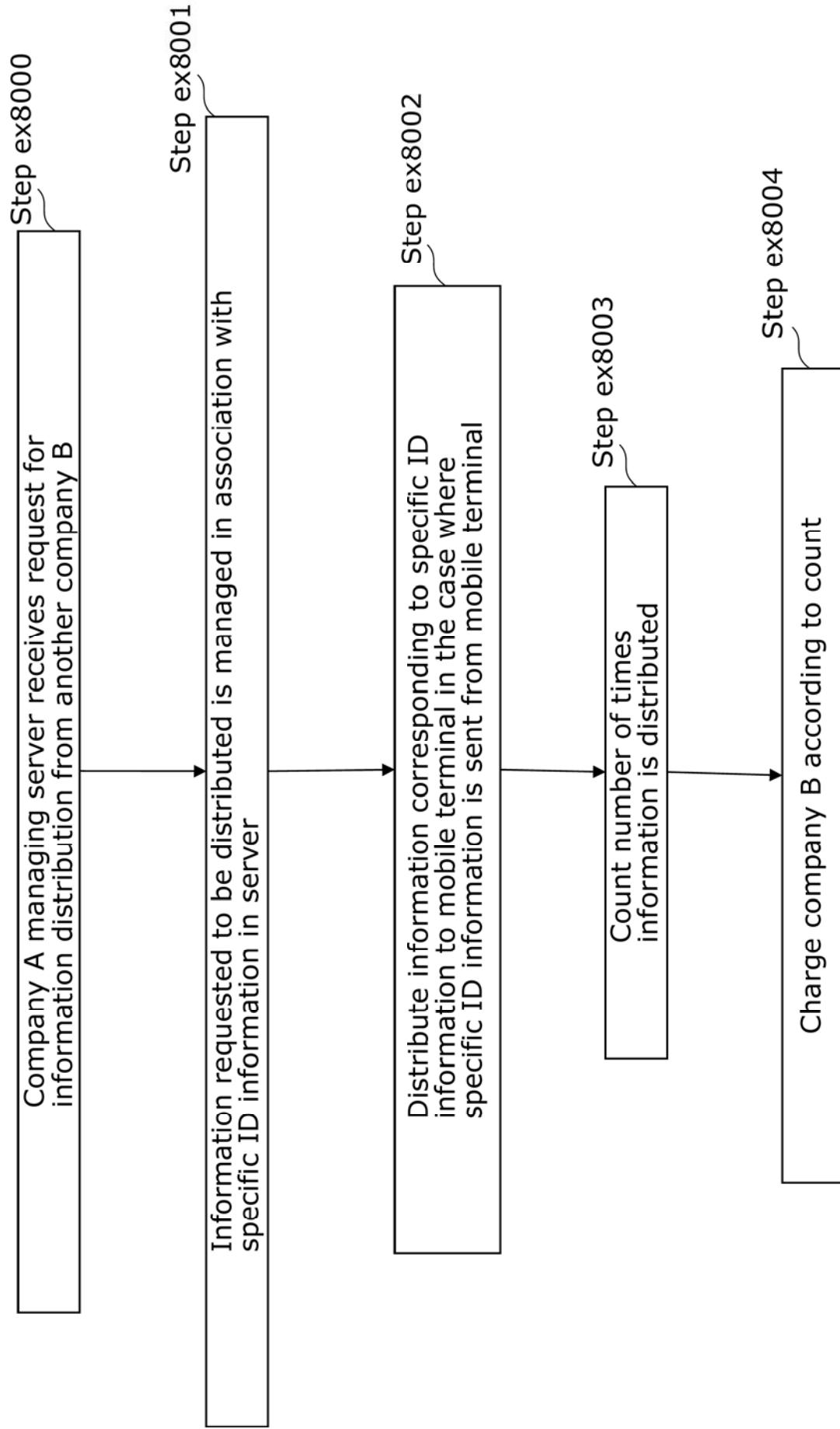


FIG. 442

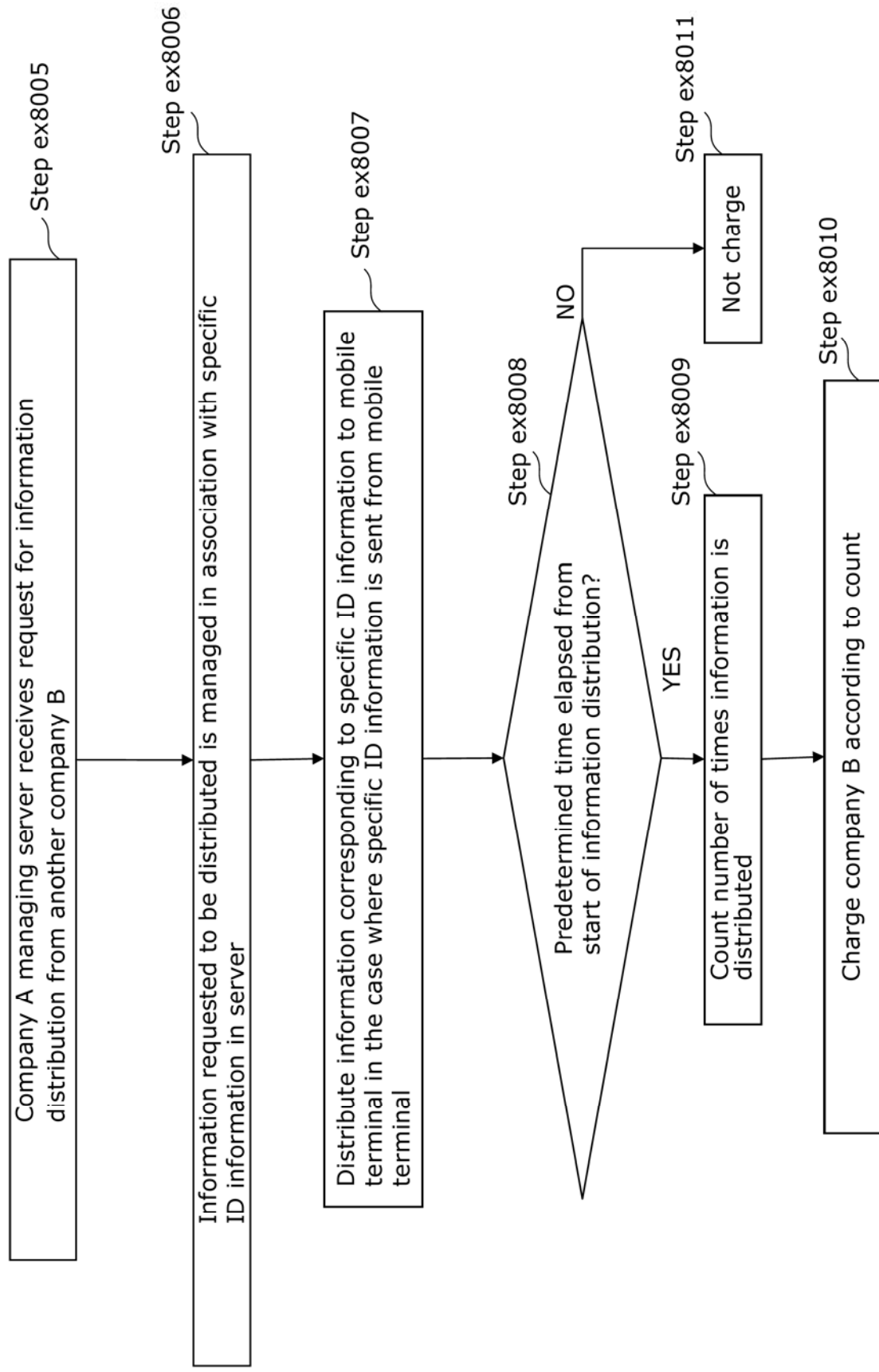




FIG. 443

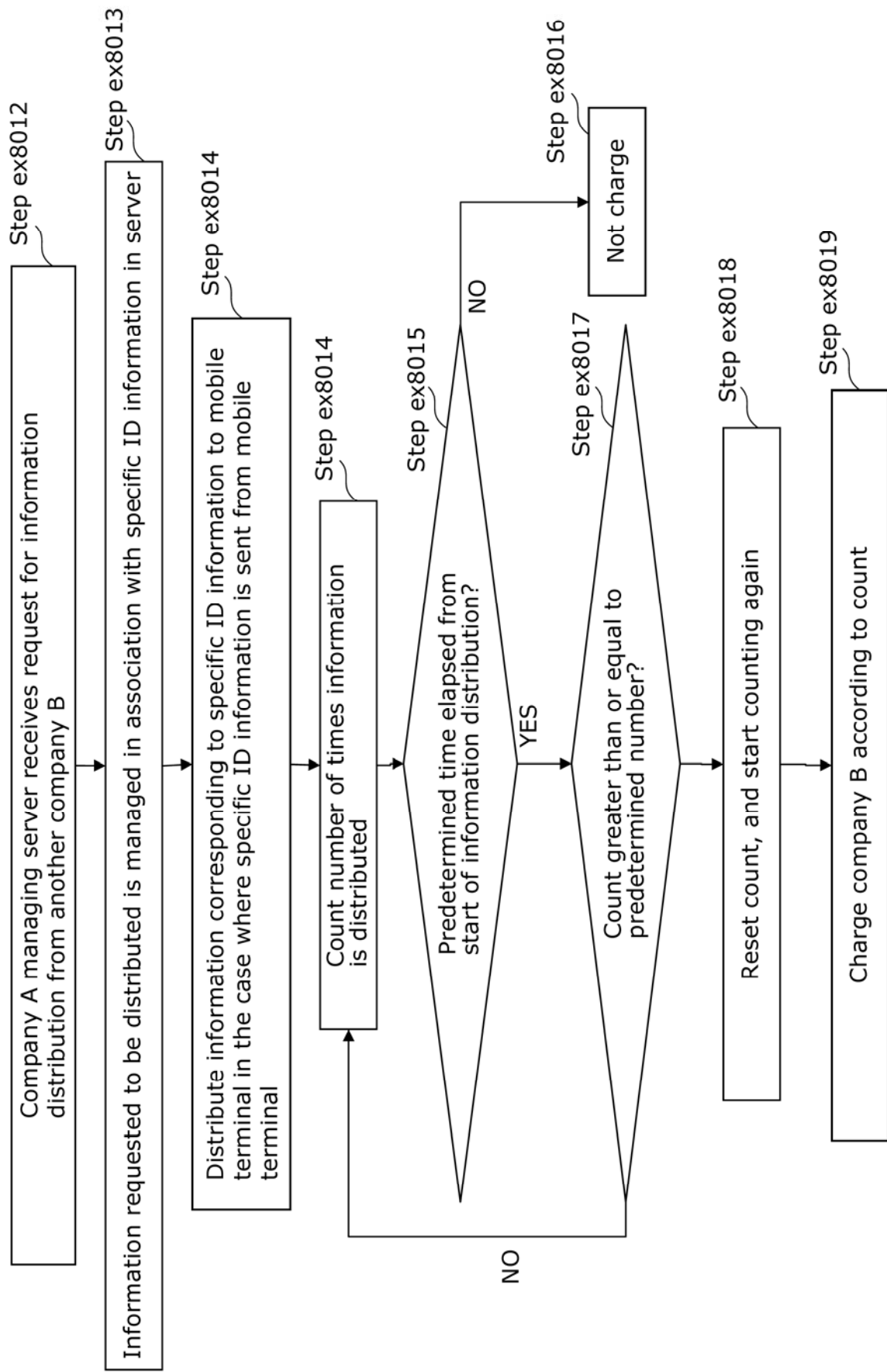


FIG. 444A

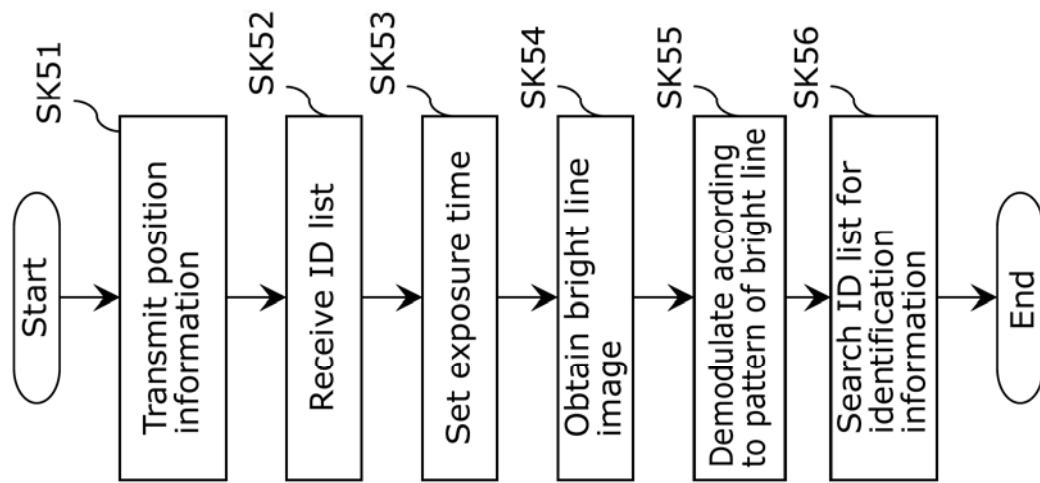


FIG. 444B

