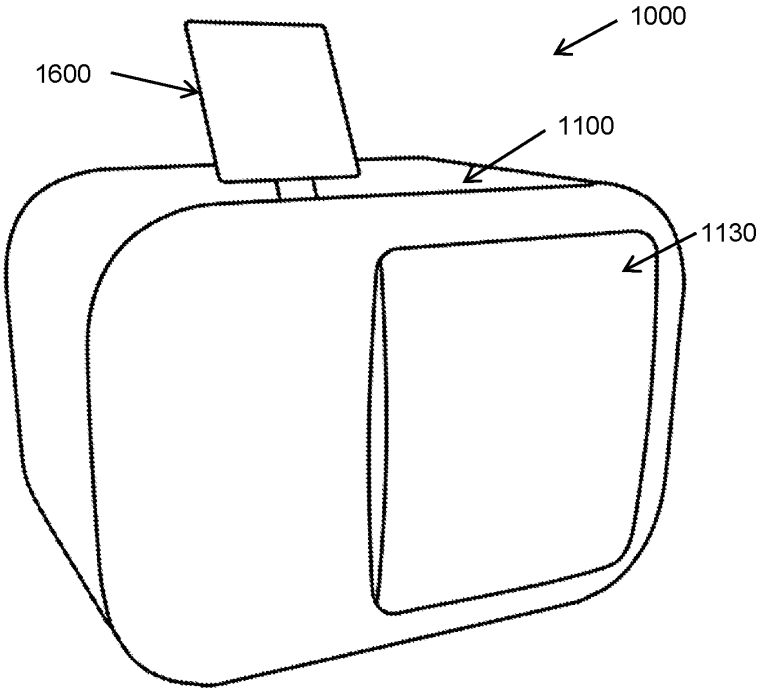


FIG. 1a

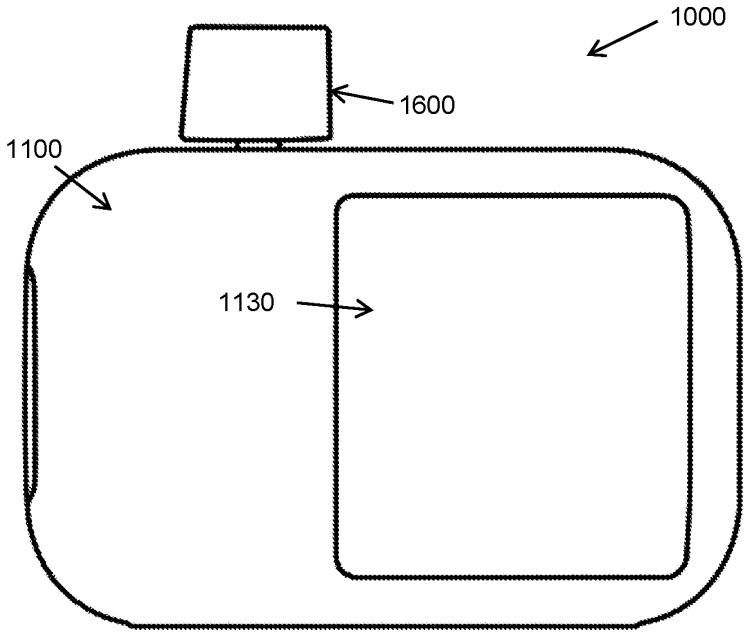


FIG. 1b

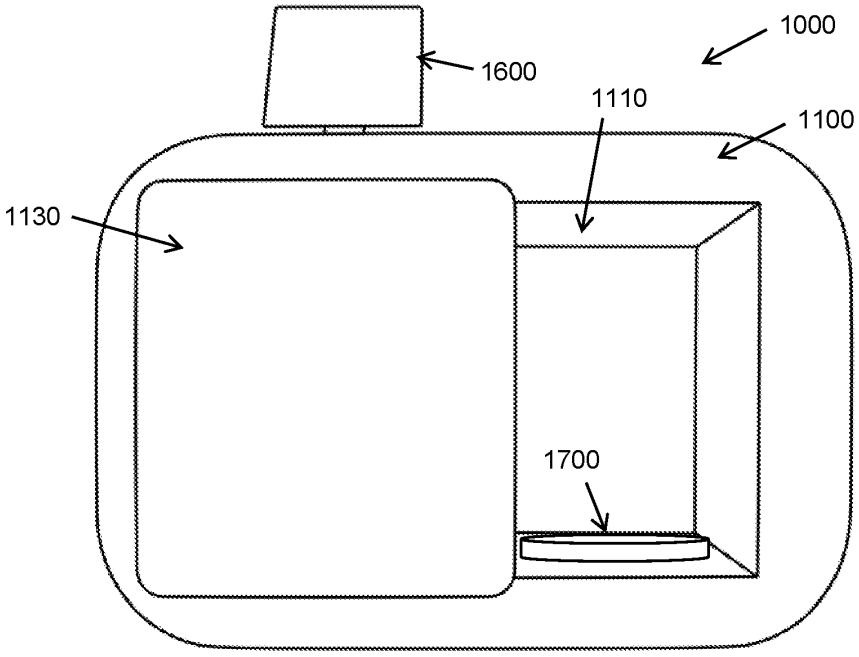

1000
1600
1110
1100
1130
1700

FIG. 1c

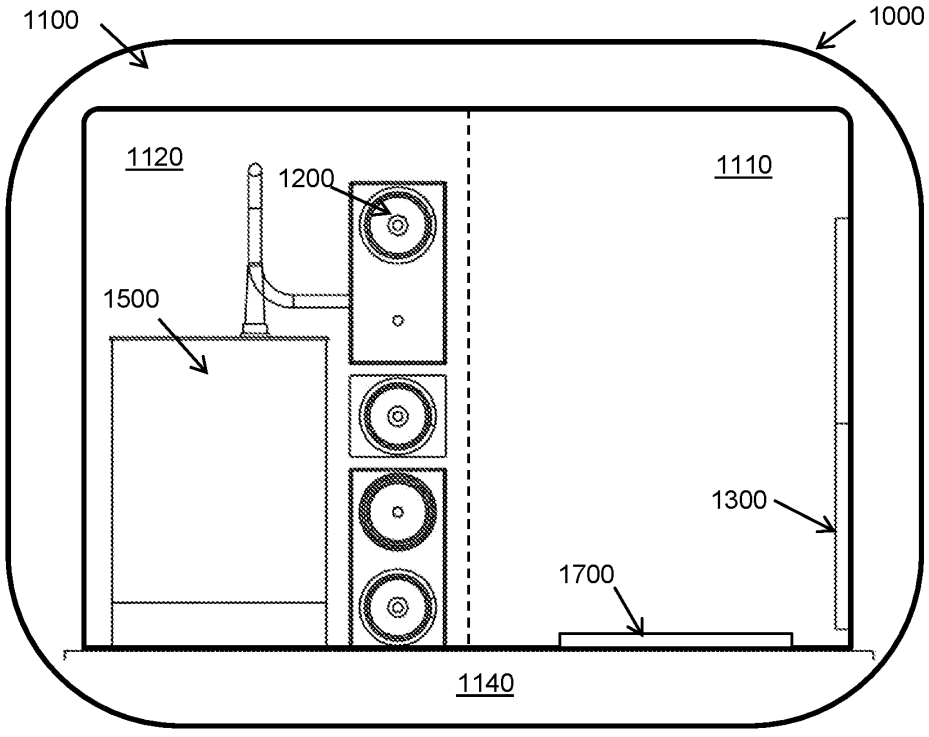

1100
1000
1120
1200
1110
1500
1300
1700
1140

FIG. 2

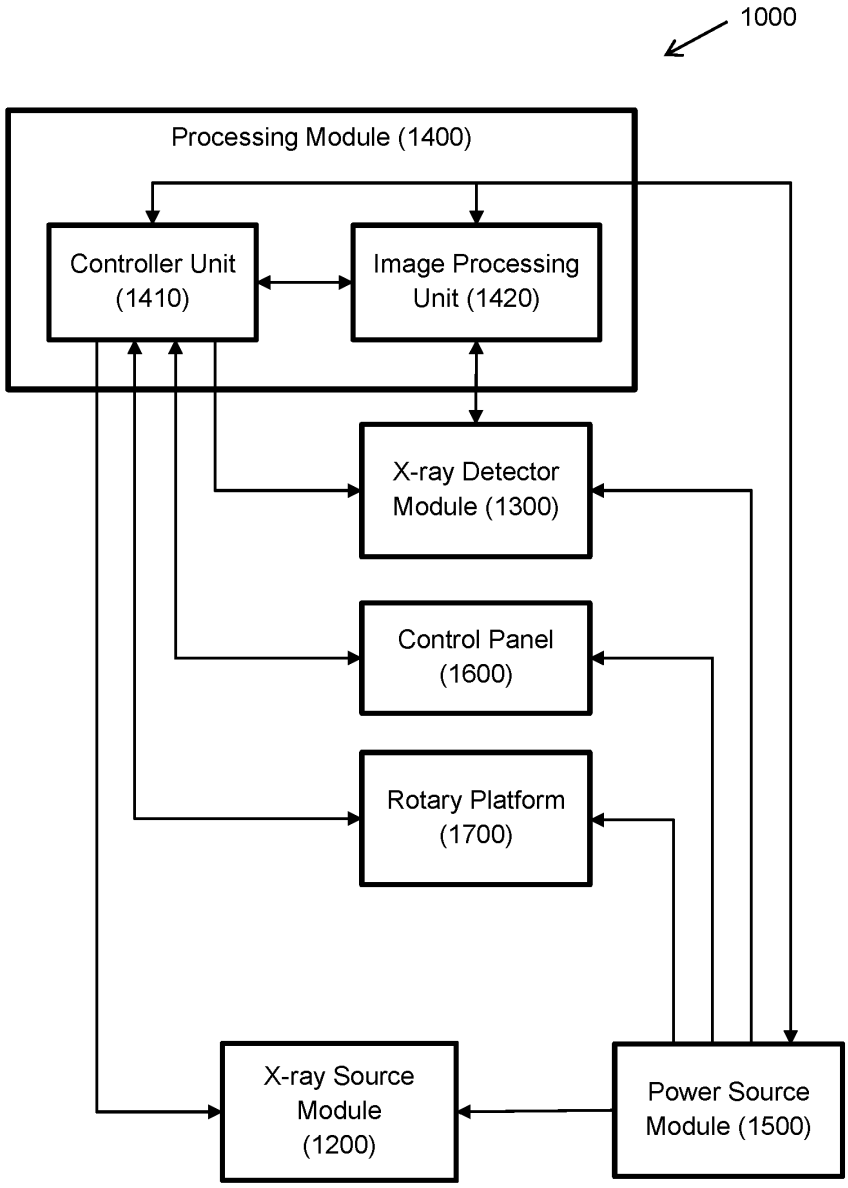

1000
Processing Module (1400)
Controller Unit (1410)
Image Processing Unit (1420)
X-ray Detector Module (1300)
Control Panel (1600)
Rotary Platform (1700)
X-ray Source Module (1200)
Power Source Module (1500)

FIG. 3

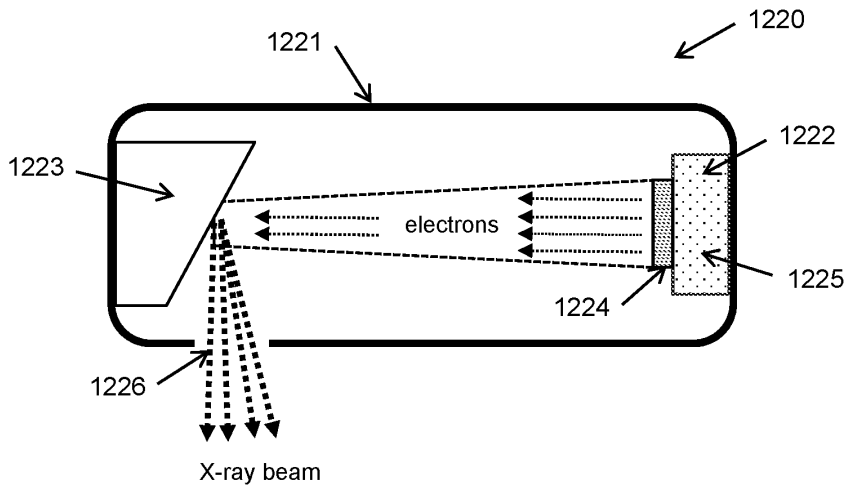

1220
1221
1222
1223
electrons
1225
1224
1226
X-ray beam

FIG. 4

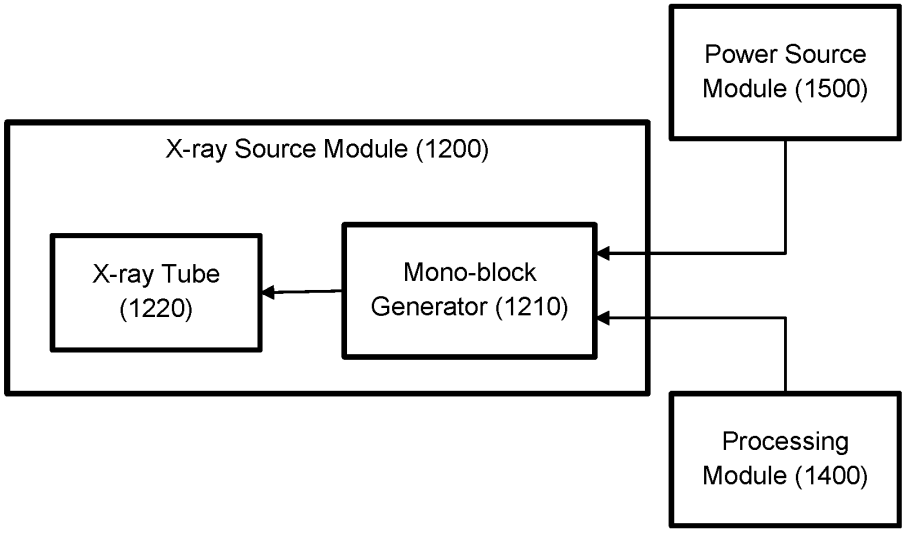

Power Source Module (1500)
X-ray Source Module (1200)
X-ray Tube (1220)
Mono-block Generator (1210)
Processing Module (1400)

FIG. 5a

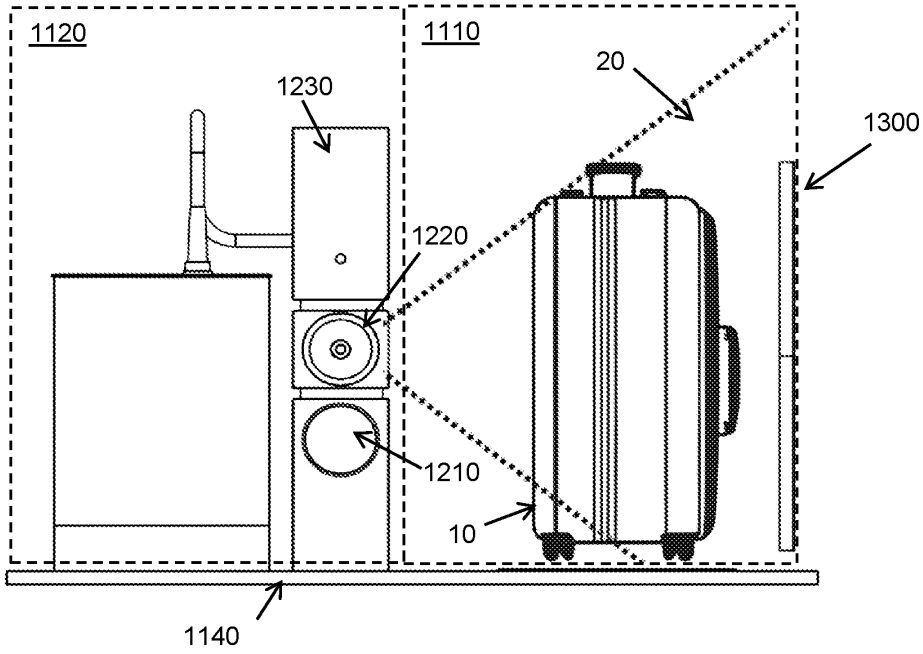


FIG. 5b

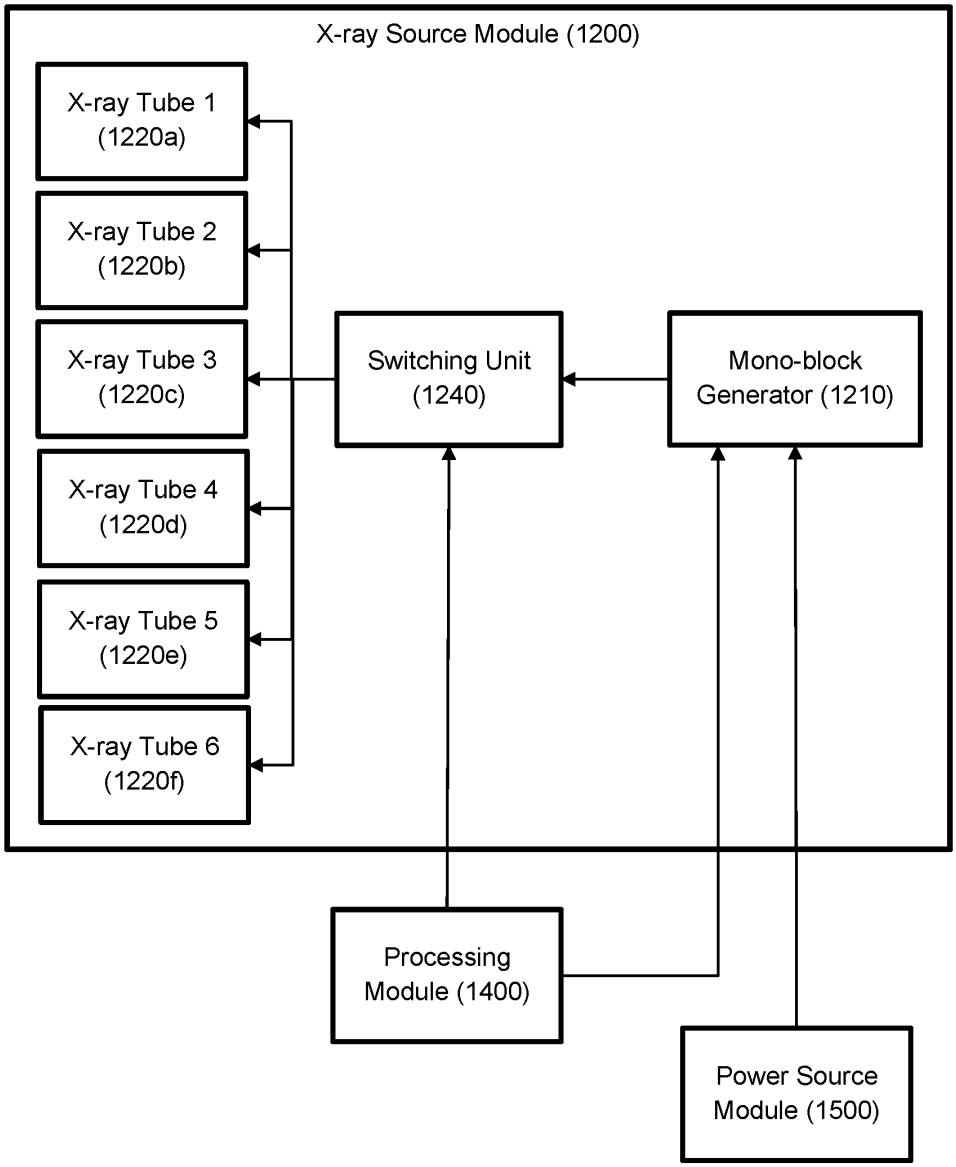

X-ray Source Module (1200)
X-ray Tube 1 (1220a)
X-ray Tube 2 (1220b)
X-ray Tube 3 (1220c)
X-ray Tube 4 (1220d)
X-ray Tube 5 (1220e)
X-ray Tube 6 (1220f)
Switching Unit (1240)
Mono-block Generator (1210)
Processing Module (1400)
Power Source Module (1500)

FIG. 6a

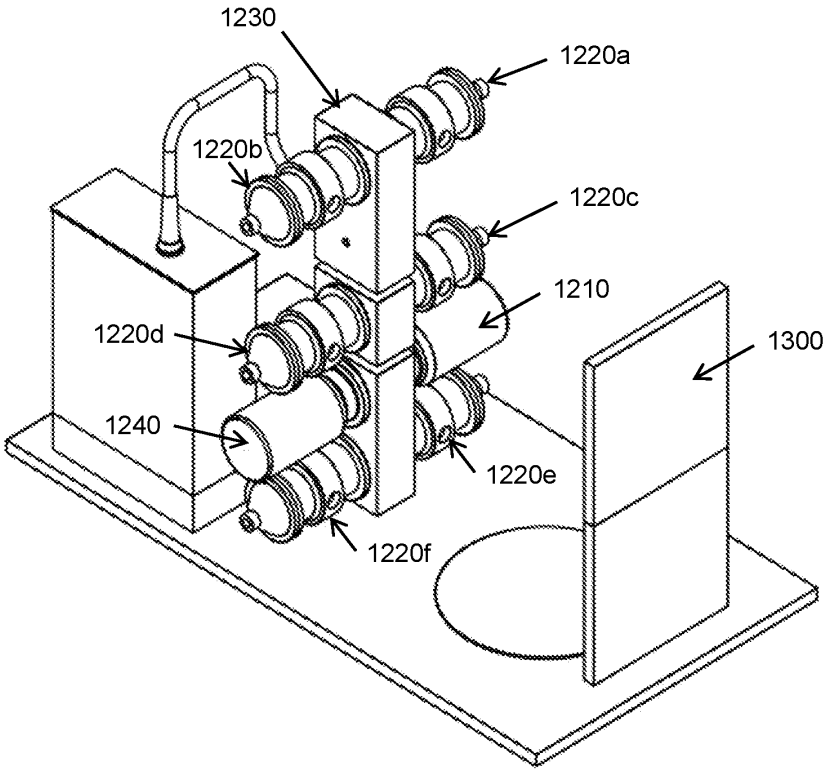

1230
1220a
1220b
1220c
1210
1220d
1300
1240
1220e
1220f

FIG. 6b

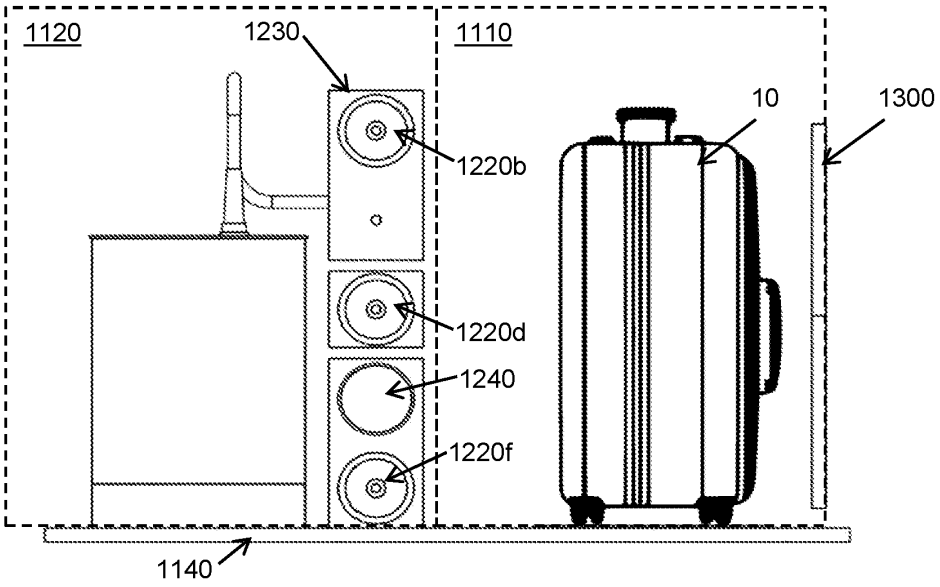

1120
1230
1110
10
1300
1220b
1220d
1240
1220f
1140

FIG. 6c

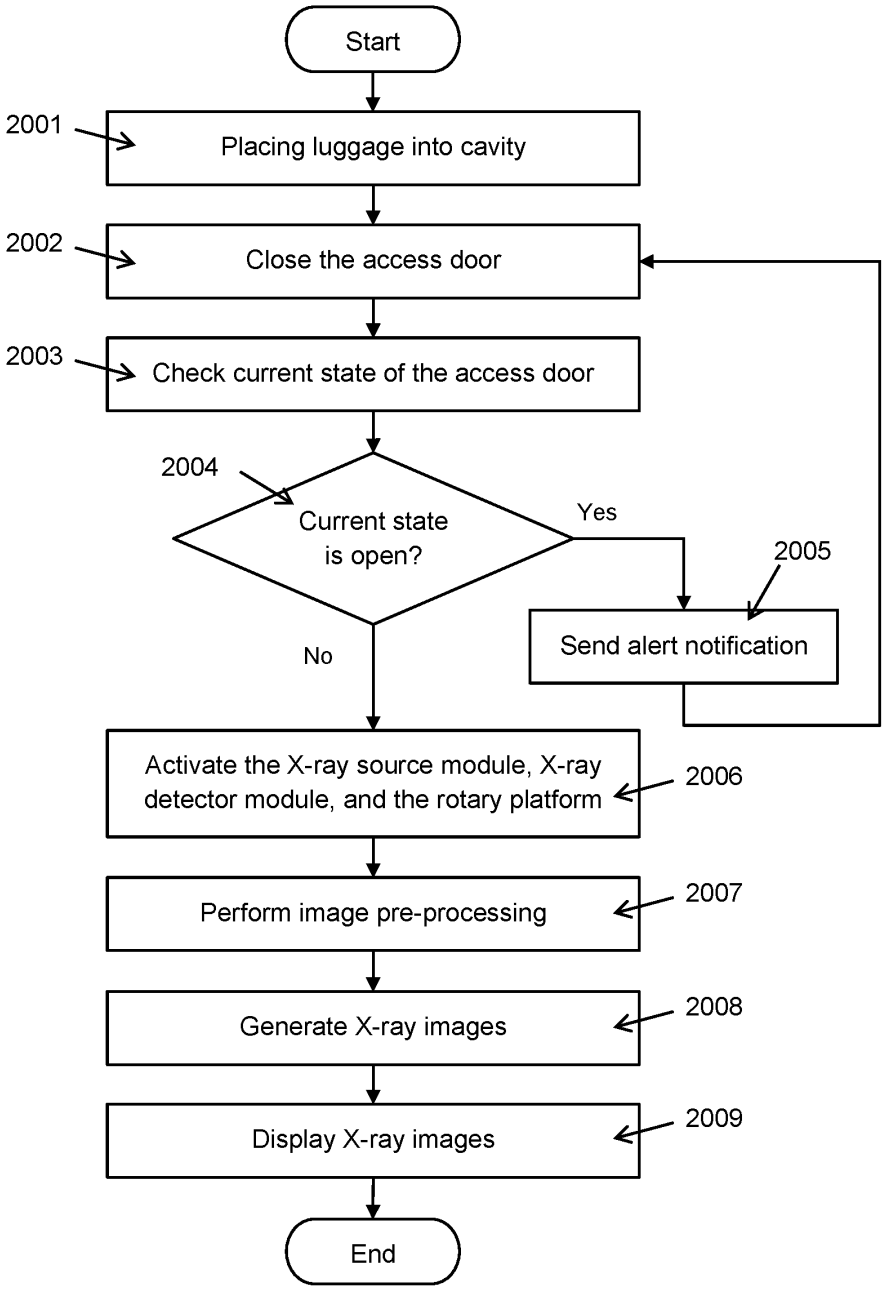

Start
2001
Placing luggage into cavity
2002
Close the access door
2003
Check current state of the access door
2004
Current state is open?
Yes
2005
Send alert notification
No
Activate the X-ray source module, X-ray detector module, and the rotary platform
2006
Perform image pre-processing
2007
Generate X-ray images
2008
Display X-ray images
2009
End

FIG. 7

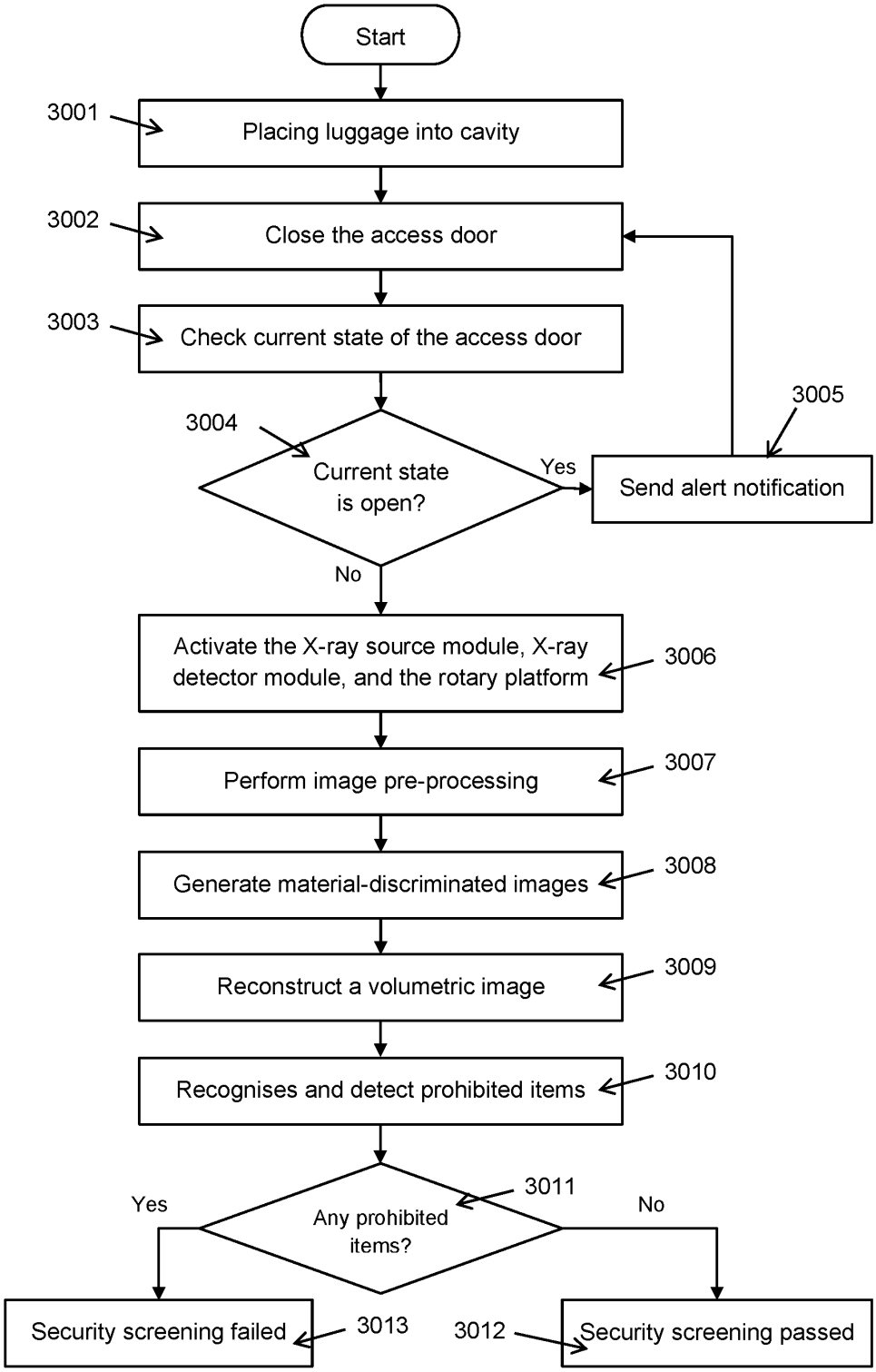

Start
3001
Placing luggage into cavity
3002
Close the access door
3003
Check current state of the access door
3004
Current state is open?
Yes
3005
Send alert notification
No
Activate the X-ray source module, X-ray detector module, and the rotary platform
3006
Perform image pre-processing
3007
Generate material-discriminated images
3008
Reconstruct a volumetric image
3009
Recognises and detect prohibited items
3010
Any prohibited items?
3011
Yes
No
Security screening failed
3013
3012
Security screening passed

FIG. 8