FIG. 1A

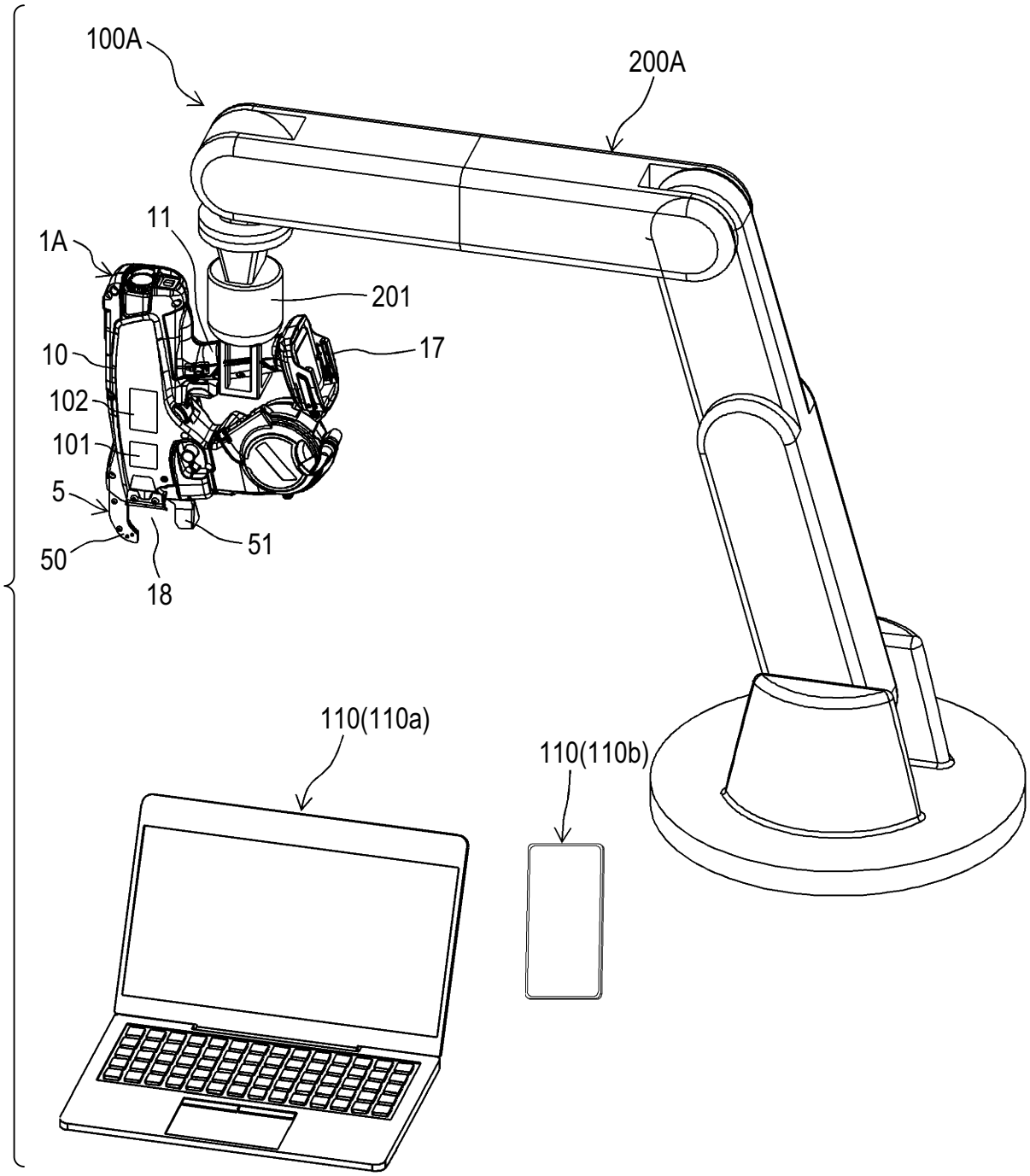


FIG. 1B

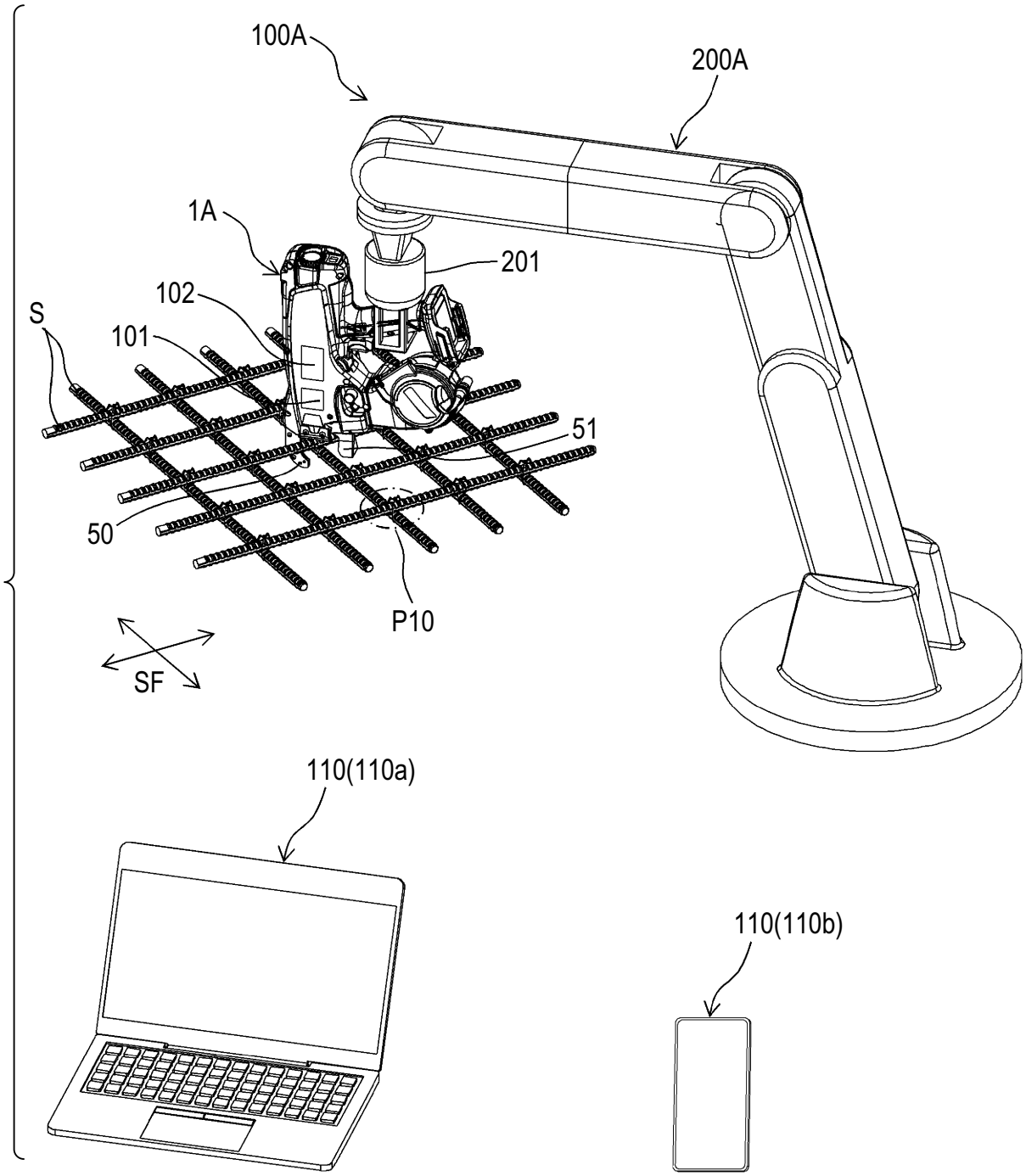


FIG. 1C

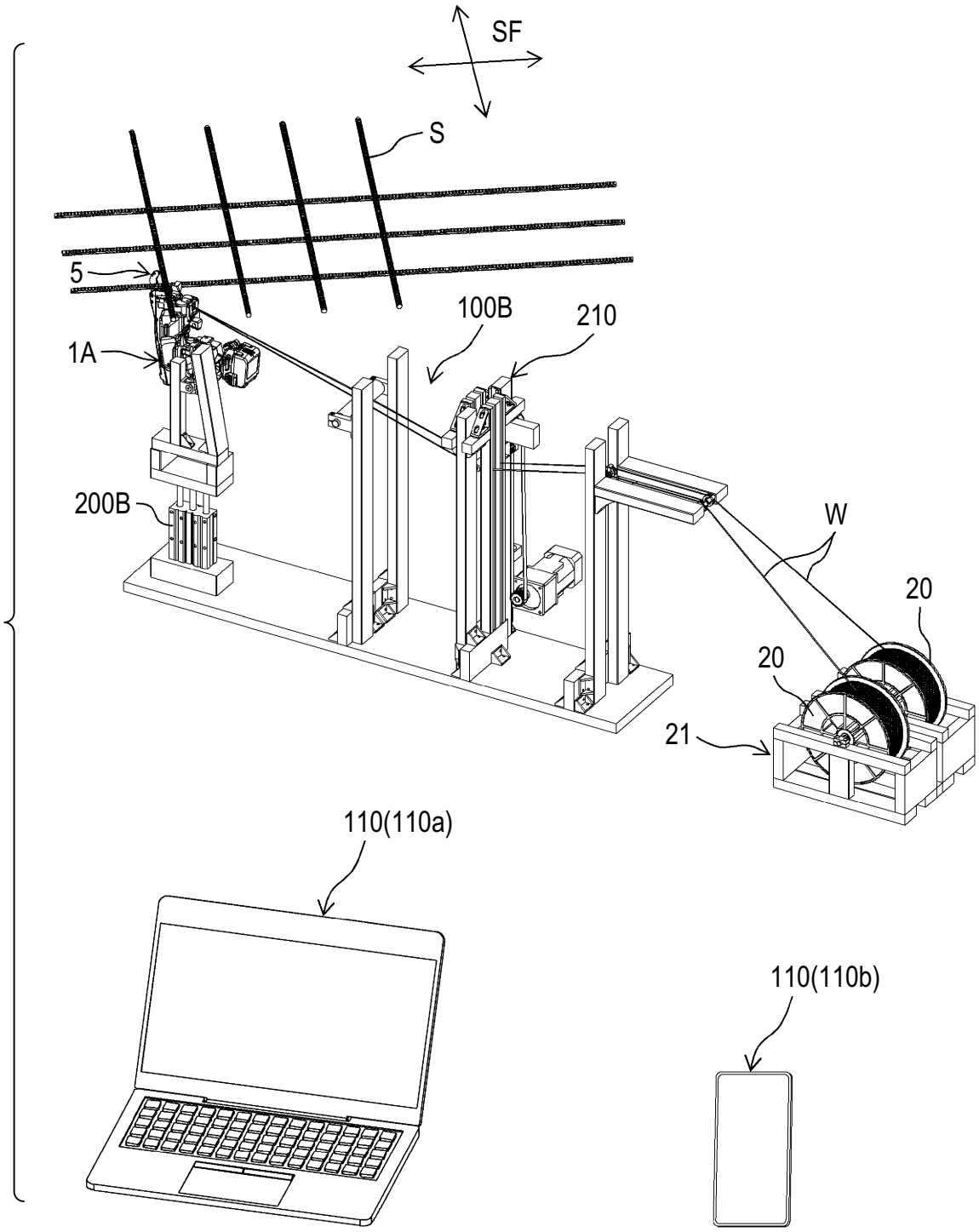


FIG. 2

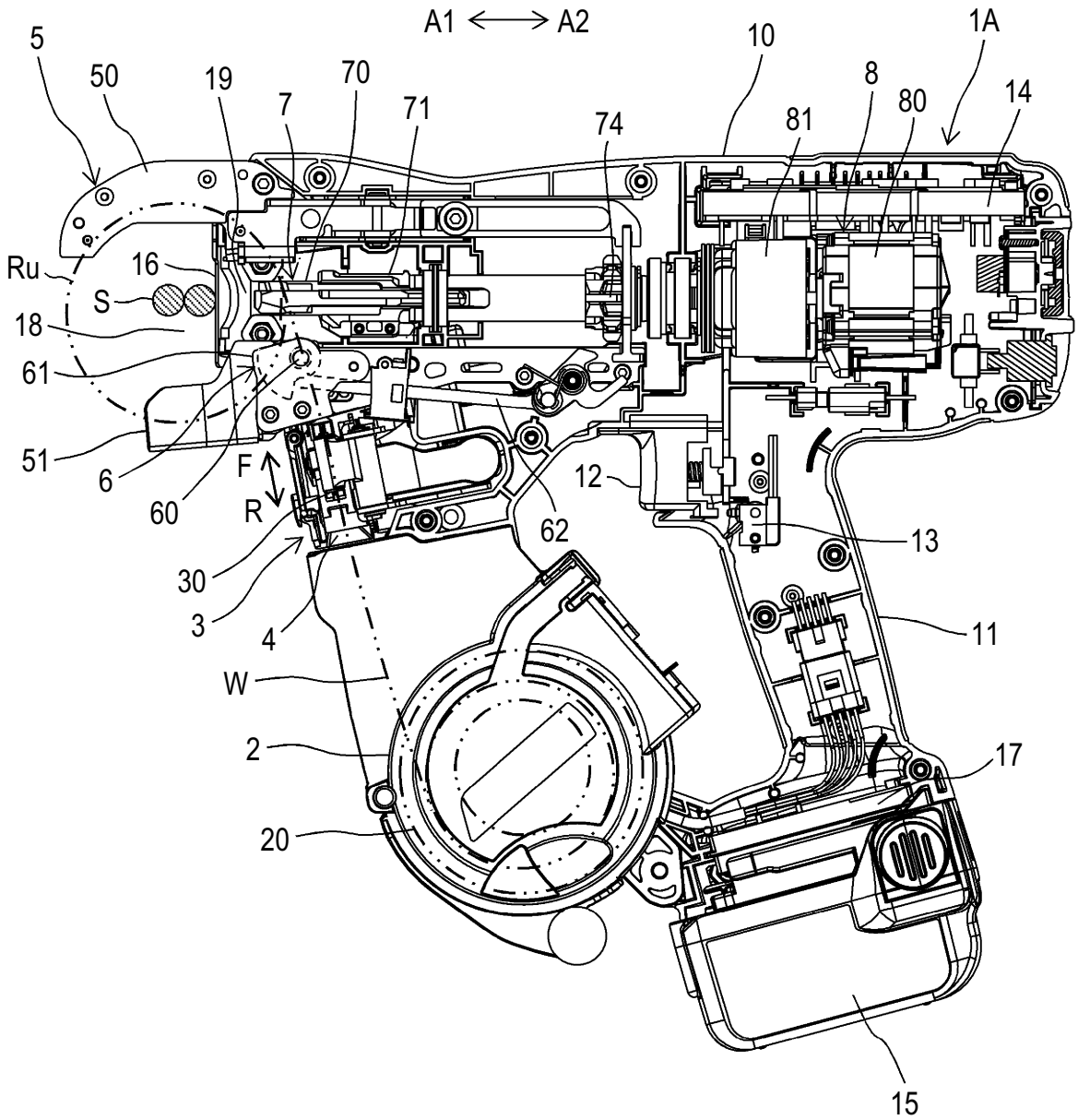

A1 ⟷ A2
5
50
19
7
70
71
74
10
81
8
80
14
1A
Ru
16
S
18
61
51
6
60
F
R
62
12
13
11
30
3
4
W
2
20
17
15

FIG. 3A

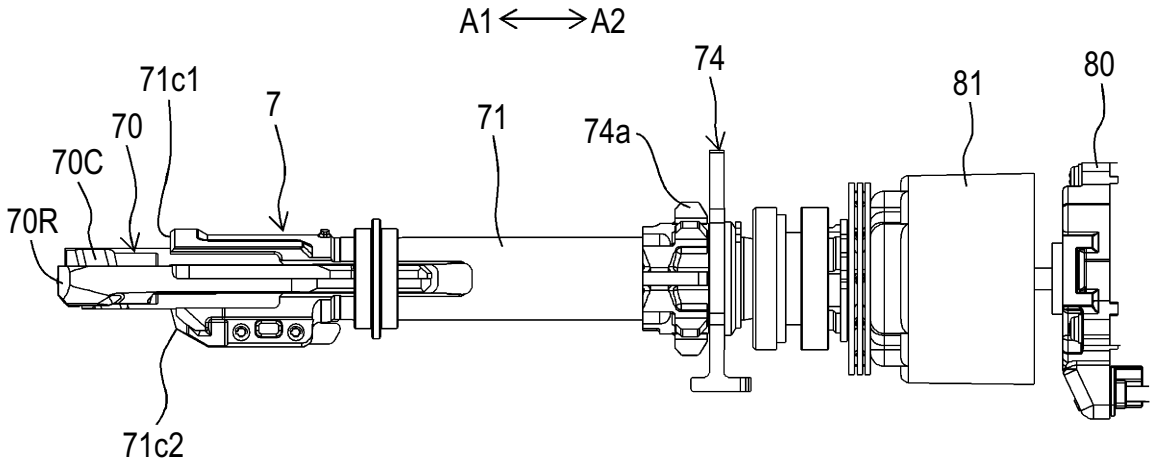

A1⟷A2
71c1
7
70
70C
70R
71
74a
74
81
80
71c2

FIG. 3B

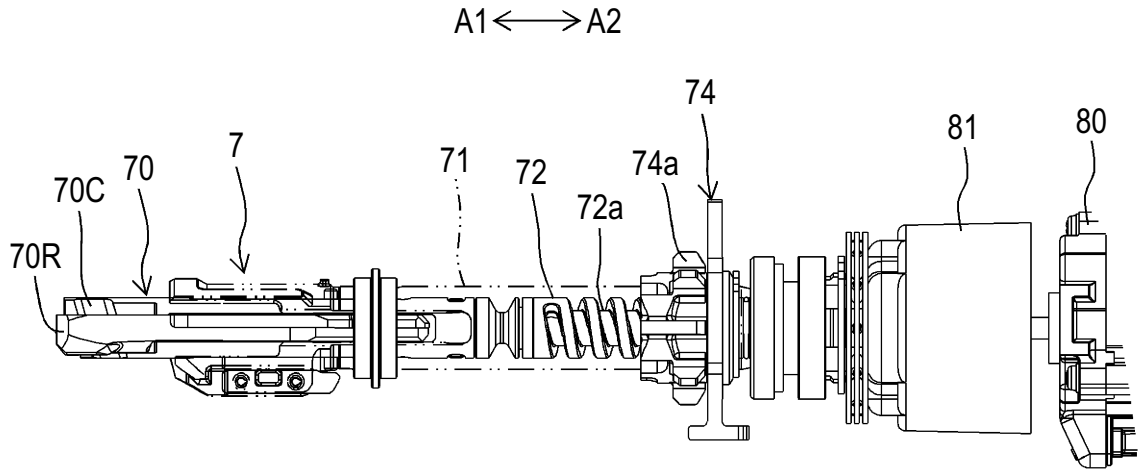

A1⟷A2
74
81
80
7
71
72
74a
70
70C
72a
70R

FIG. 3C

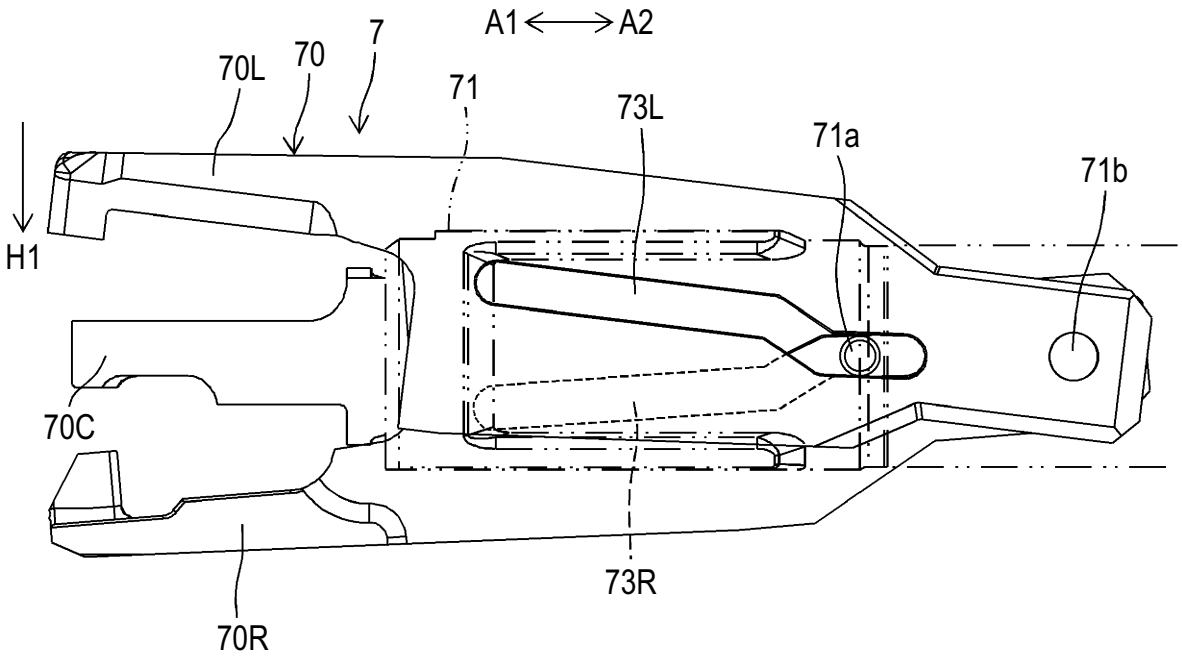

A1 ⟷ A2
7
70L
70
71
73L
71a
71b
H1
70C
73R
70R

FIG. 3D

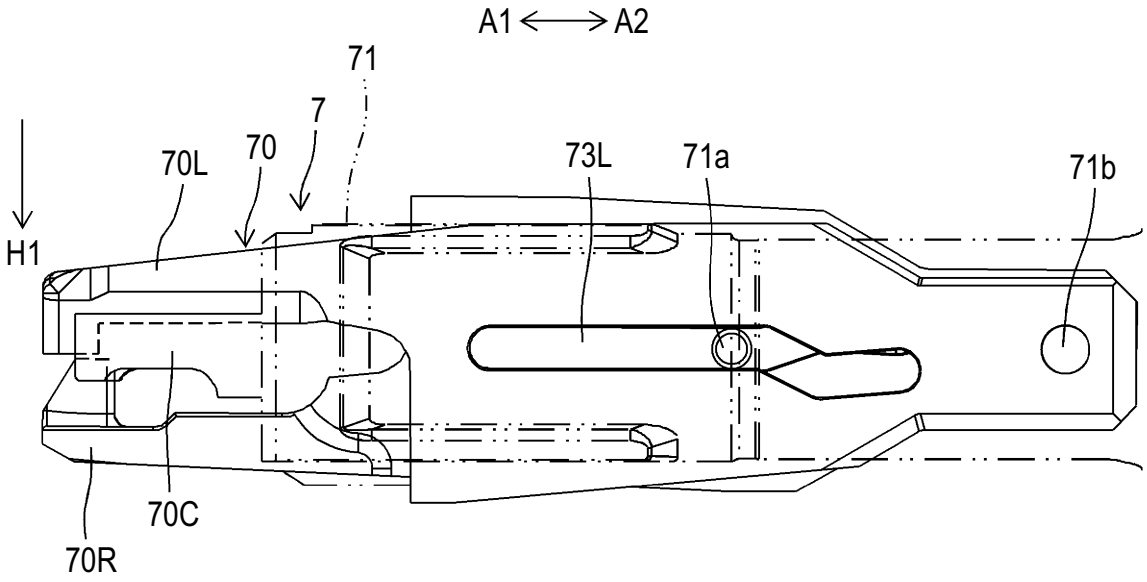

A1 ⟷ A2
71
7
70L
70
73L
71a
71b
H1
70C
70R

FIG. 4A

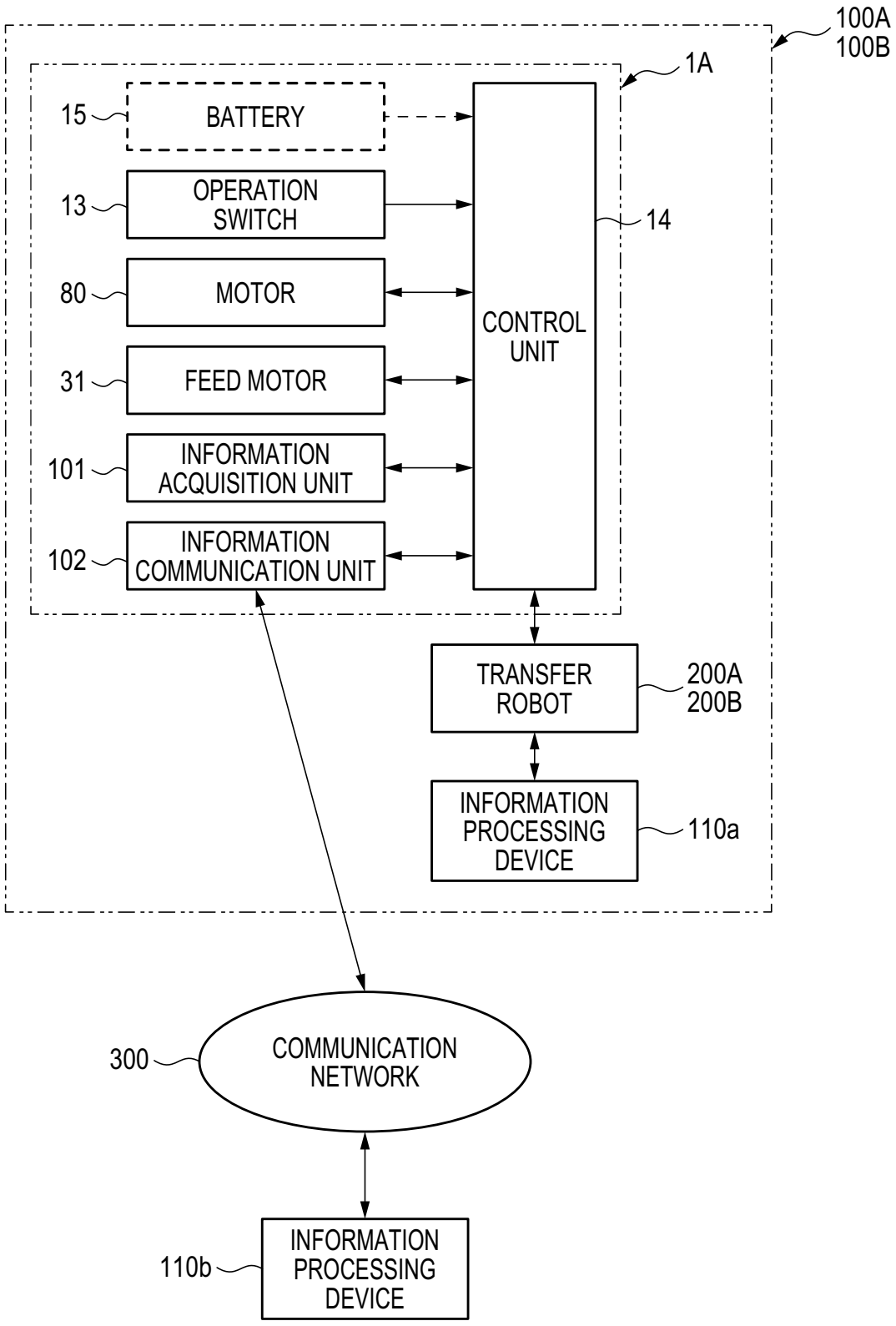

100A
100B
1A
15
BATTERY
13
OPERATION SWITCH
80
MOTOR
31
FEED MOTOR
101
INFORMATION ACQUISITION UNIT
102
INFORMATION COMMUNICATION UNIT
CONTROL UNIT
14
TRANSFER ROBOT
200A
200B
INFORMATION PROCESSING DEVICE
110a
300
COMMUNICATION NETWORK
110b
INFORMATION PROCESSING DEVICE

FIG. 4B

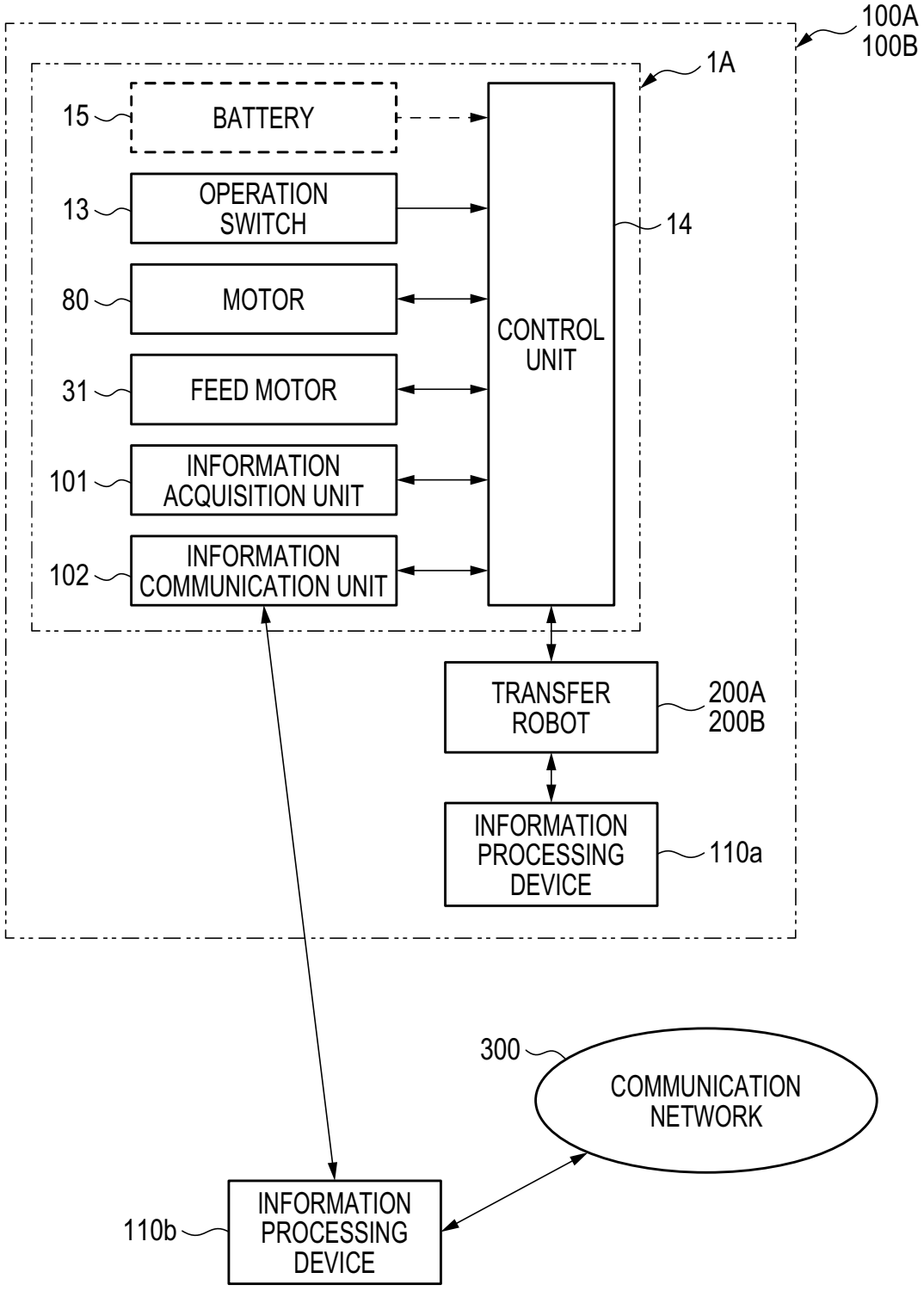

100A
100B
1A
15
BATTERY
13
OPERATION SWITCH
14
80
MOTOR
CONTROL UNIT
31
FEED MOTOR
101
INFORMATION ACQUISITION UNIT
102
INFORMATION COMMUNICATION UNIT
TRANSFER ROBOT
200A
200B
INFORMATION PROCESSING DEVICE
110a
300
COMMUNICATION NETWORK
110b
INFORMATION PROCESSING DEVICE

FIG. 4C

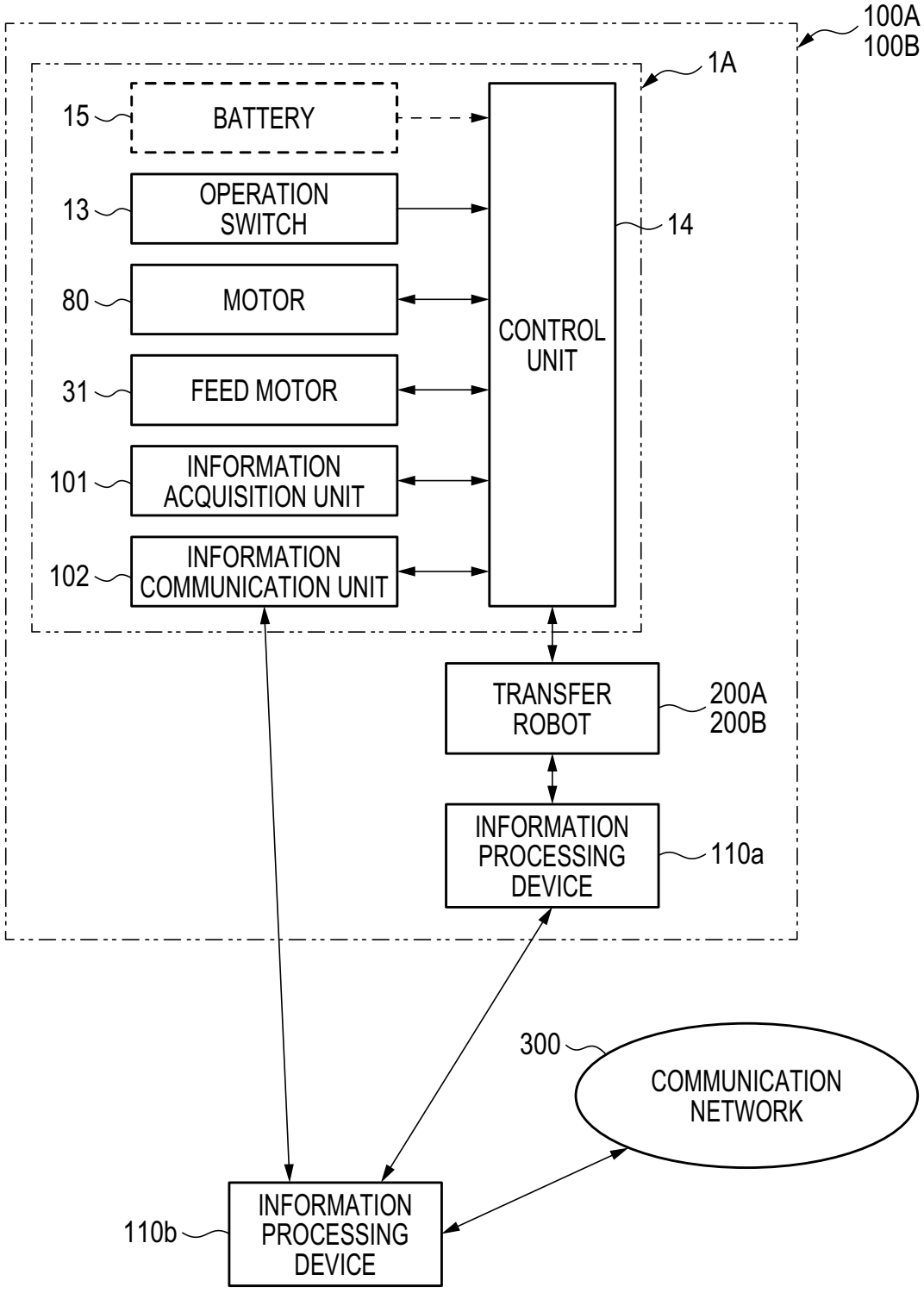

100A
100B
1A
15
BATTERY
13
OPERATION SWITCH
14
80
MOTOR
CONTROL UNIT
31
FEED MOTOR
101
INFORMATION ACQUISITION UNIT
102
INFORMATION COMMUNICATION UNIT
TRANSFER ROBOT
200A
200B
INFORMATION PROCESSING DEVICE
110a
300
COMMUNICATION NETWORK
110b
INFORMATION PROCESSING DEVICE

FIG. 4D

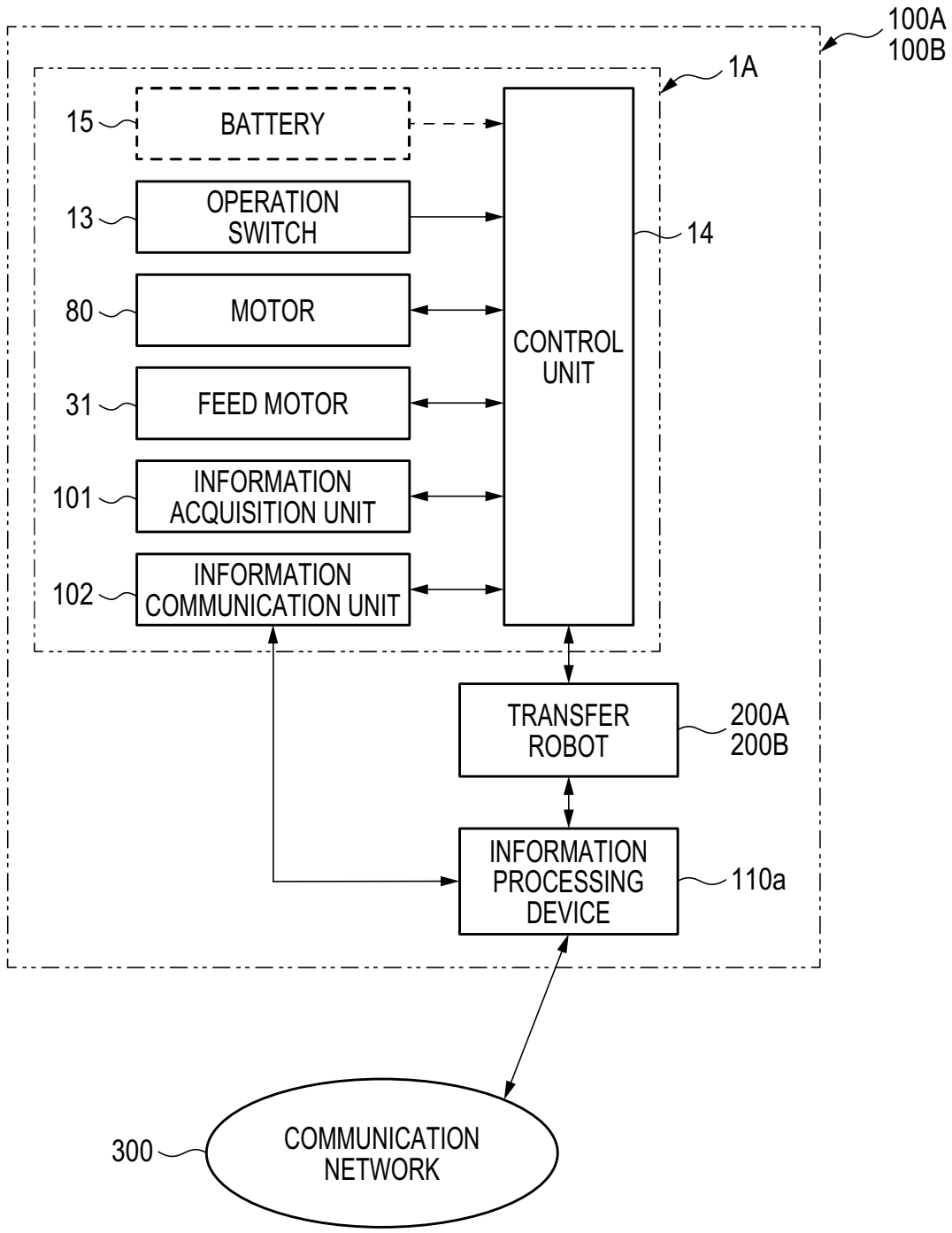

100A
100B
1A
15
BATTERY
13
OPERATION SWITCH
14
80
MOTOR
CONTROL UNIT
31
FEED MOTOR
101
INFORMATION ACQUISITION UNIT
102
INFORMATION COMMUNICATION UNIT
TRANSFER ROBOT
200A
200B
INFORMATION PROCESSING DEVICE
110a
300
COMMUNICATION NETWORK

FIG. 5

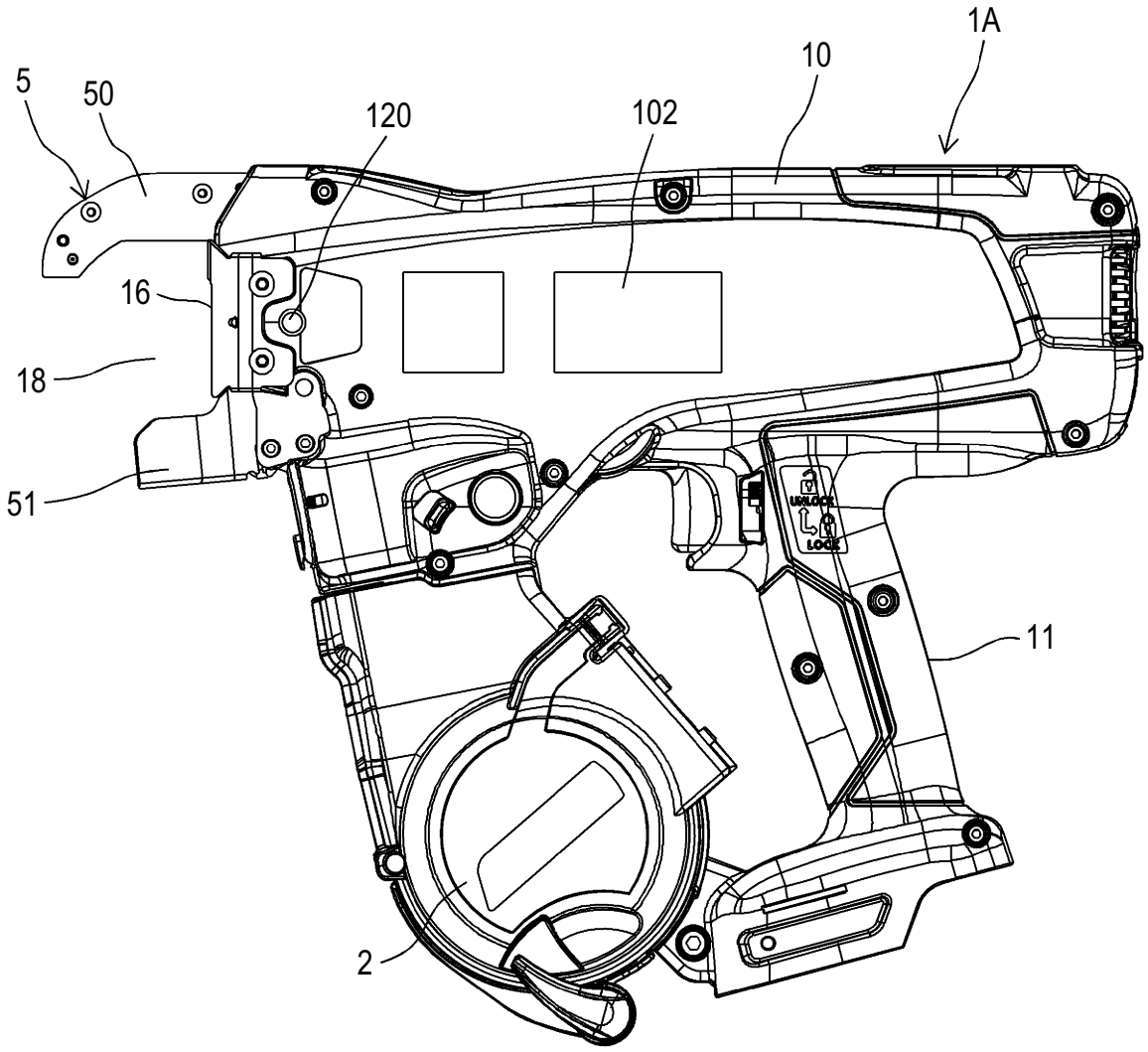


FIG. 6

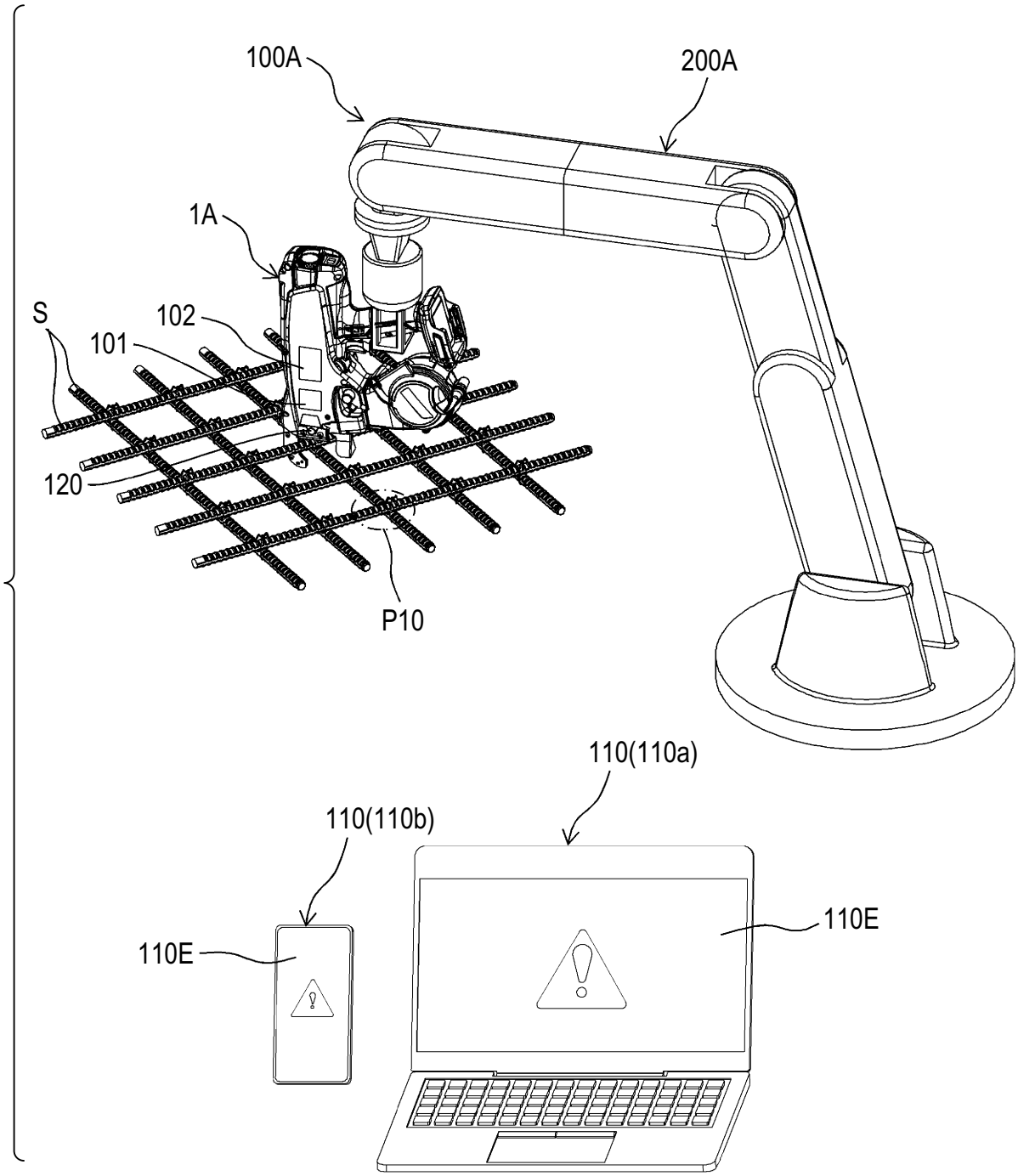


FIG. 7A

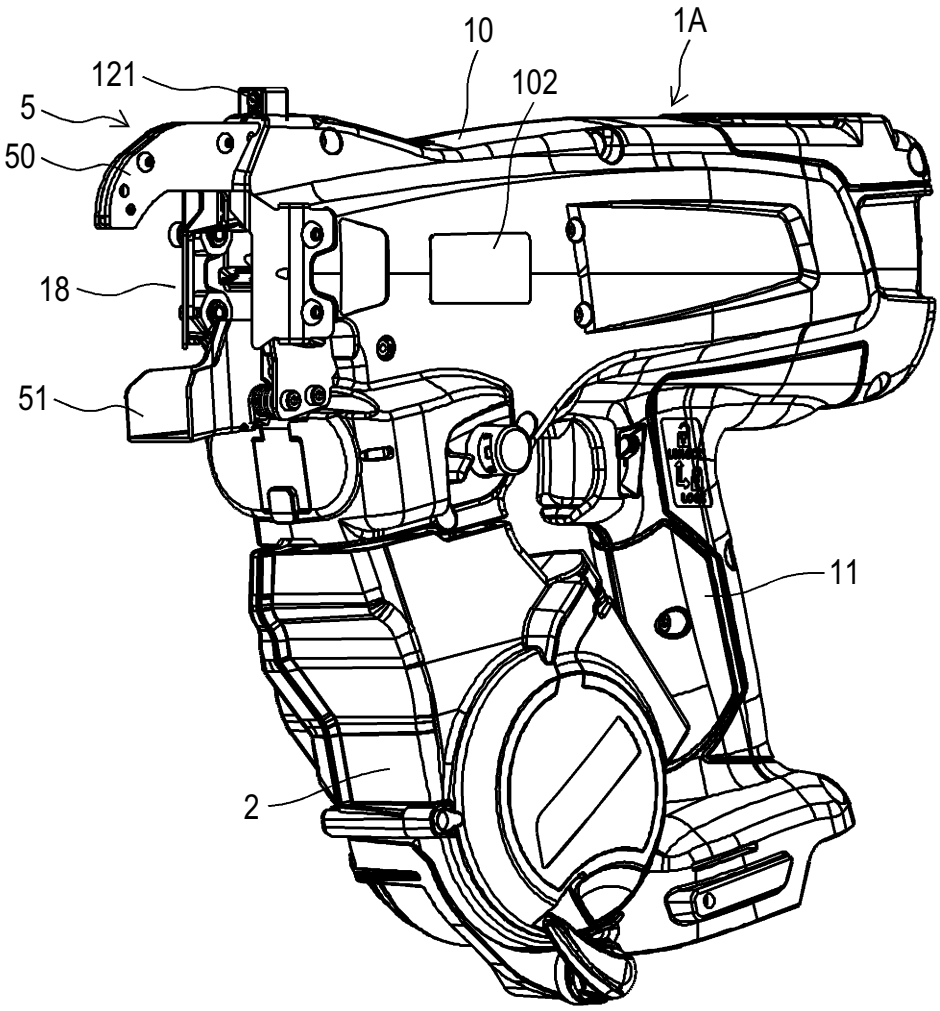


FIG. 7B

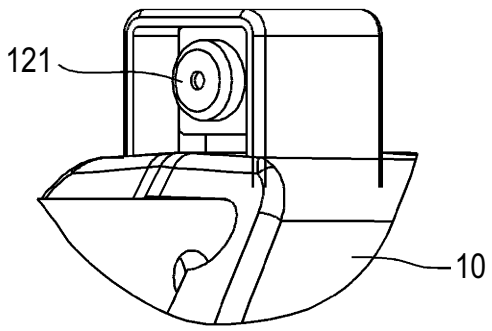


FIG. 8

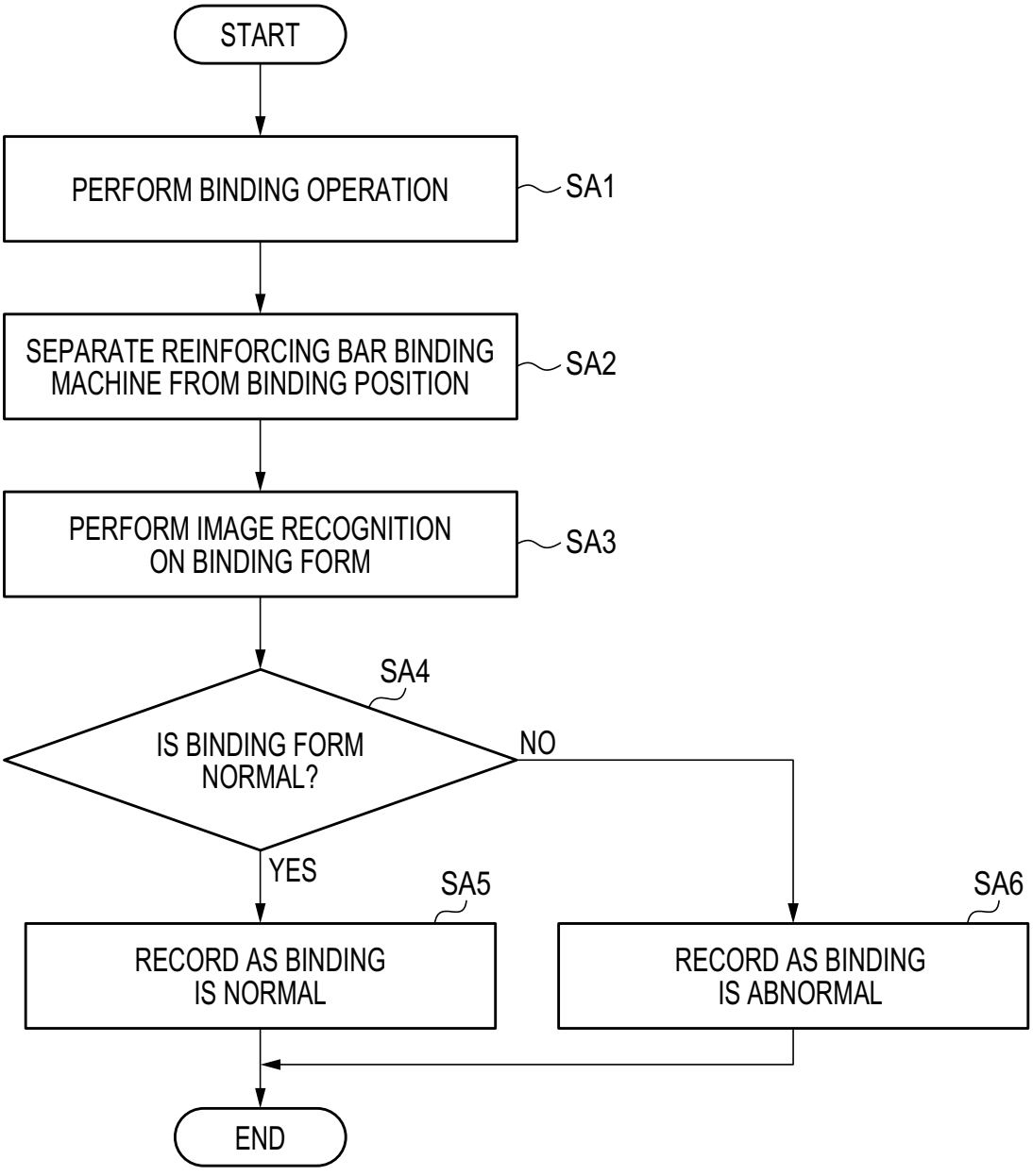

START
PERFORM BINDING OPERATION
SA1
SEPARATE REINFORCING BAR BINDING MACHINE FROM BINDING POSITION
SA2
PERFORM IMAGE RECOGNITION ON BINDING FORM
SA3
SA4
IS BINDING FORM NORMAL?
NO
YES
SA5
RECORD AS BINDING IS NORMAL
SA6
RECORD AS BINDING IS ABNORMAL
END

FIG. 9A

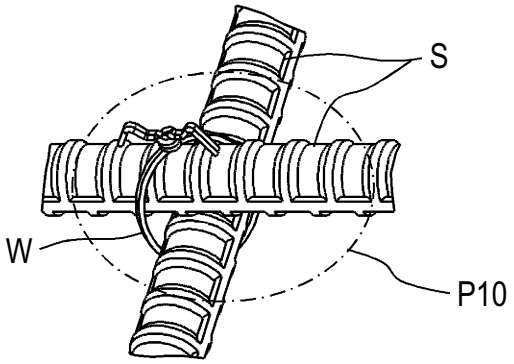


FIG. 9B

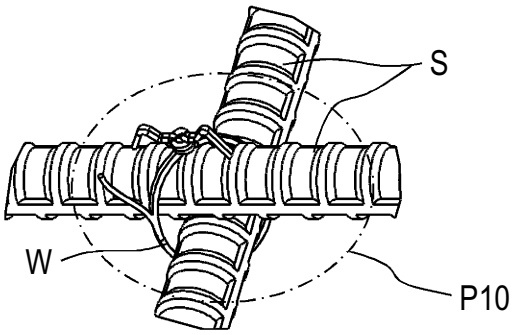


FIG. 9C

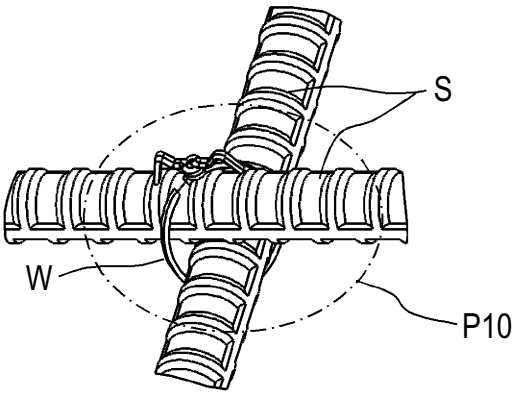


FIG. 10A

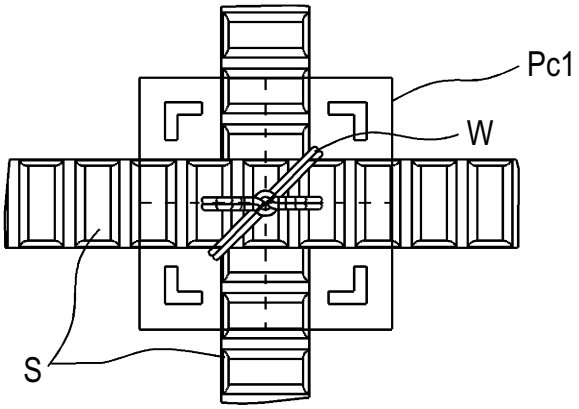


FIG. 10B

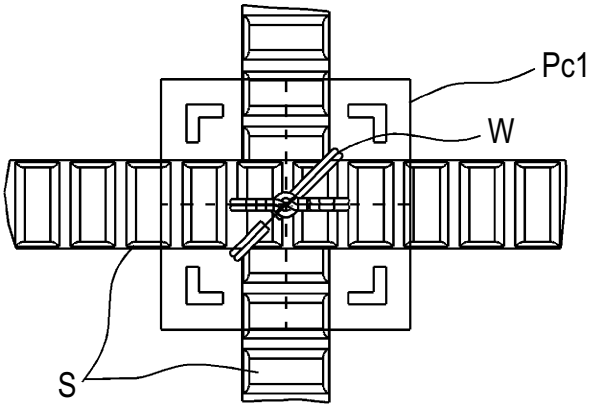


FIG. 11

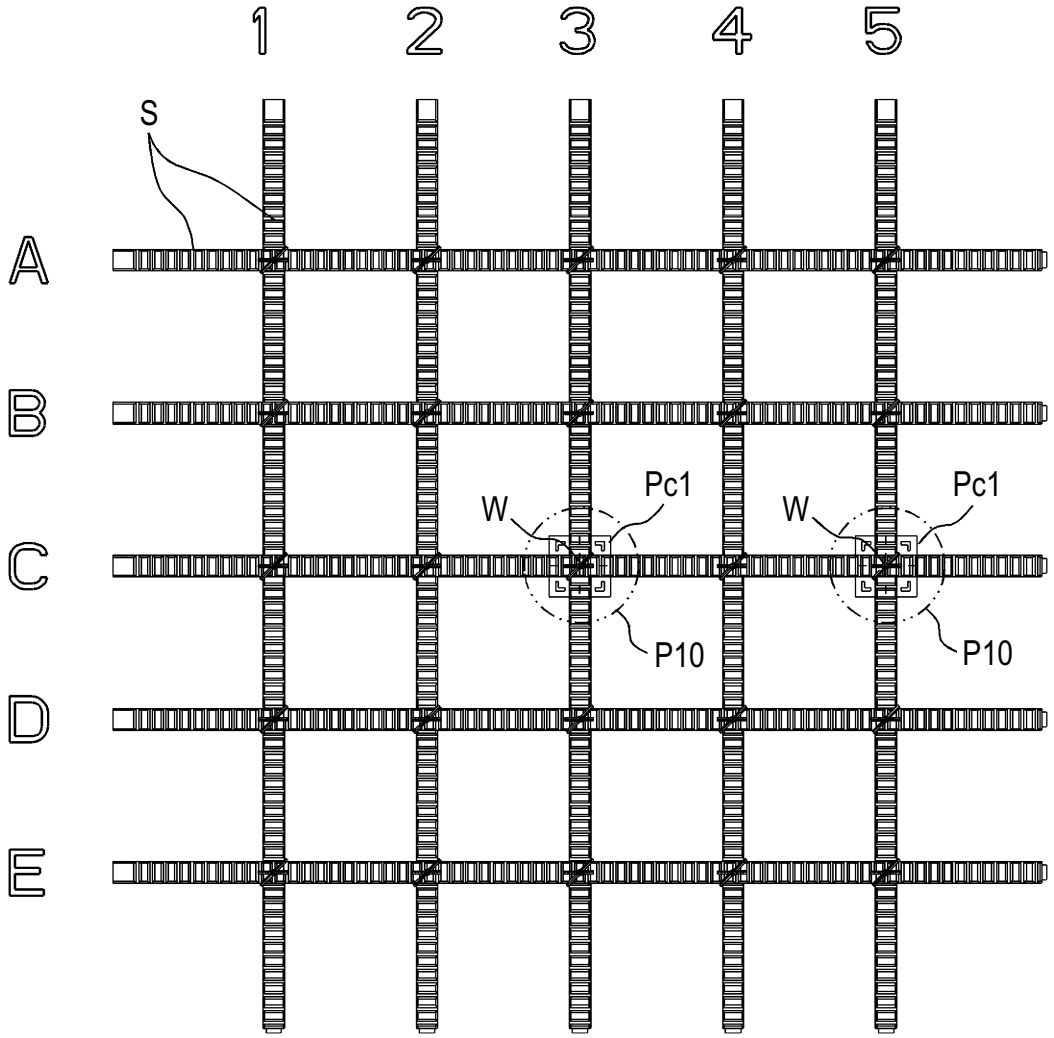


FIG. 12A

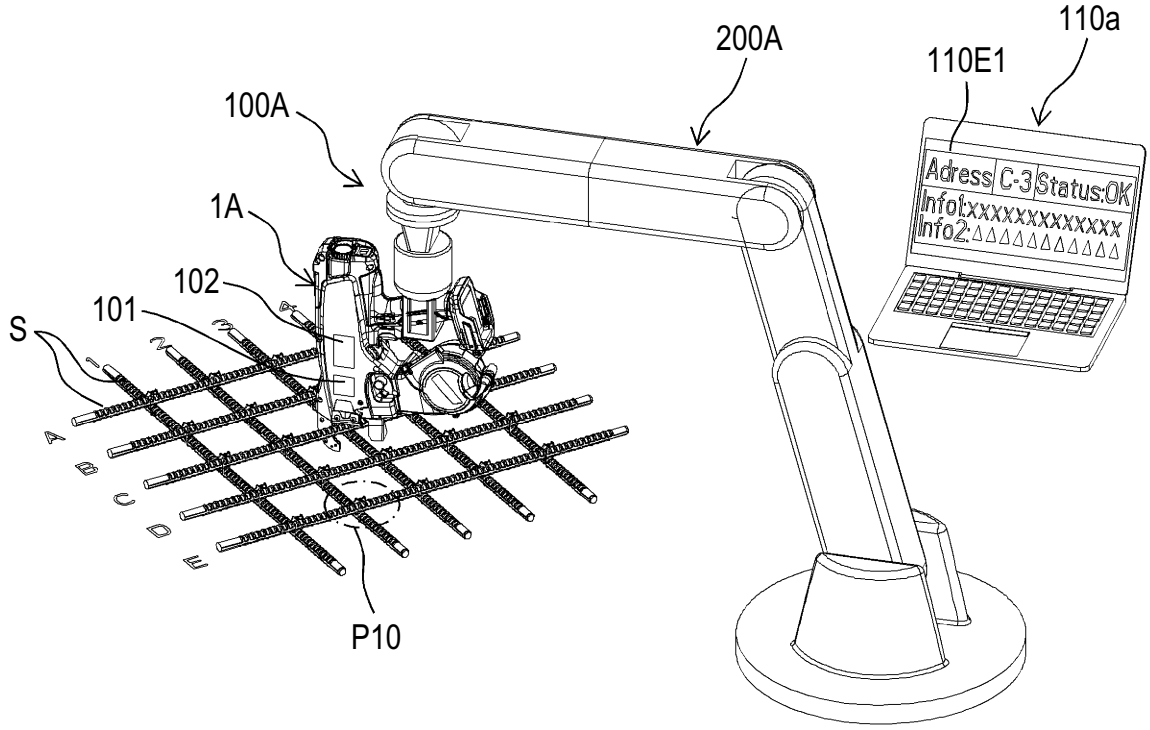


FIG. 12B

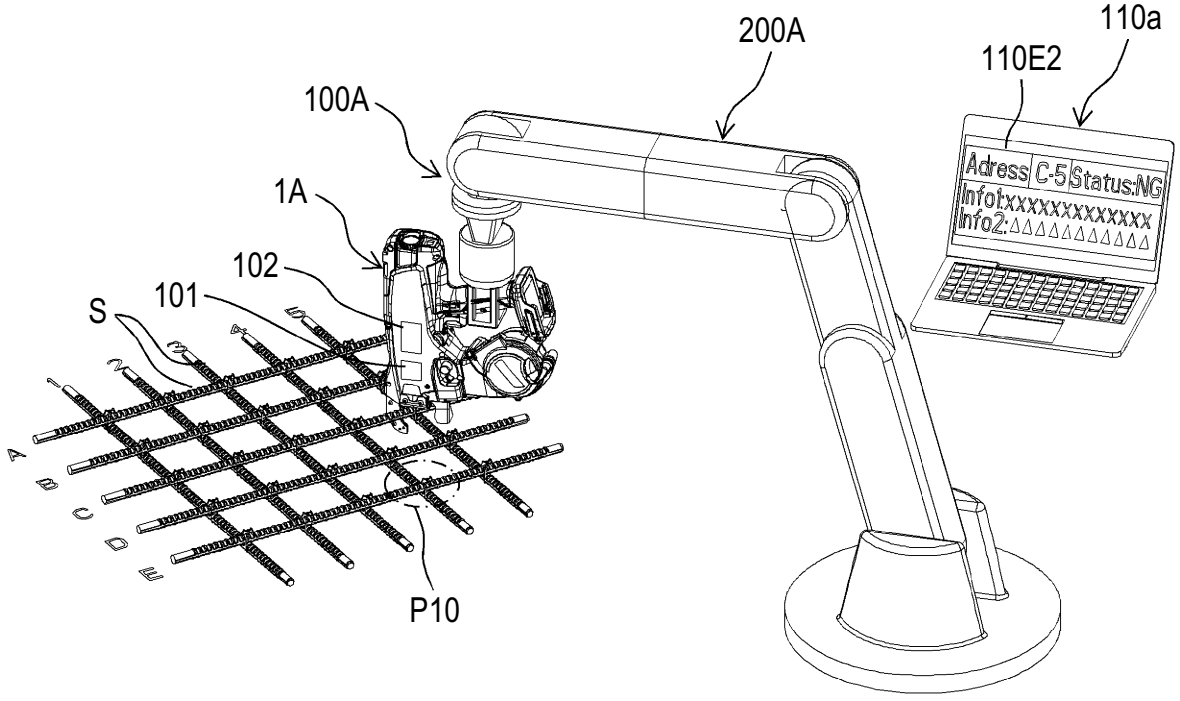


FIG. 13A

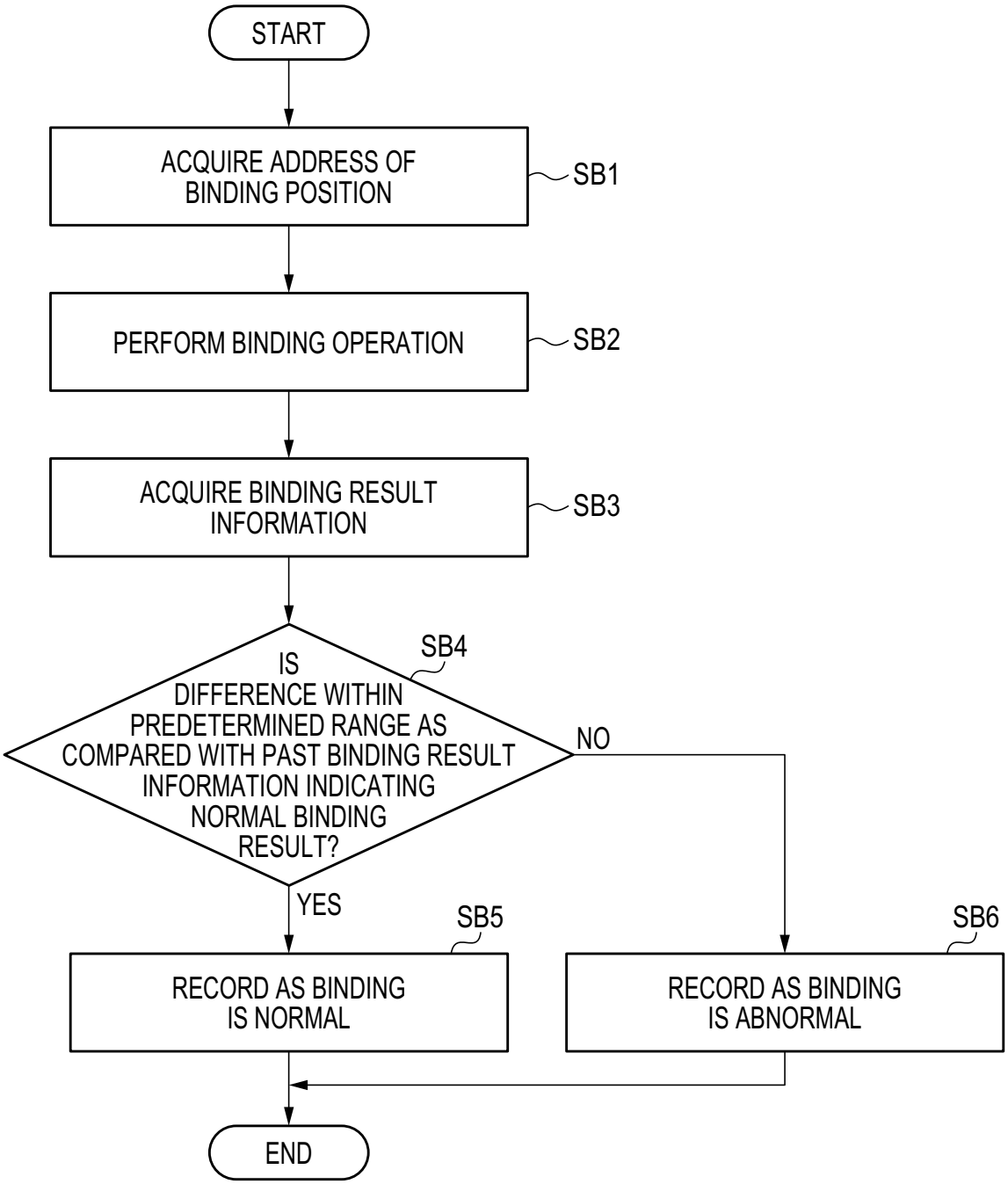

START
ACQUIRE ADDRESS OF BINDING POSITION
SB1
PERFORM BINDING OPERATION
SB2
ACQUIRE BINDING RESULT INFORMATION
SB3
SB4
IS DIFFERENCE WITHIN PREDETERMINED RANGE AS COMPARED WITH PAST BINDING RESULT INFORMATION INDICATING NORMAL BINDING RESULT?
NO
YES
SB5
RECORD AS BINDING IS NORMAL
SB6
RECORD AS BINDING IS ABNORMAL
END

FIG. 13B

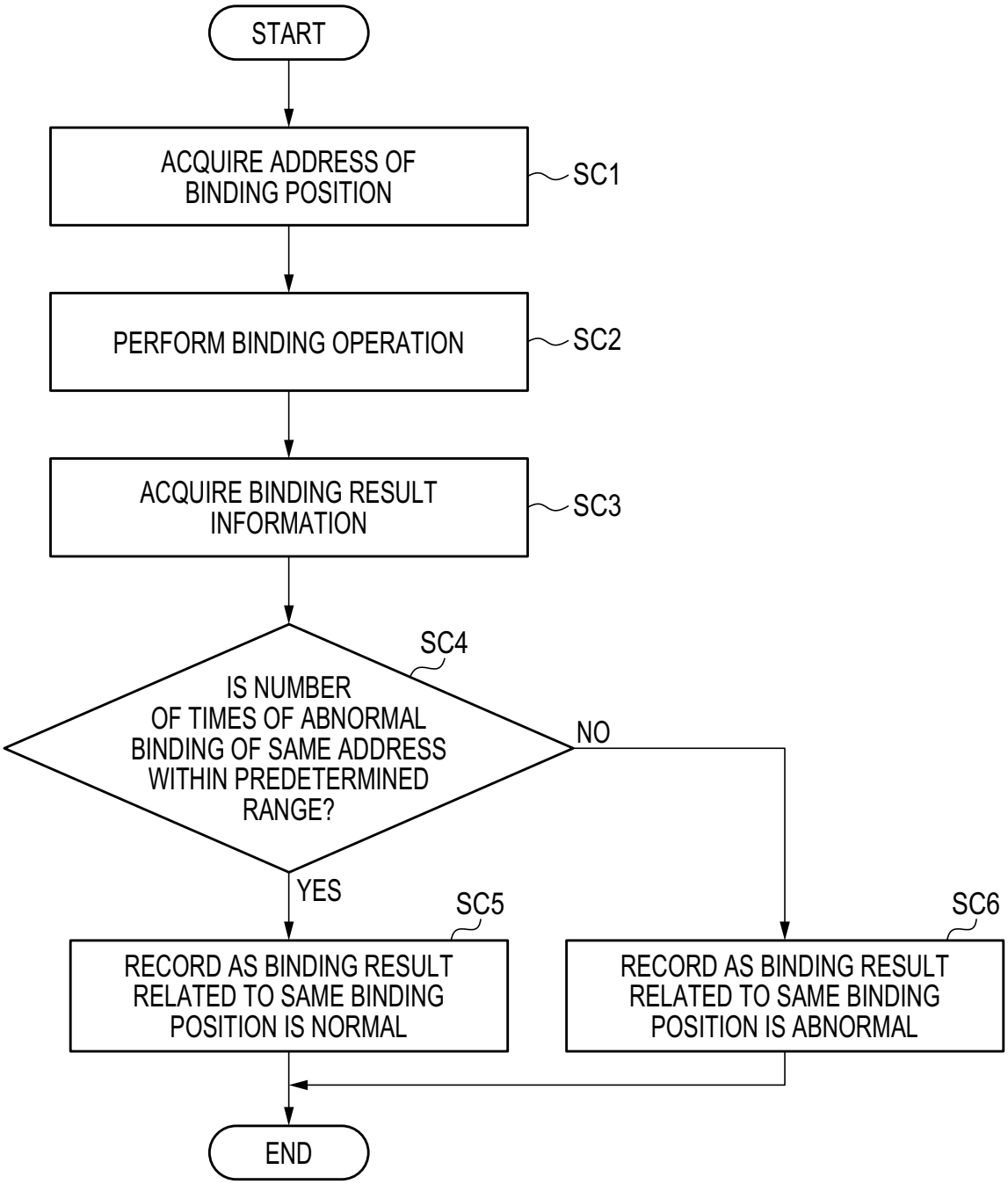

START
ACQUIRE ADDRESS OF BINDING POSITION
SC1
PERFORM BINDING OPERATION
SC2
ACQUIRE BINDING RESULT INFORMATION
SC3
SC4
IS NUMBER OF TIMES OF ABNORMAL BINDING OF SAME ADDRESS WITHIN PREDETERMINED RANGE?
NO
YES
SC5
RECORD AS BINDING RESULT RELATED TO SAME BINDING POSITION IS NORMAL
SC6
RECORD AS BINDING RESULT RELATED TO SAME BINDING POSITION IS ABNORMAL
END

FIG. 13C

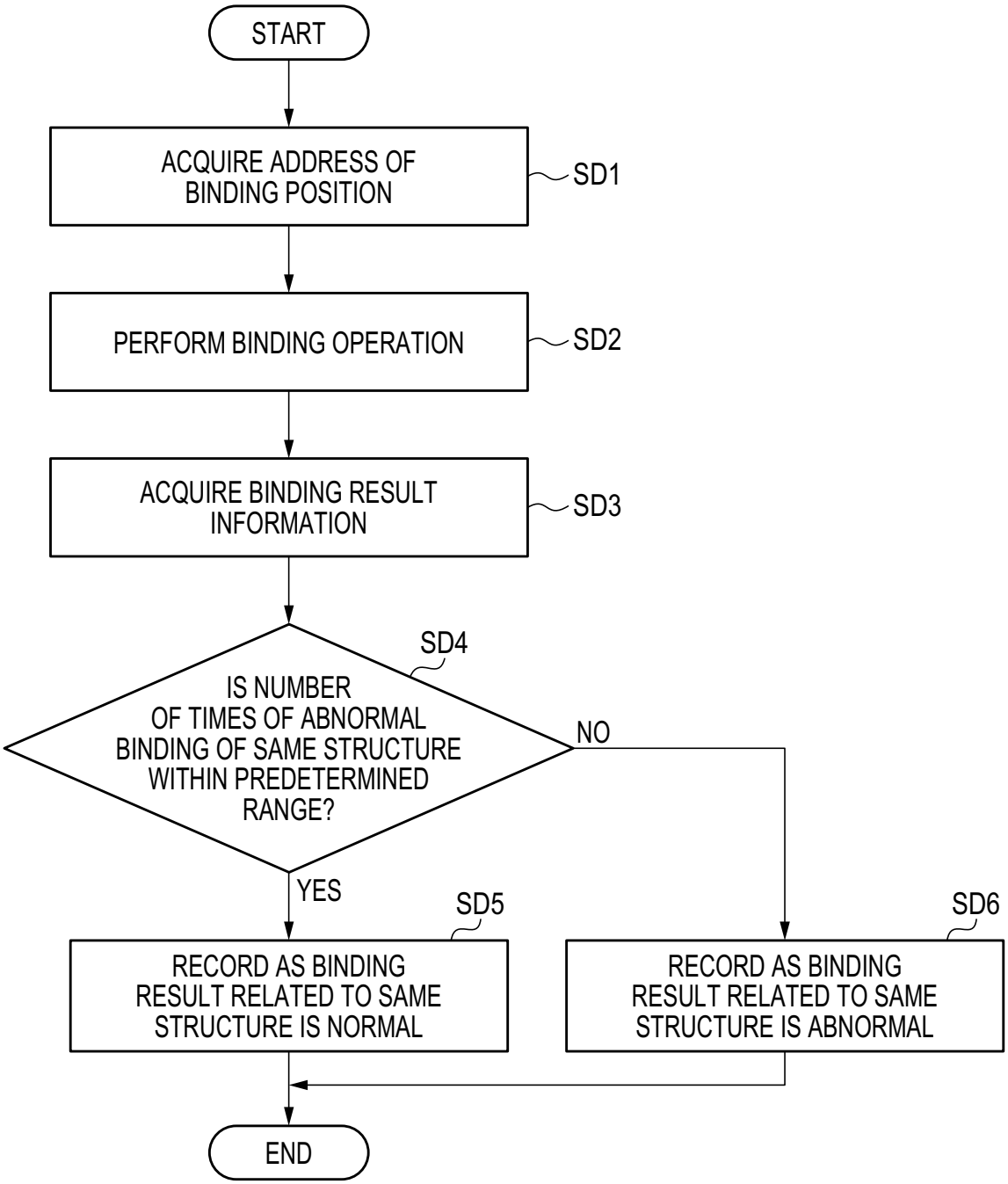

START
ACQUIRE ADDRESS OF BINDING POSITION
SD1
PERFORM BINDING OPERATION
SD2
ACQUIRE BINDING RESULT INFORMATION
SD3
SD4
IS NUMBER OF TIMES OF ABNORMAL BINDING OF SAME STRUCTURE WITHIN PREDETERMINED RANGE?
NO
YES
SD5
RECORD AS BINDING RESULT RELATED TO SAME STRUCTURE IS NORMAL
SD6
RECORD AS BINDING RESULT RELATED TO SAME STRUCTURE IS ABNORMAL
END

FIG. 13D

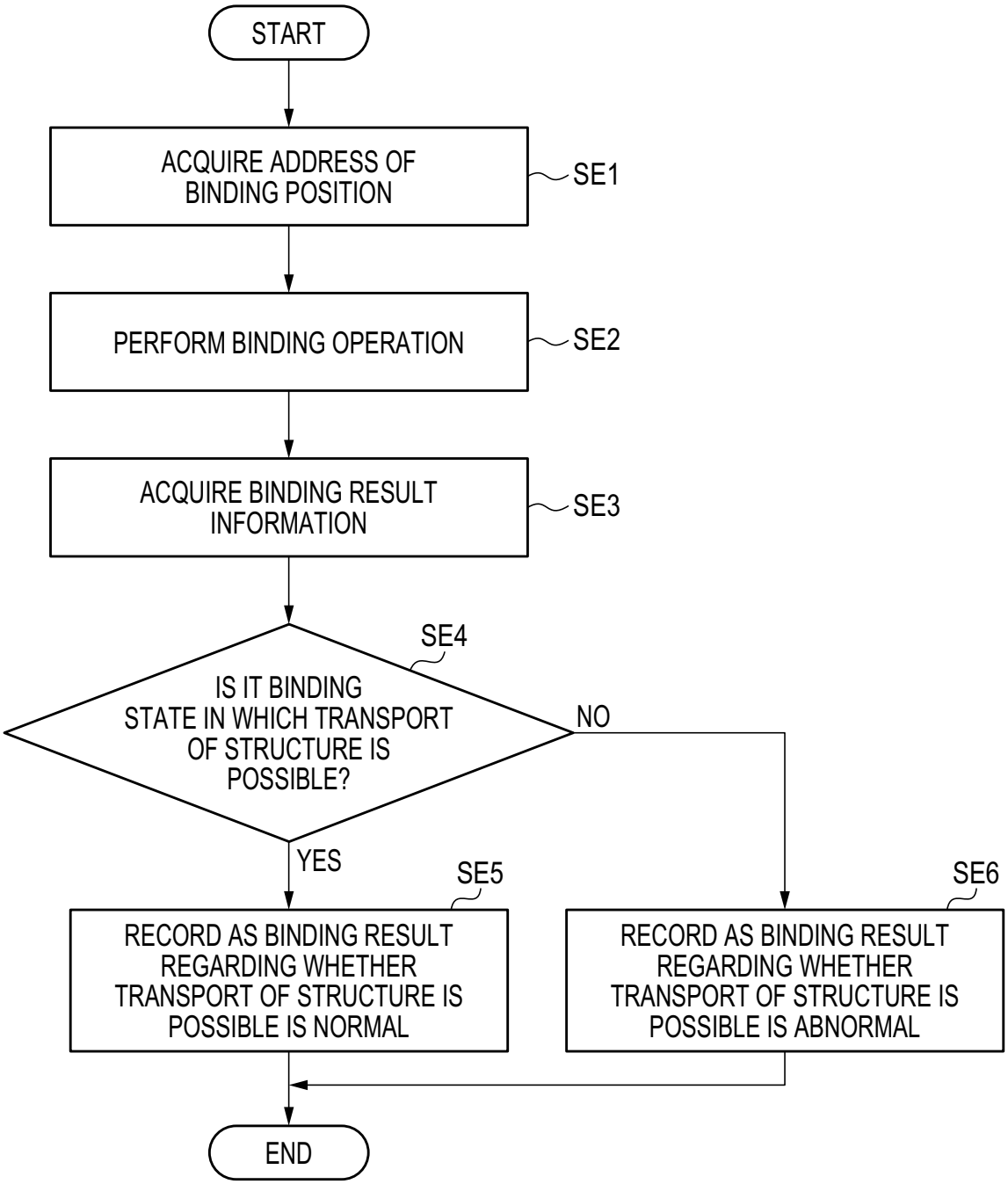

START
ACQUIRE ADDRESS OF BINDING POSITION
SE1
PERFORM BINDING OPERATION
SE2
ACQUIRE BINDING RESULT INFORMATION
SE3
SE4
IS IT BINDING STATE IN WHICH TRANSPORT OF STRUCTURE IS POSSIBLE?
NO
YES
SE5
RECORD AS BINDING RESULT REGARDING WHETHER TRANSPORT OF STRUCTURE IS POSSIBLE IS NORMAL
SE6
RECORD AS BINDING RESULT REGARDING WHETHER TRANSPORT OF STRUCTURE IS POSSIBLE IS ABNORMAL
END

FIG. 13E

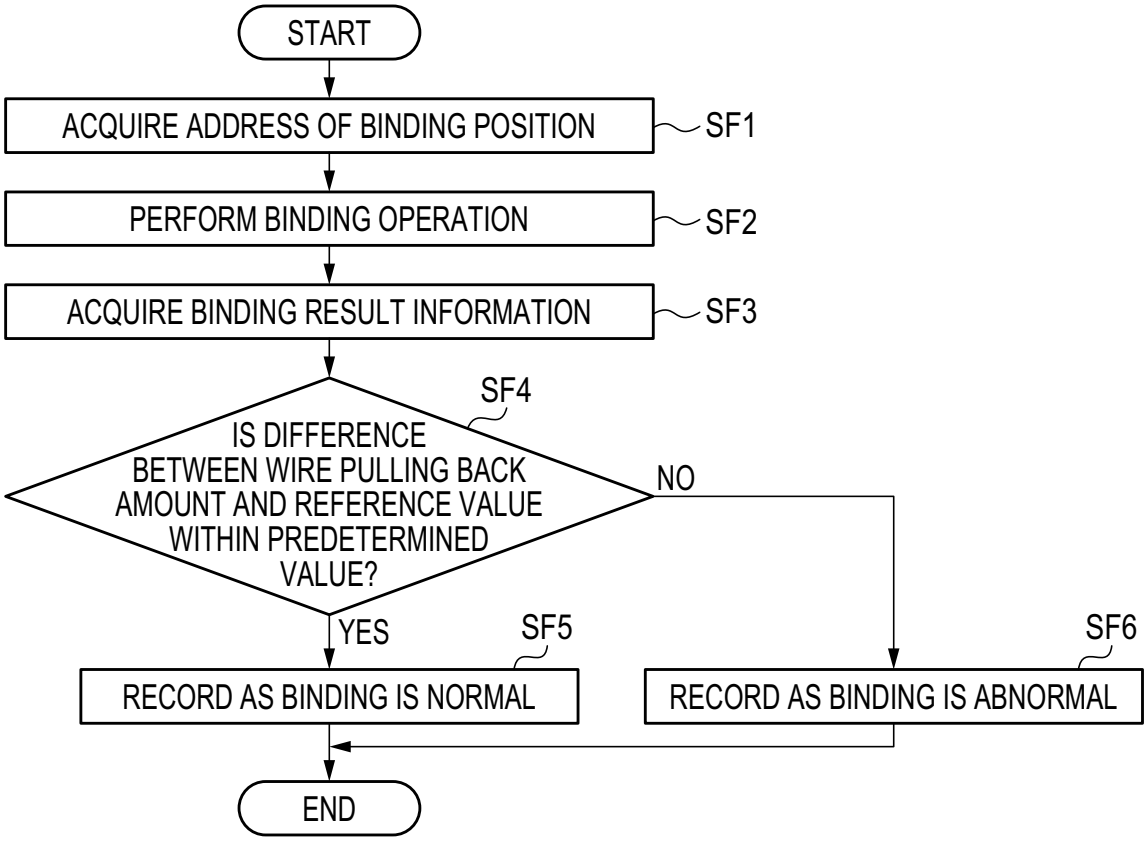


FIG. 14A

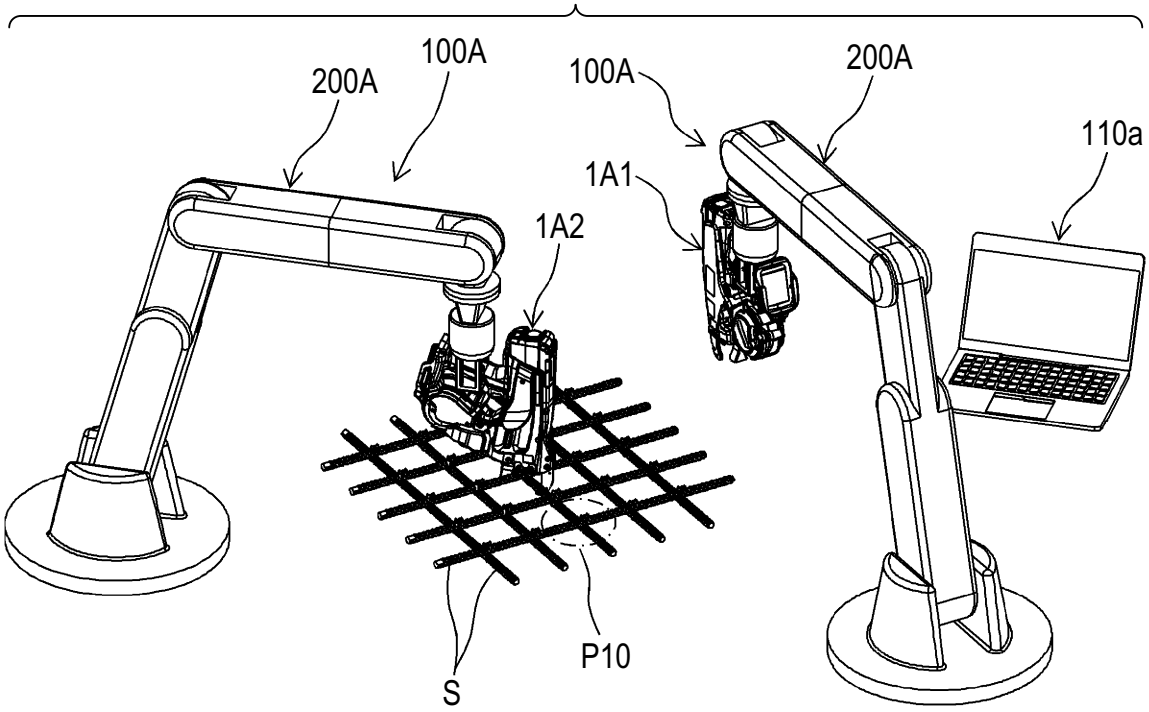


FIG. 14B

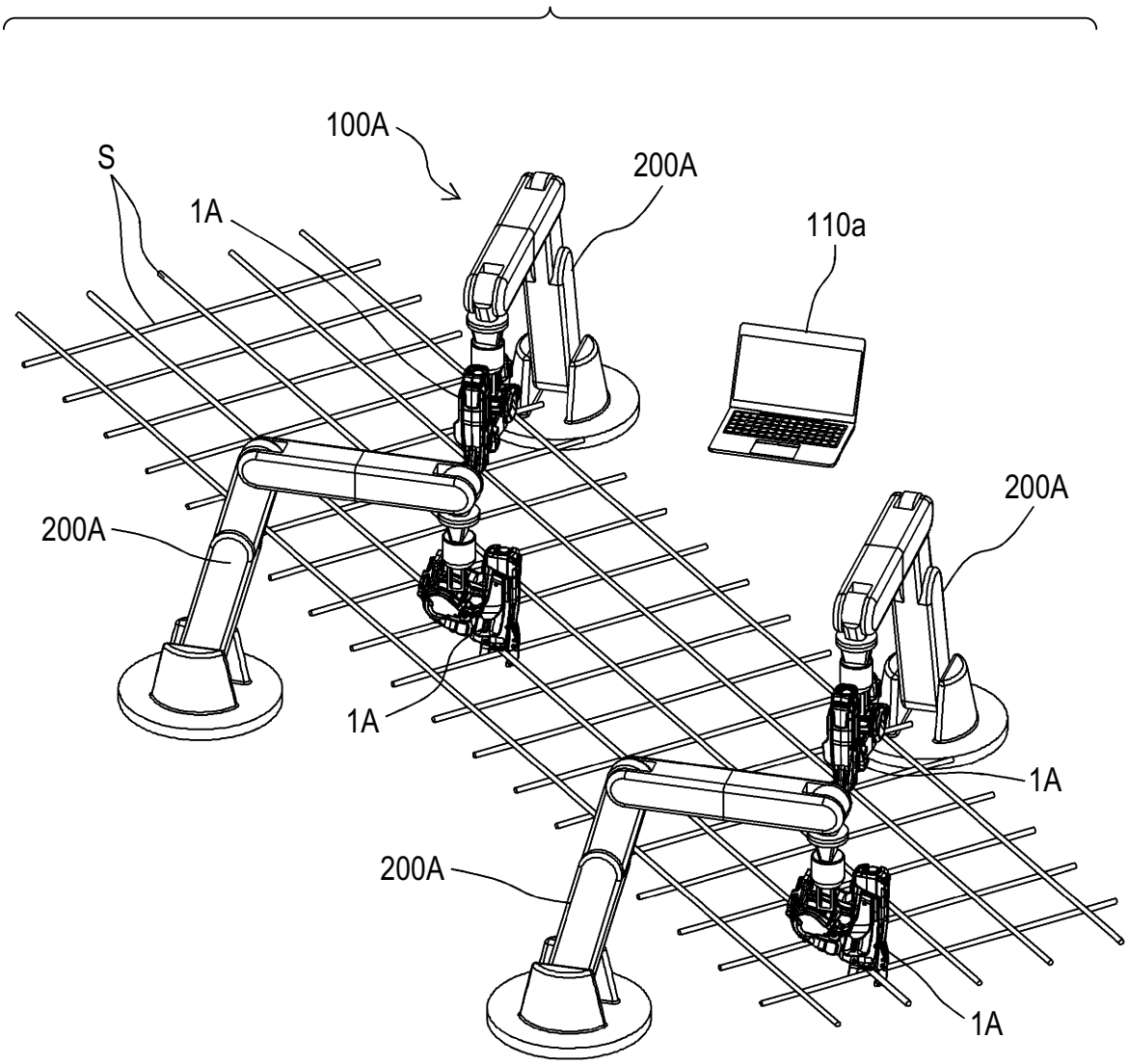


FIG. 14C

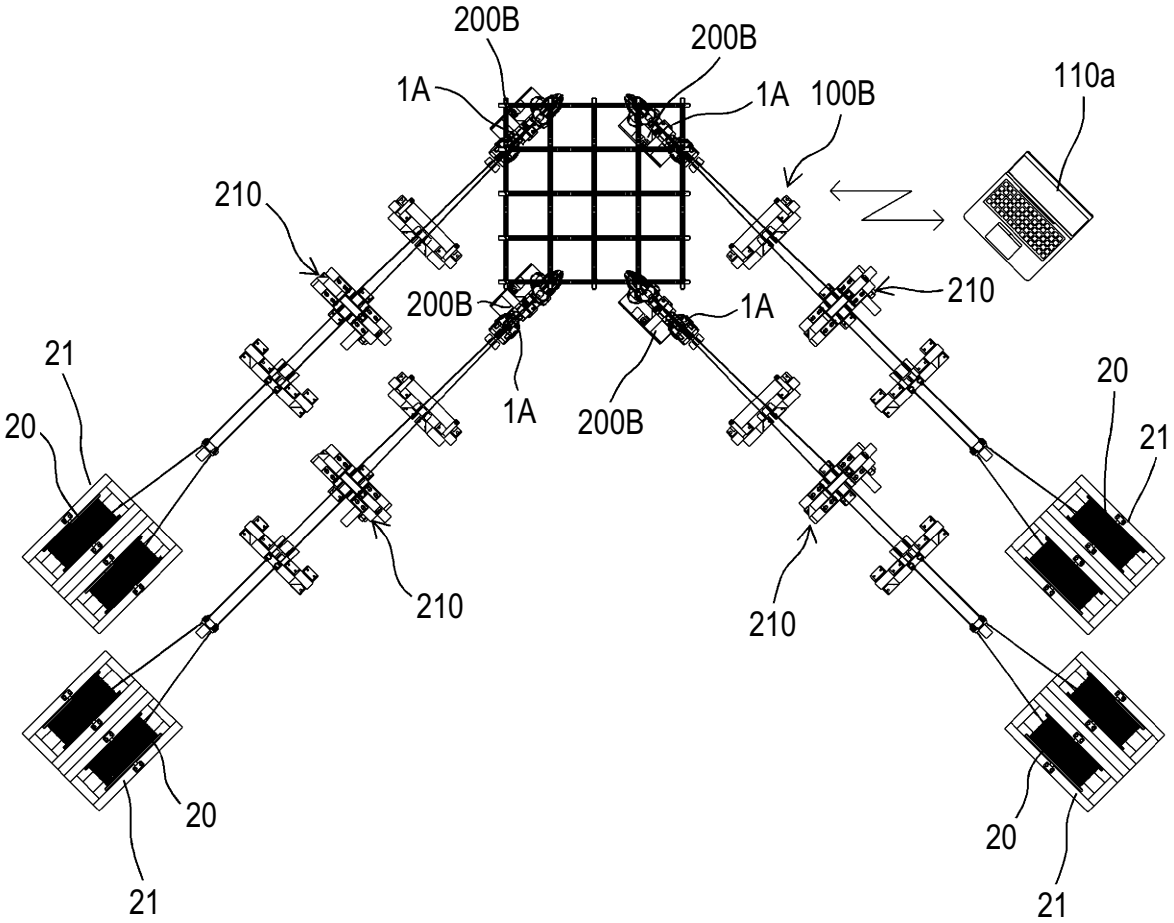

200B
200B
1A
1A
100B
110a
210
210
200B
1A
1A
200B
21
20
20
21
210
210
20
21
20
21

FIG. 15

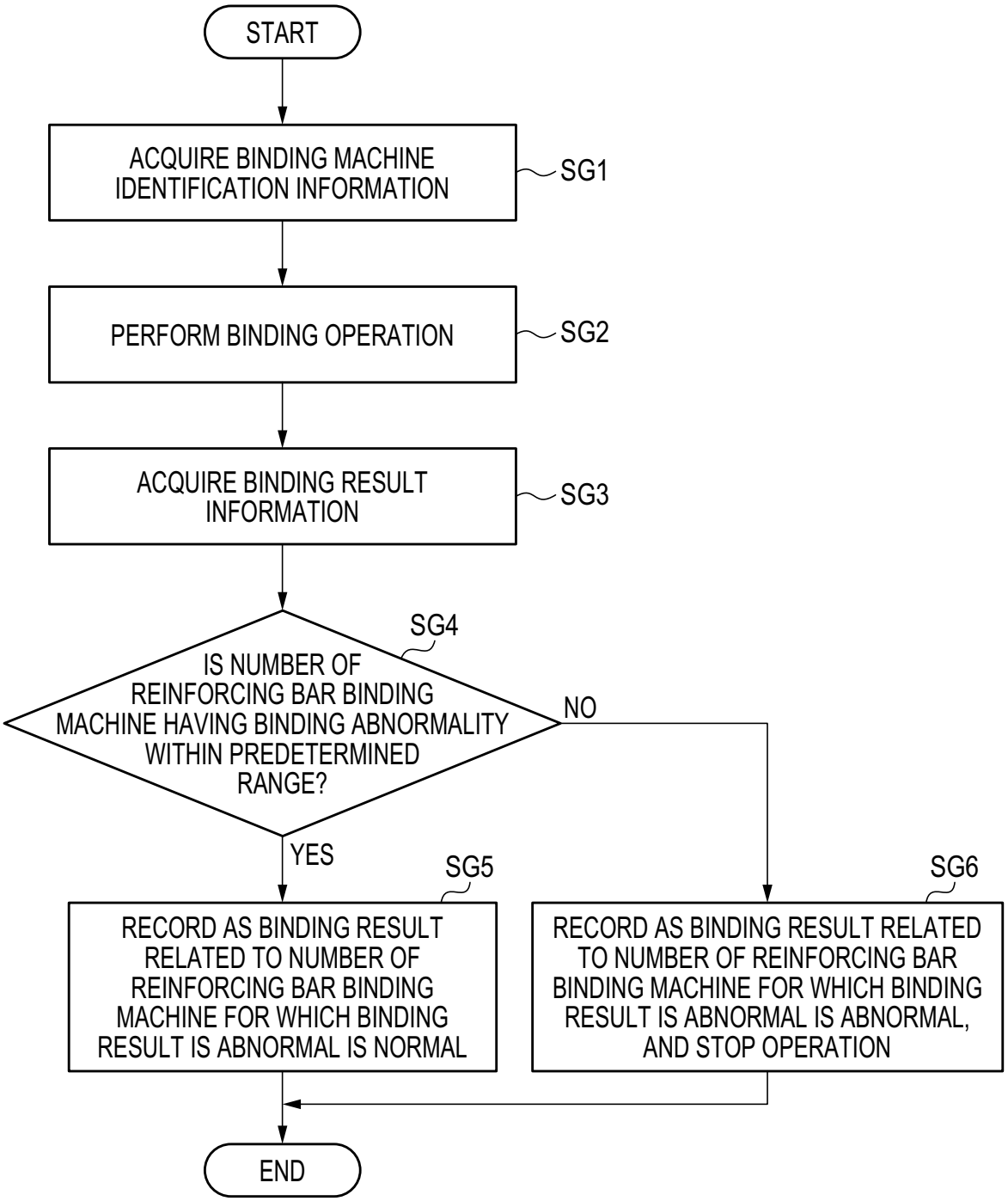

START
ACQUIRE BINDING MACHINE IDENTIFICATION INFORMATION
SG1
PERFORM BINDING OPERATION
SG2
ACQUIRE BINDING RESULT INFORMATION
SG3
SG4
IS NUMBER OF REINFORCING BAR BINDING MACHINE HAVING BINDING ABNORMALITY WITHIN PREDETERMINED RANGE?
NO
YES
SG5
RECORD AS BINDING RESULT RELATED TO NUMBER OF REINFORCING BAR BINDING MACHINE FOR WHICH BINDING RESULT IS ABNORMAL IS NORMAL
SG6
RECORD AS BINDING RESULT RELATED TO NUMBER OF REINFORCING BAR BINDING MACHINE FOR WHICH BINDING RESULT IS ABNORMAL IS ABNORMAL, AND STOP OPERATION
END

FIG. 16A

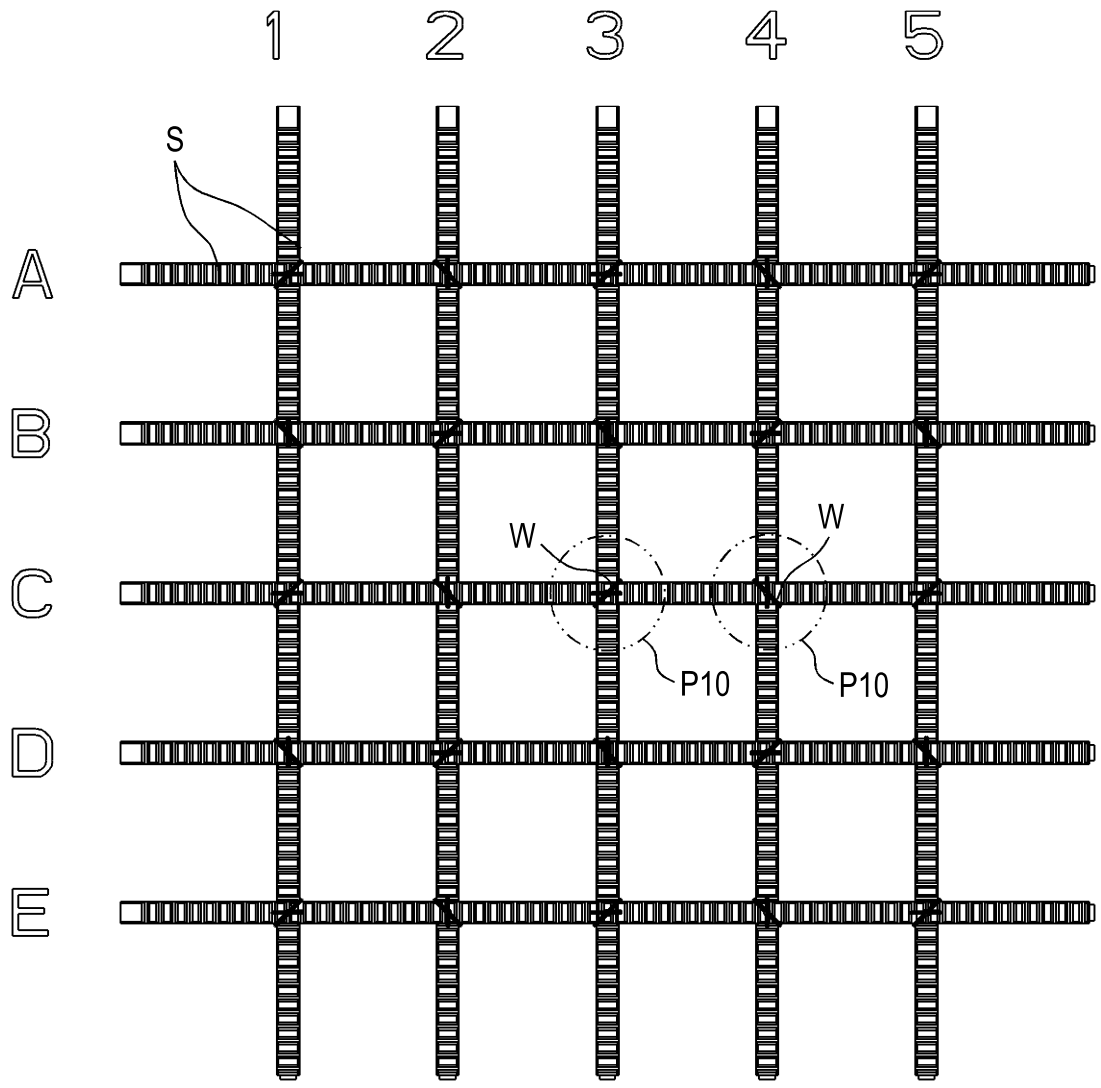


FIG. 16B

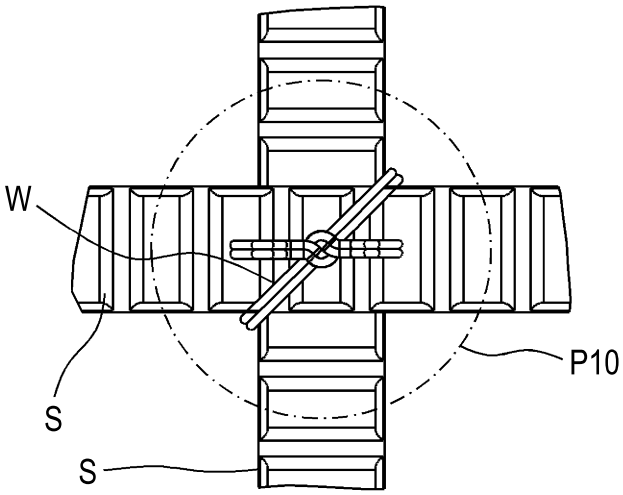


FIG. 16C

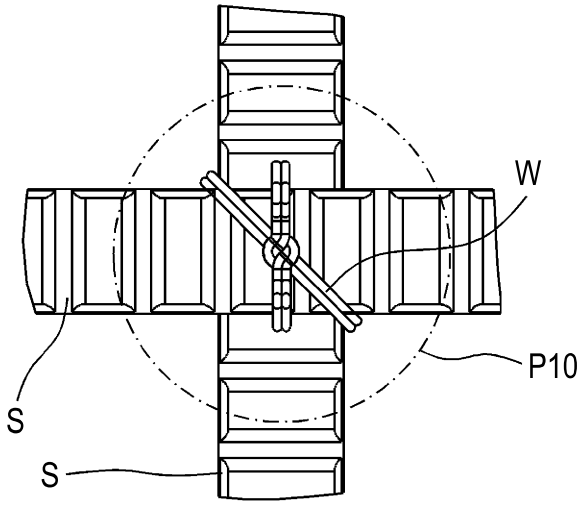


FIG. 17

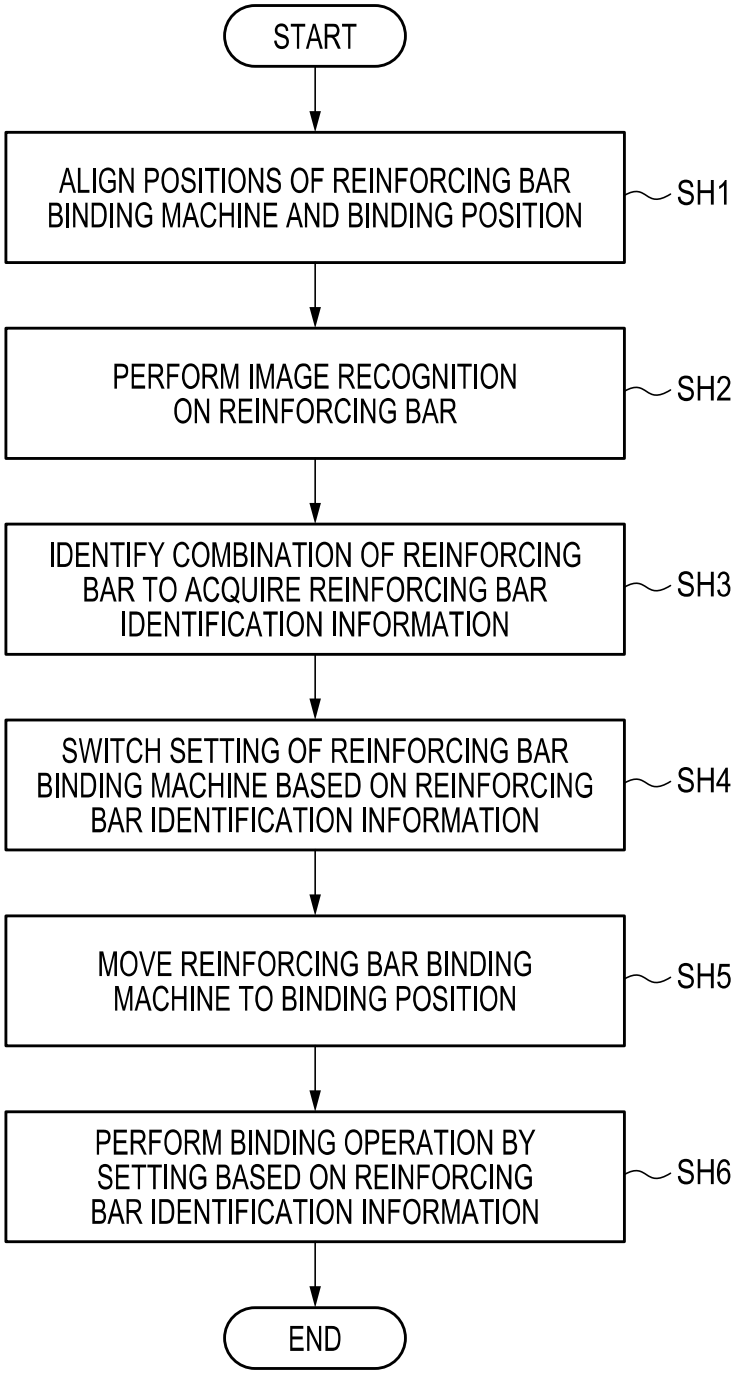

START
ALIGN POSITIONS OF REINFORCING BAR BINDING MACHINE AND BINDING POSITION
SH1
PERFORM IMAGE RECOGNITION ON REINFORCING BAR
SH2
IDENTIFY COMBINATION OF REINFORCING BAR TO ACQUIRE REINFORCING BAR IDENTIFICATION INFORMATION
SH3
SWITCH SETTING OF REINFORCING BAR BINDING MACHINE BASED ON REINFORCING BAR IDENTIFICATION INFORMATION
SH4
MOVE REINFORCING BAR BINDING MACHINE TO BINDING POSITION
SH5
PERFORM BINDING OPERATION BY SETTING BASED ON REINFORCING BAR IDENTIFICATION INFORMATION
SH6
END

FIG. 18A

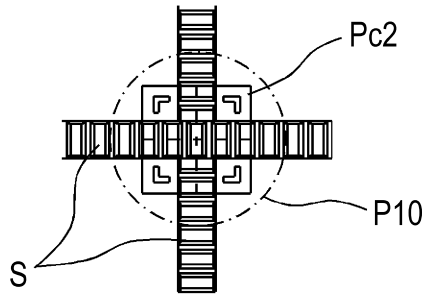


FIG. 18B

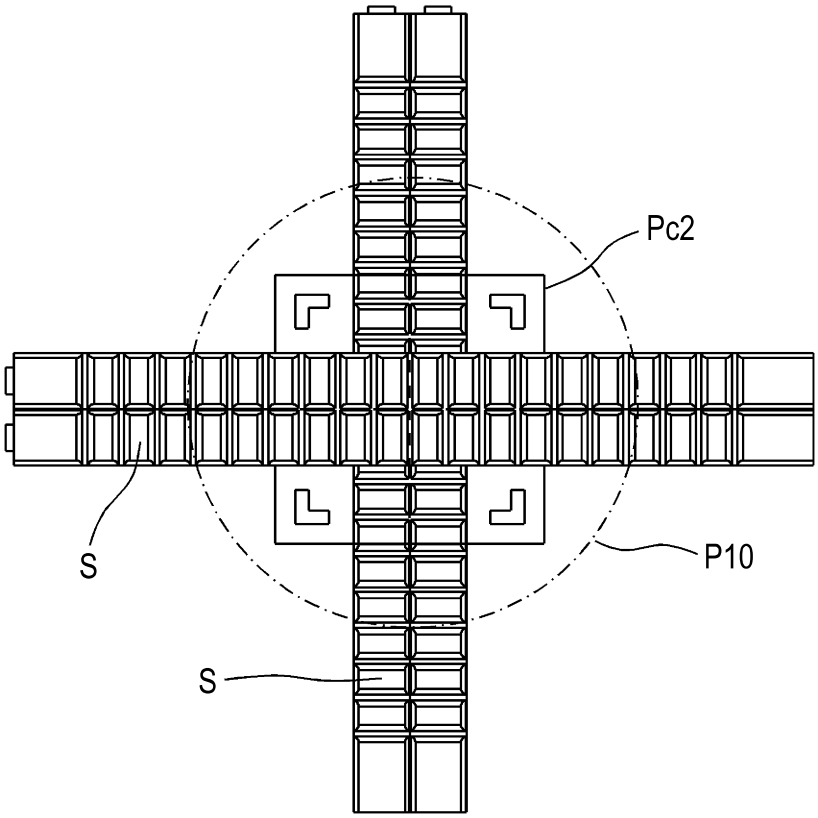


FIG. 19

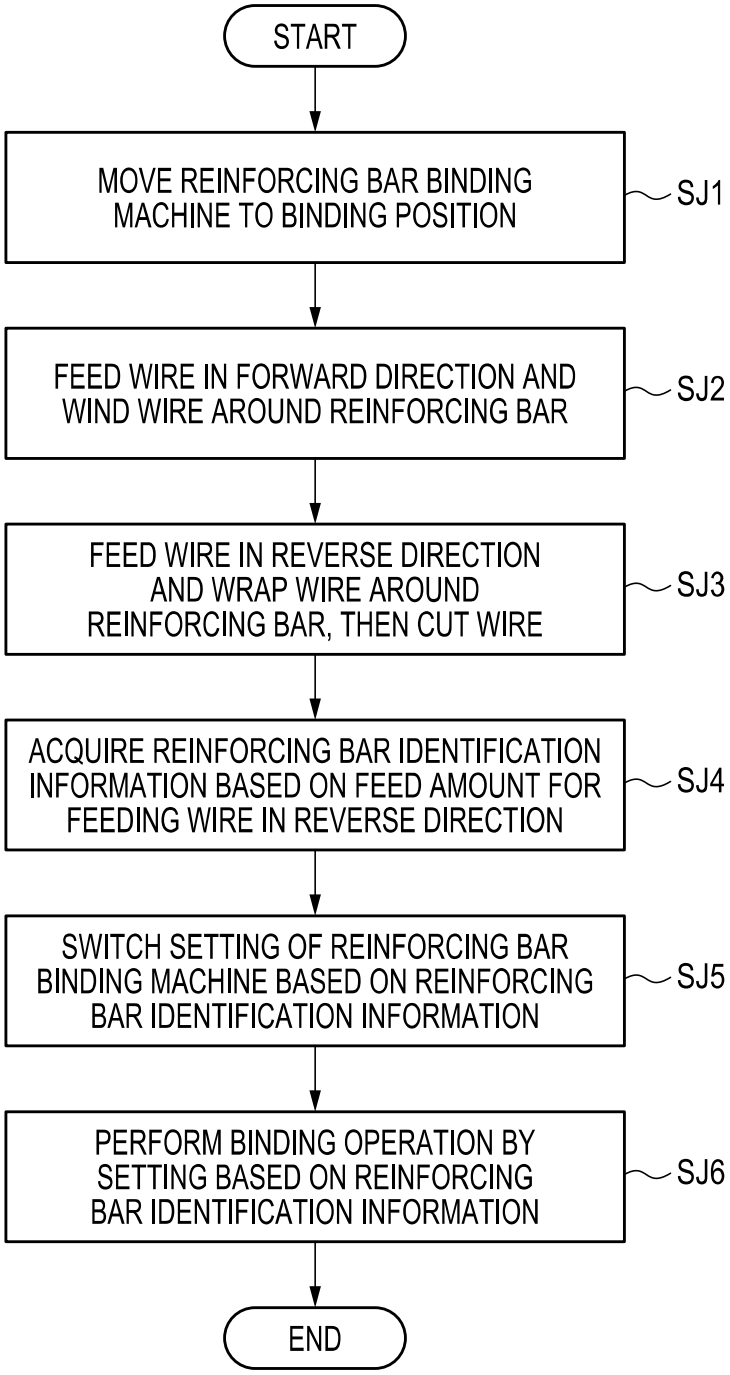

START
MOVE REINFORCING BAR BINDING MACHINE TO BINDING POSITION
SJ1
FEED WIRE IN FORWARD DIRECTION AND WIND WIRE AROUND REINFORCING BAR
SJ2
FEED WIRE IN REVERSE DIRECTION AND WRAP WIRE AROUND REINFORCING BAR, THEN CUT WIRE
SJ3
ACQUIRE REINFORCING BAR IDENTIFICATION INFORMATION BASED ON FEED AMOUNT FOR FEEDING WIRE IN REVERSE DIRECTION
SJ4
SWITCH SETTING OF REINFORCING BAR BINDING MACHINE BASED ON REINFORCING BAR IDENTIFICATION INFORMATION
SJ5
PERFORM BINDING OPERATION BY SETTING BASED ON REINFORCING BAR IDENTIFICATION INFORMATION
SJ6
END

FIG. 20

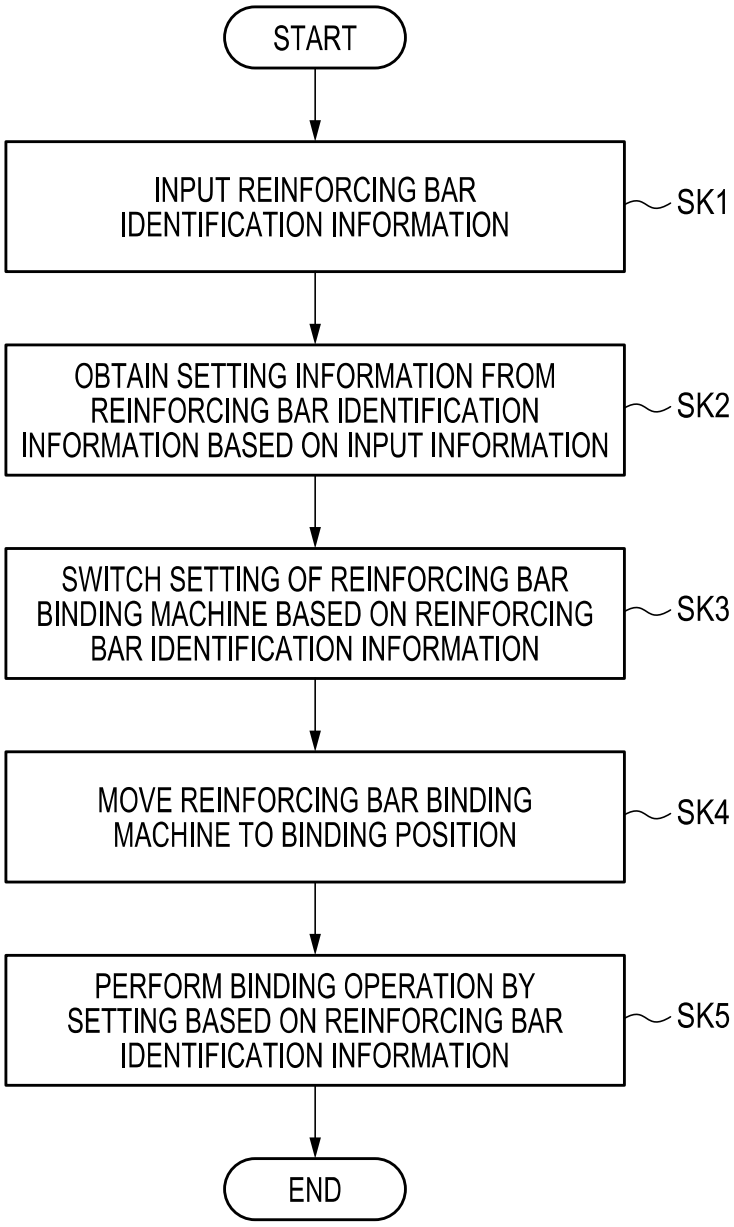

START
INPUT REINFORCING BAR IDENTIFICATION INFORMATION
SK1
OBTAIN SETTING INFORMATION FROM REINFORCING BAR IDENTIFICATION INFORMATION BASED ON INPUT INFORMATION
SK2
SWITCH SETTING OF REINFORCING BAR BINDING MACHINE BASED ON REINFORCING BAR IDENTIFICATION INFORMATION
SK3
MOVE REINFORCING BAR BINDING MACHINE TO BINDING POSITION
SK4
PERFORM BINDING OPERATION BY SETTING BASED ON REINFORCING BAR IDENTIFICATION INFORMATION
SK5
END

FIG. 21A

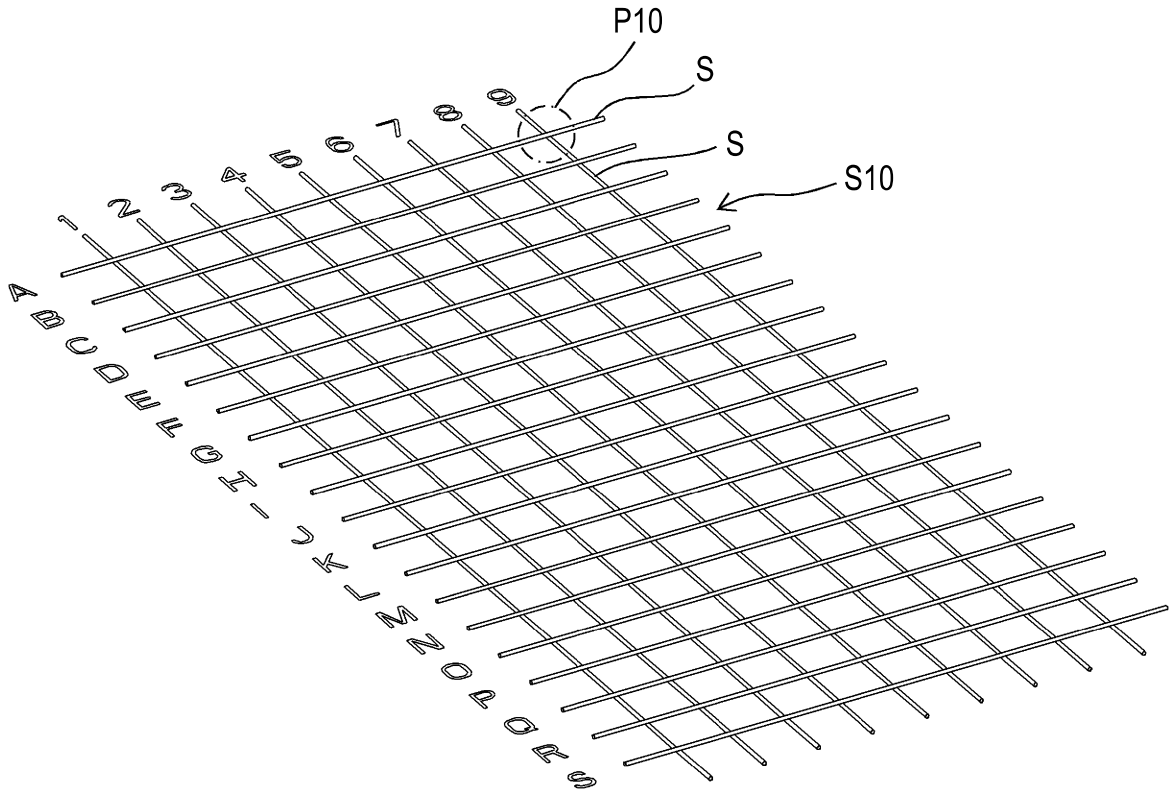


FIG. 21B

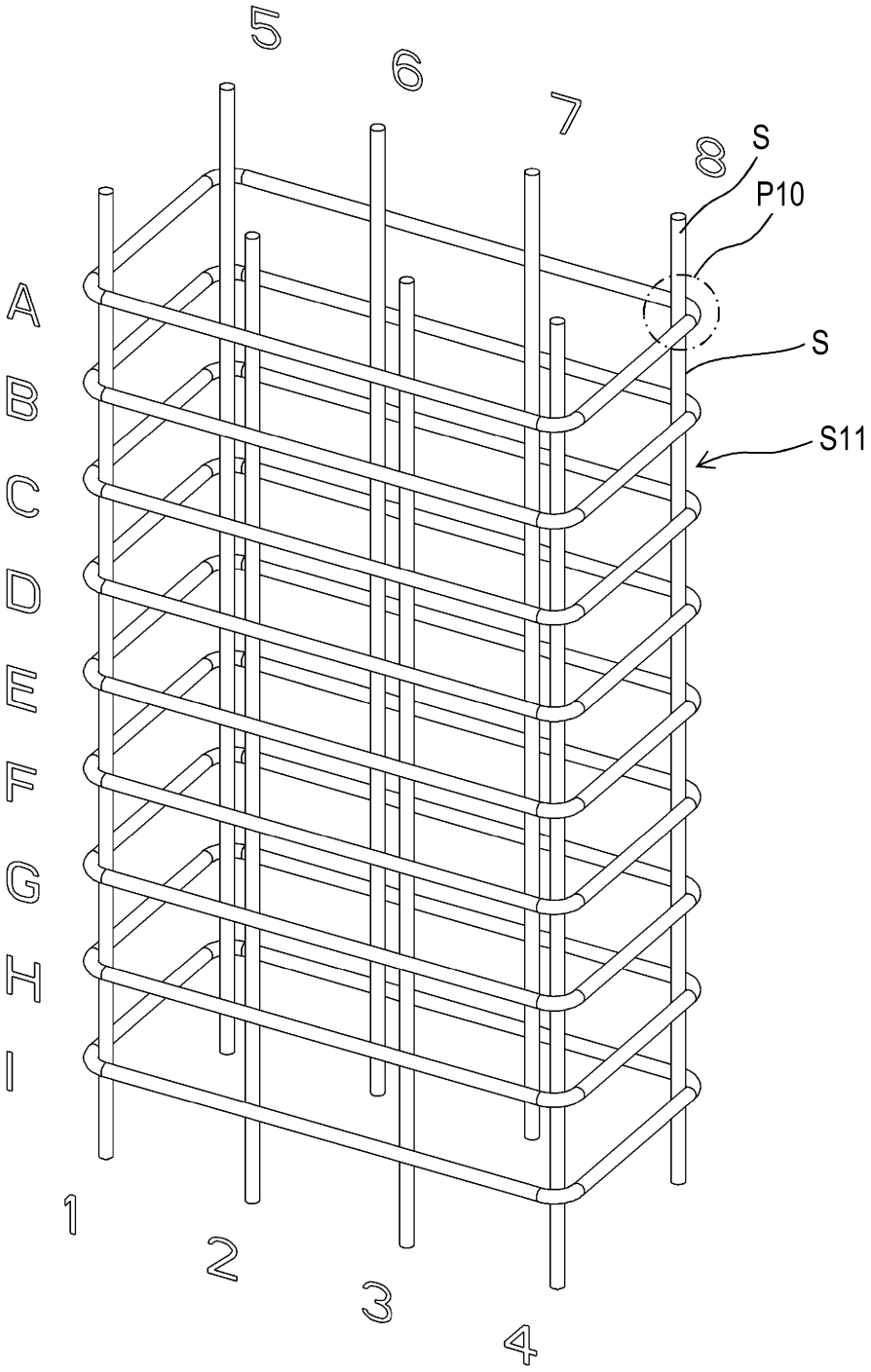


FIG. 22

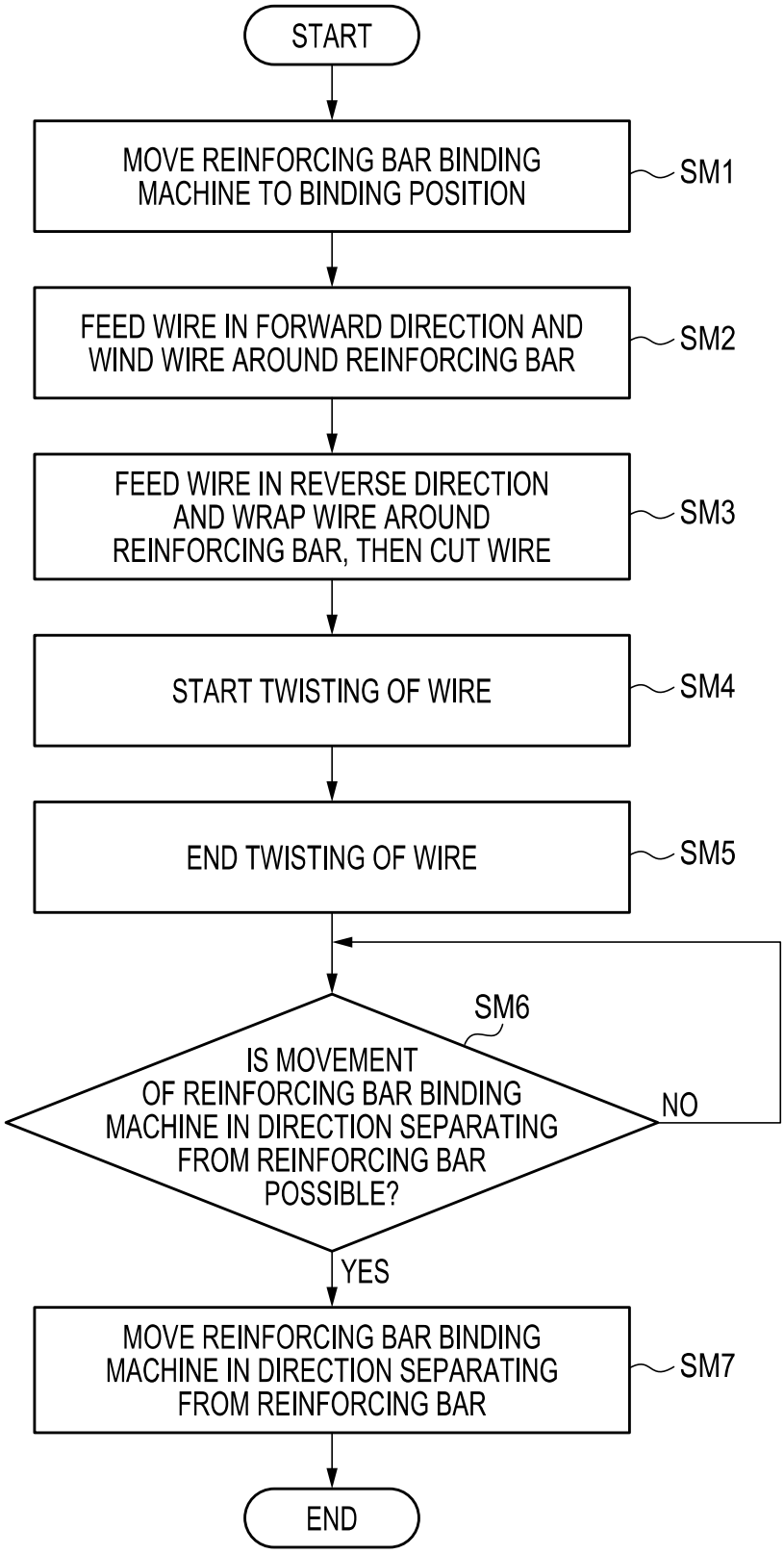

START
MOVE REINFORCING BAR BINDING MACHINE TO BINDING POSITION
SM1
FEED WIRE IN FORWARD DIRECTION AND WIND WIRE AROUND REINFORCING BAR
SM2
FEED WIRE IN REVERSE DIRECTION AND WRAP WIRE AROUND REINFORCING BAR, THEN CUT WIRE
SM3
START TWISTING OF WIRE
SM4
END TWISTING OF WIRE
SM5
SM6
IS MOVEMENT OF REINFORCING BAR BINDING MACHINE IN DIRECTION SEPARATING FROM REINFORCING BAR POSSIBLE?
NO
YES
MOVE REINFORCING BAR BINDING MACHINE IN DIRECTION SEPARATING FROM REINFORCING BAR
SM7
END

FIG. 23

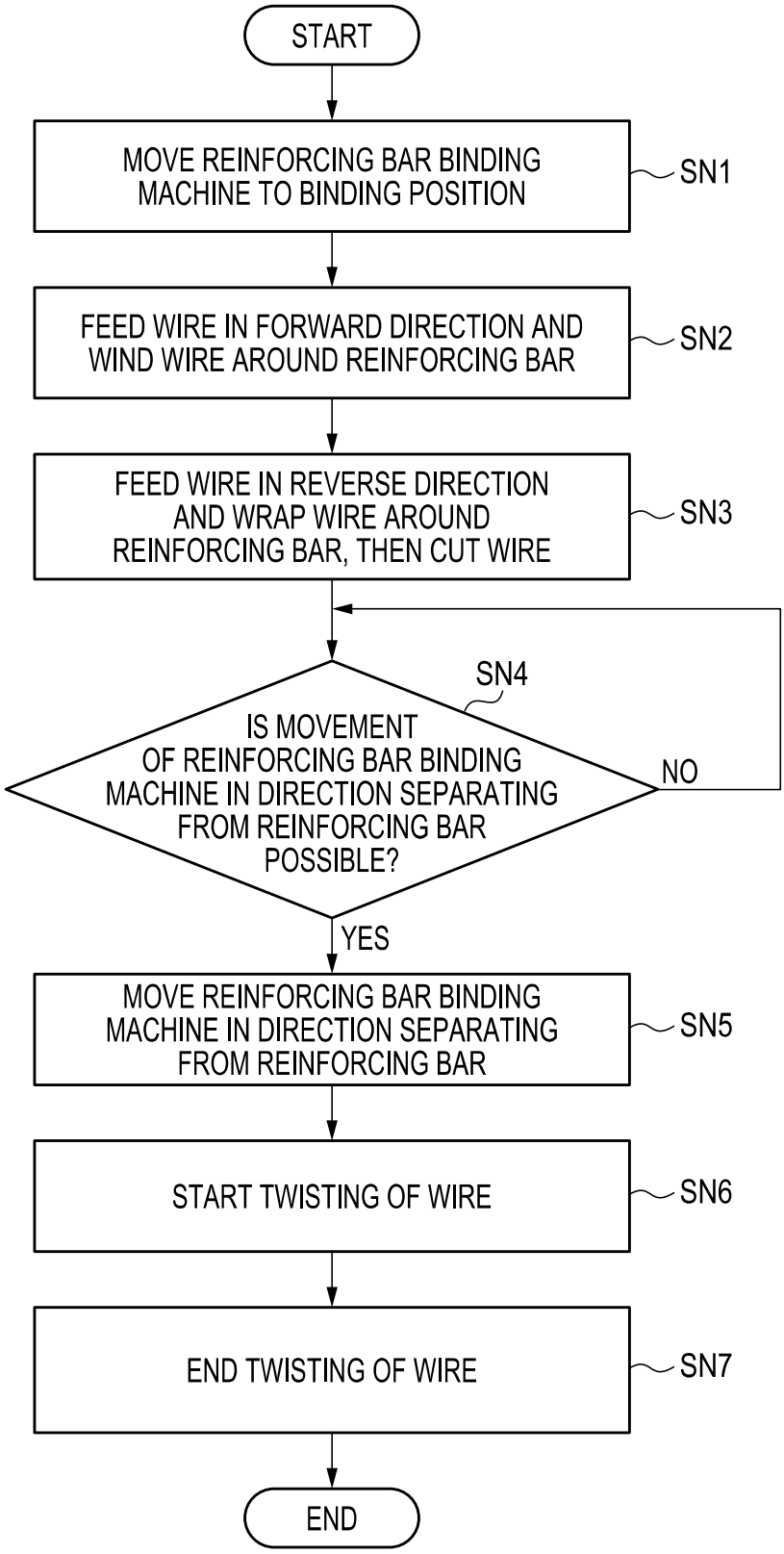

START
MOVE REINFORCING BAR BINDING MACHINE TO BINDING POSITION
SN1
FEED WIRE IN FORWARD DIRECTION AND WIND WIRE AROUND REINFORCING BAR
SN2
FEED WIRE IN REVERSE DIRECTION AND WRAP WIRE AROUND REINFORCING BAR, THEN CUT WIRE
SN3
SN4
IS MOVEMENT OF REINFORCING BAR BINDING MACHINE IN DIRECTION SEPARATING FROM REINFORCING BAR POSSIBLE?
NO
YES
MOVE REINFORCING BAR BINDING MACHINE IN DIRECTION SEPARATING FROM REINFORCING BAR
SN5
START TWISTING OF WIRE
SN6
END TWISTING OF WIRE
SN7
END

FIG. 24A

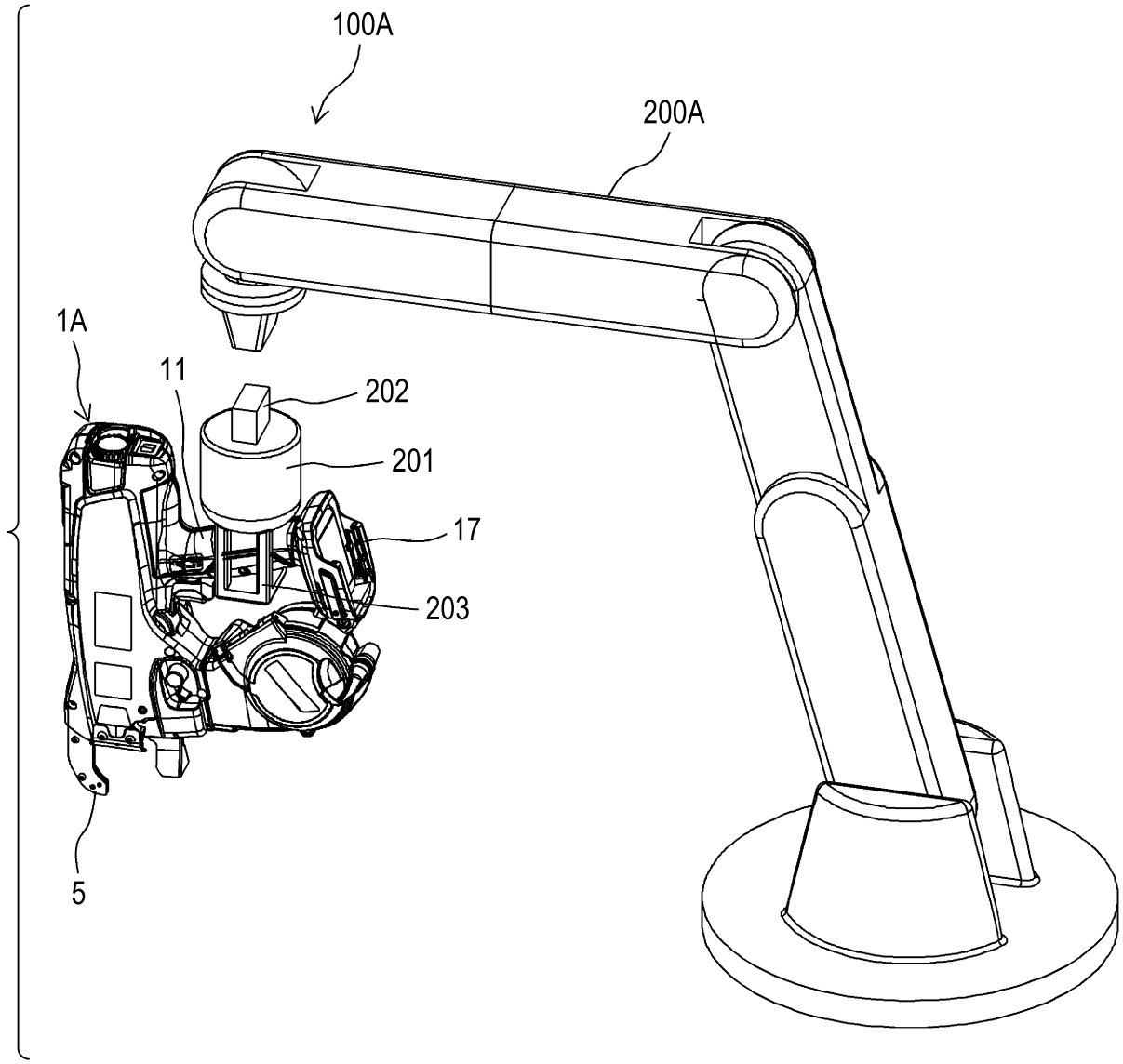


FIG. 24B

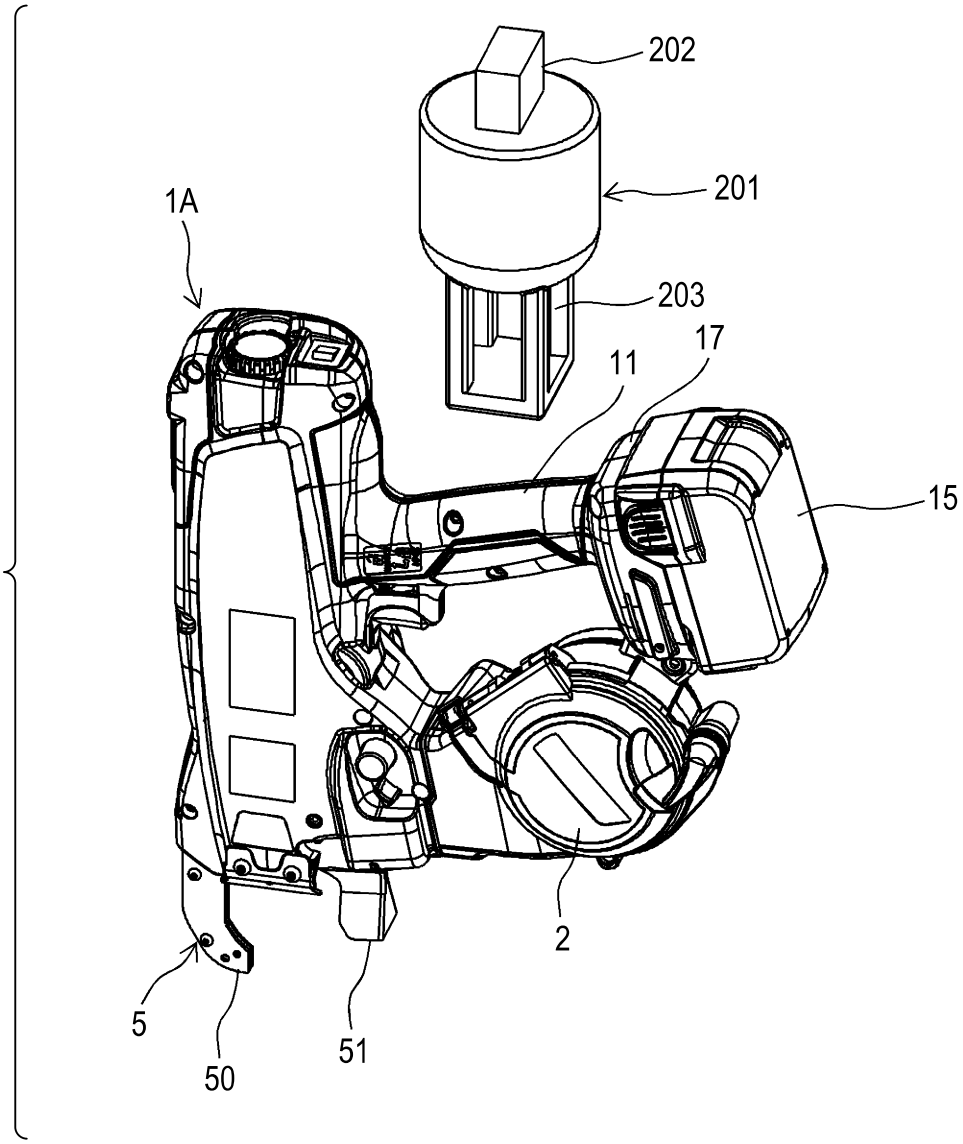


FIG. 25

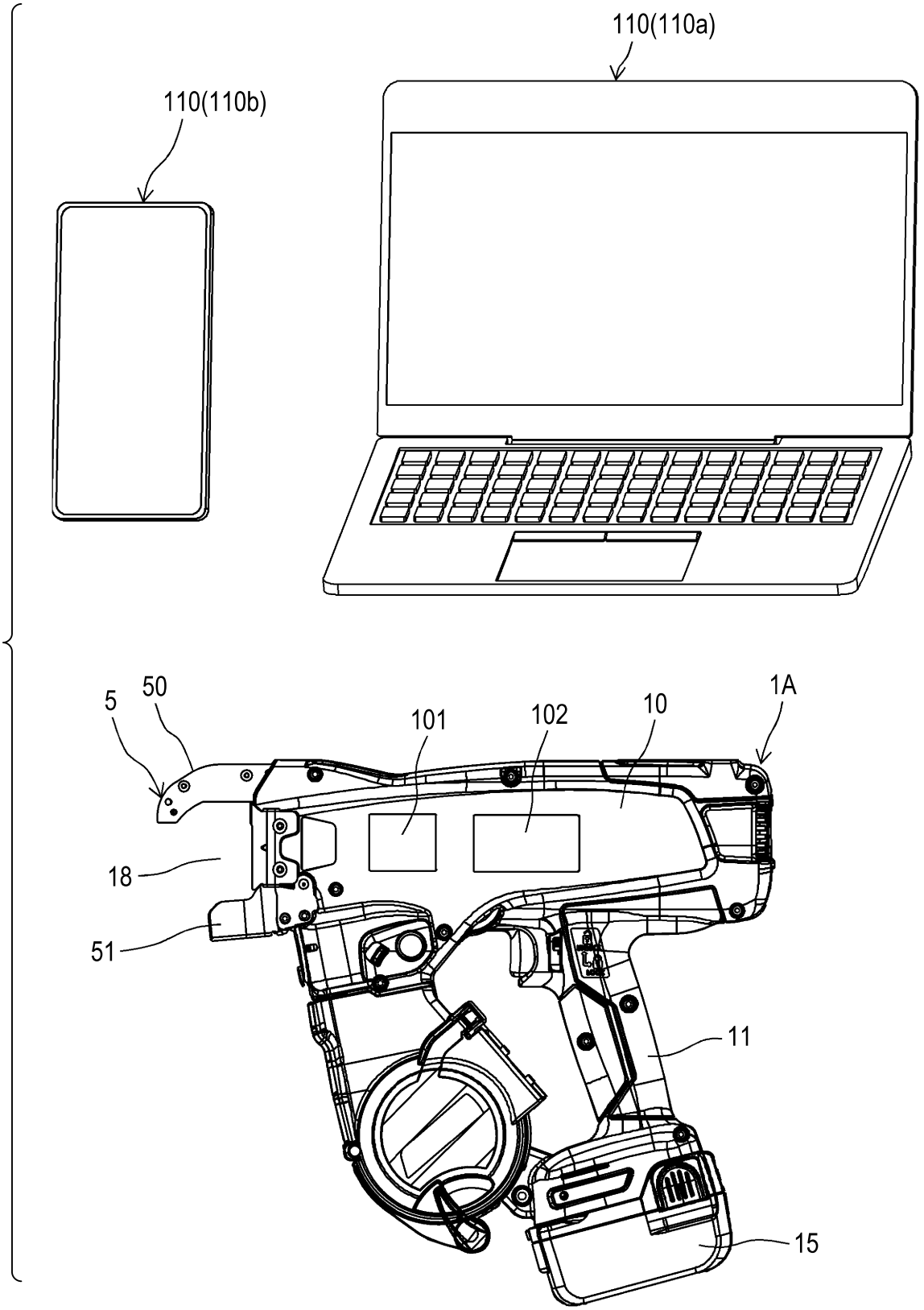


FIG. 26A

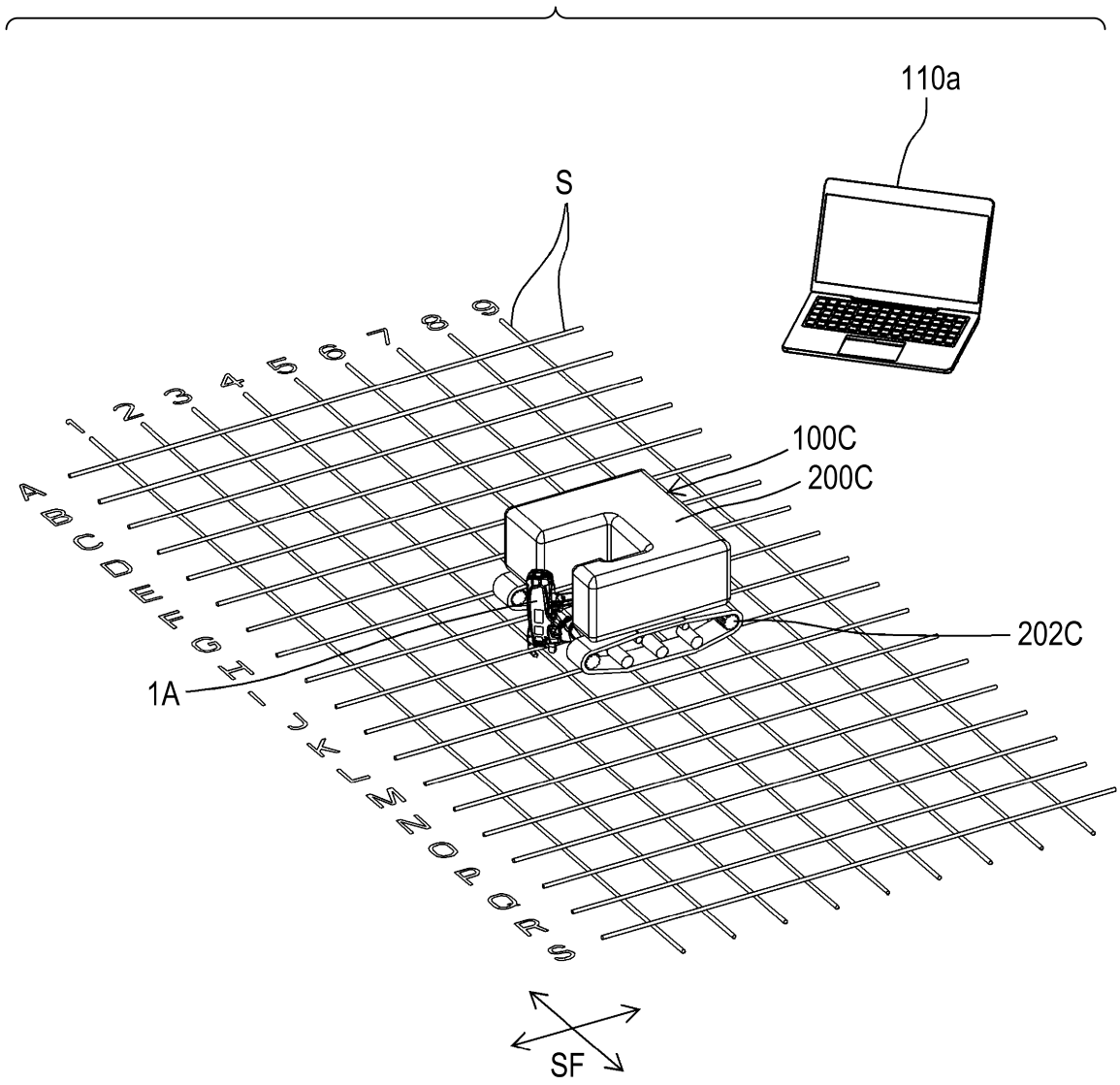


FIG. 26B

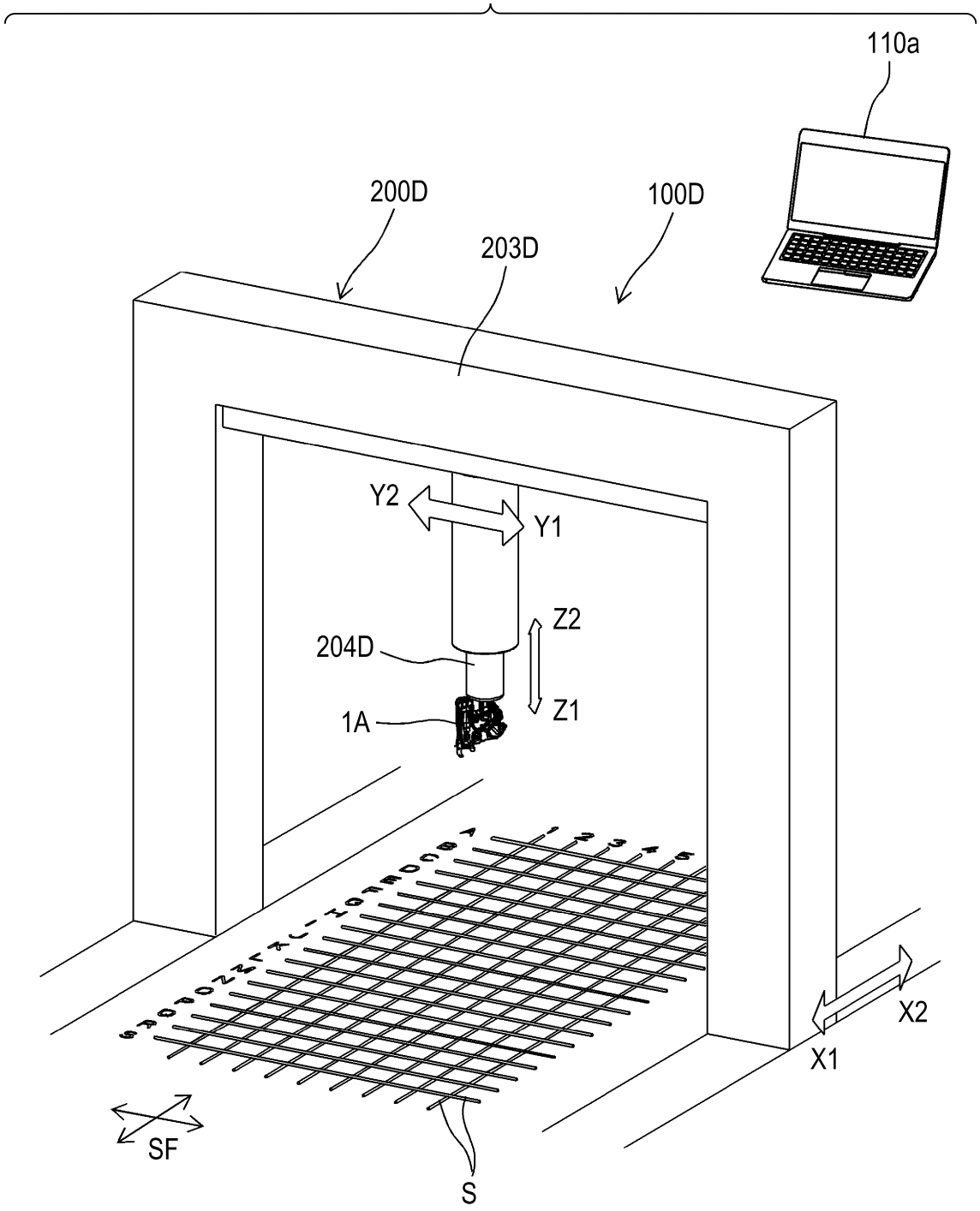


FIG. 27A

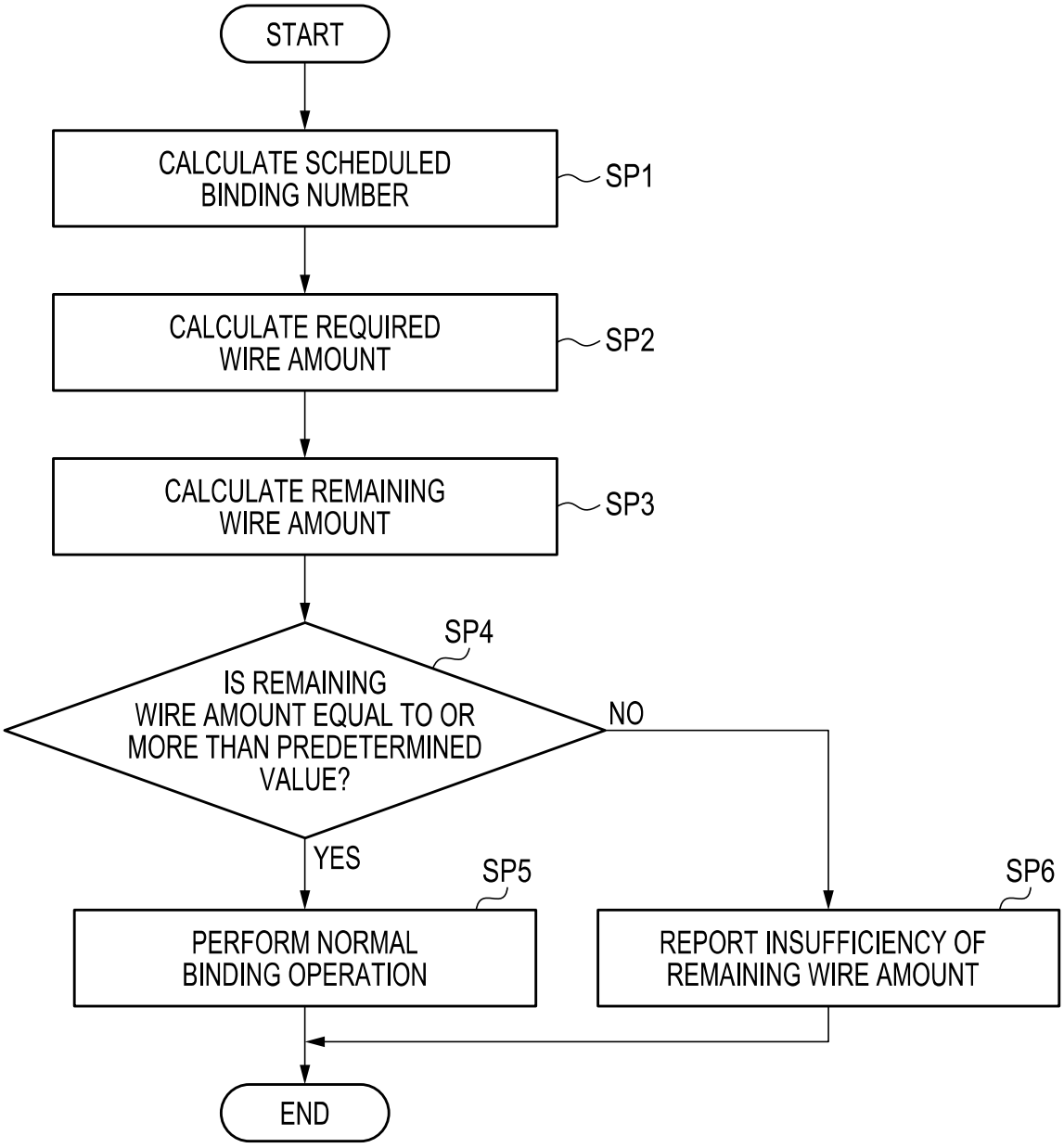

START
CALCULATE SCHEDULED BINDING NUMBER
SP1
CALCULATE REQUIRED WIRE AMOUNT
SP2
CALCULATE REMAINING WIRE AMOUNT
SP3
SP4
IS REMAINING WIRE AMOUNT EQUAL TO OR MORE THAN PREDETERMINED VALUE?
NO
YES
SP5
PERFORM NORMAL BINDING OPERATION
SP6
REPORT INSUFFICIENCY OF REMAINING WIRE AMOUNT
END

FIG. 27B

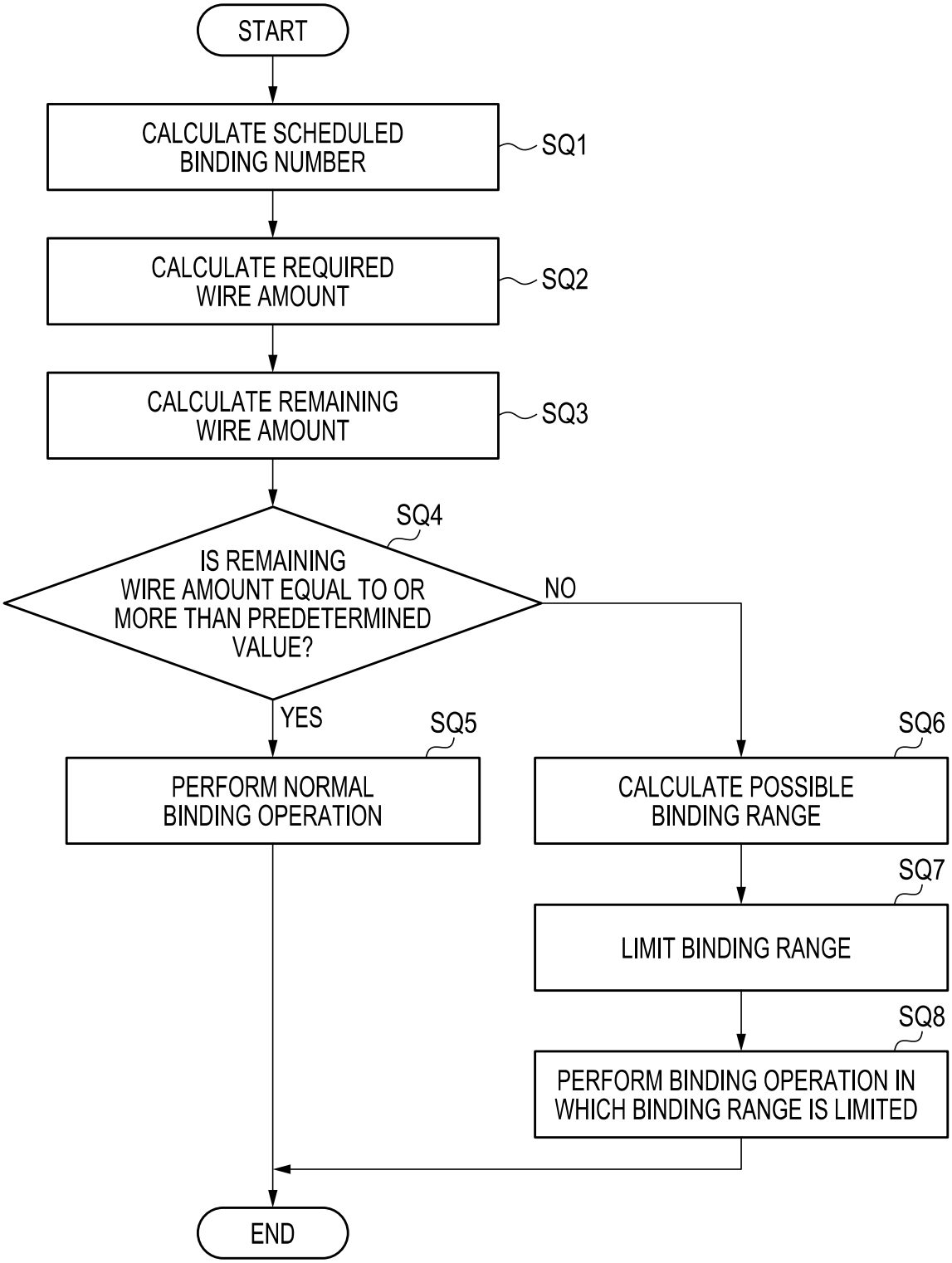

START
CALCULATE SCHEDULED BINDING NUMBER
SQ1
CALCULATE REQUIRED WIRE AMOUNT
SQ2
CALCULATE REMAINING WIRE AMOUNT
SQ3
SQ4
IS REMAINING WIRE AMOUNT EQUAL TO OR MORE THAN PREDETERMINED VALUE?
NO
YES
SQ5
PERFORM NORMAL BINDING OPERATION
SQ6
CALCULATE POSSIBLE BINDING RANGE
SQ7
LIMIT BINDING RANGE
SQ8
PERFORM BINDING OPERATION IN WHICH BINDING RANGE IS LIMITED
END

FIG. 28A

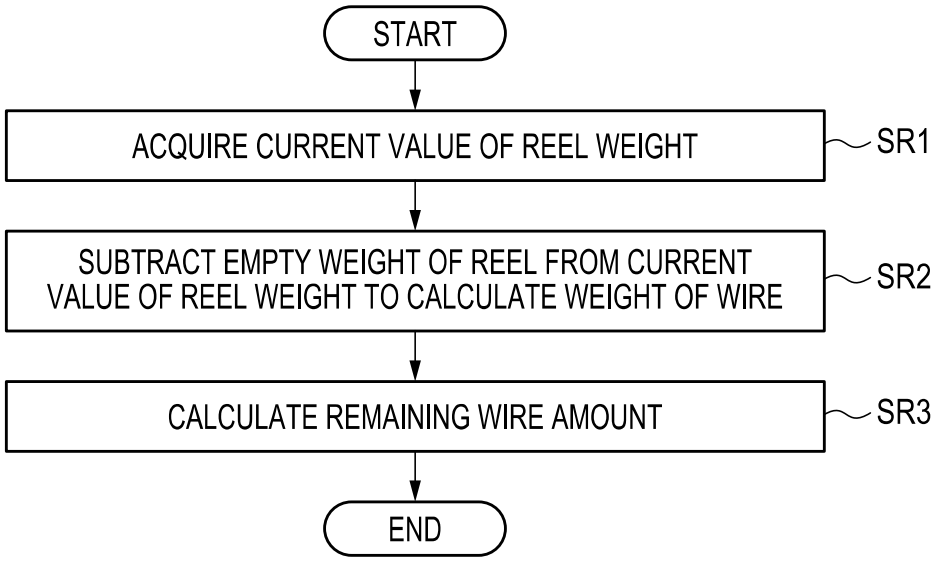


FIG. 28B

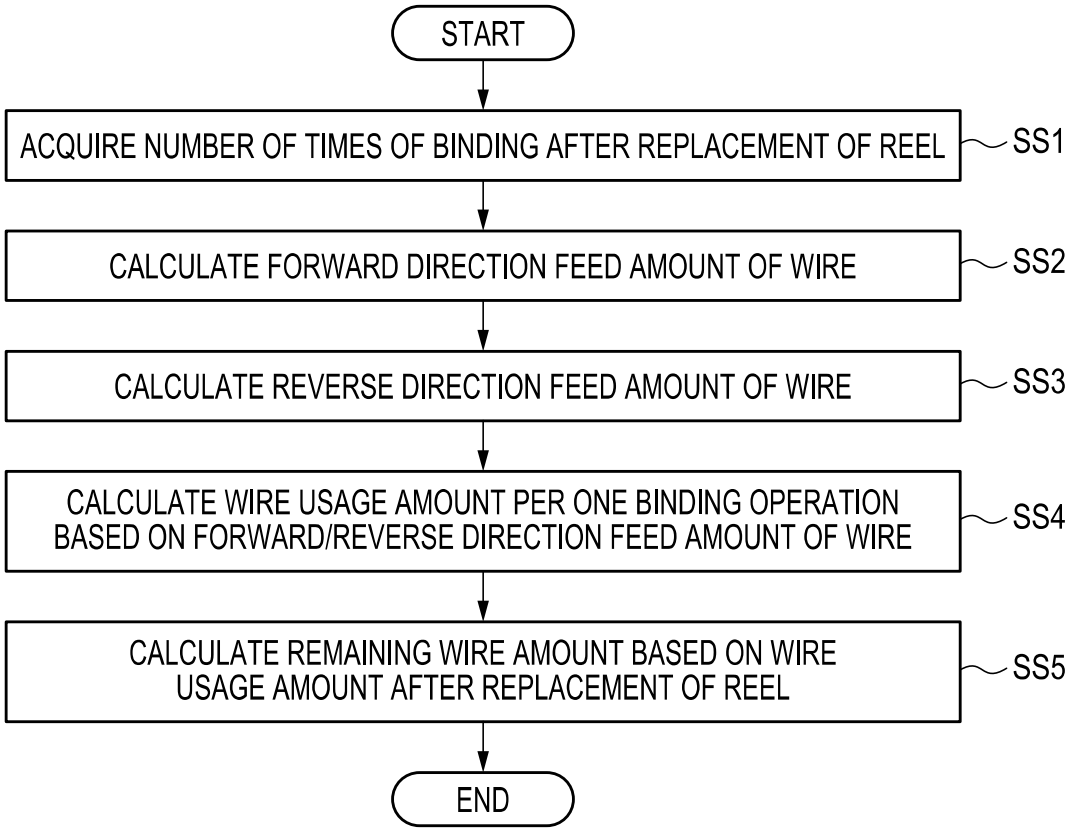


FIG. 28C

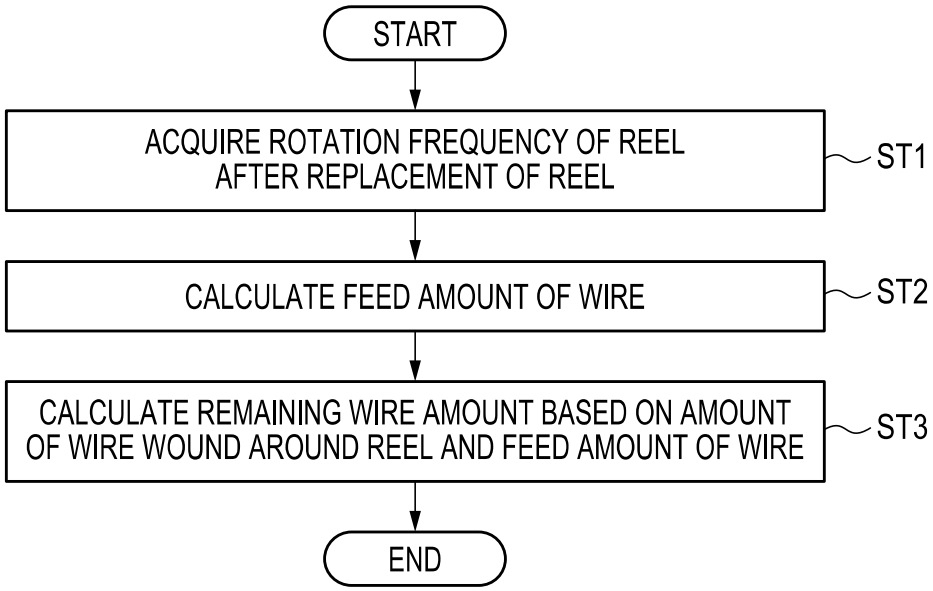


FIG. 29A

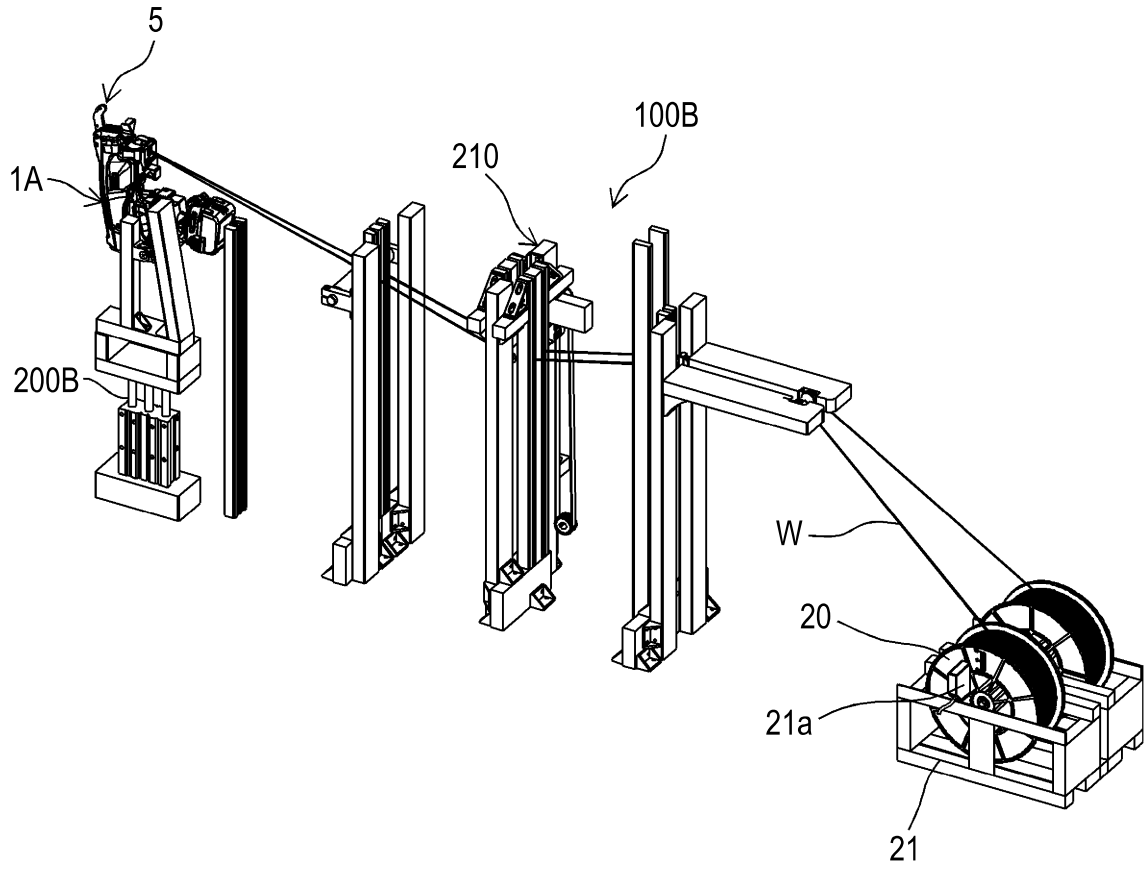


FIG. 29B

