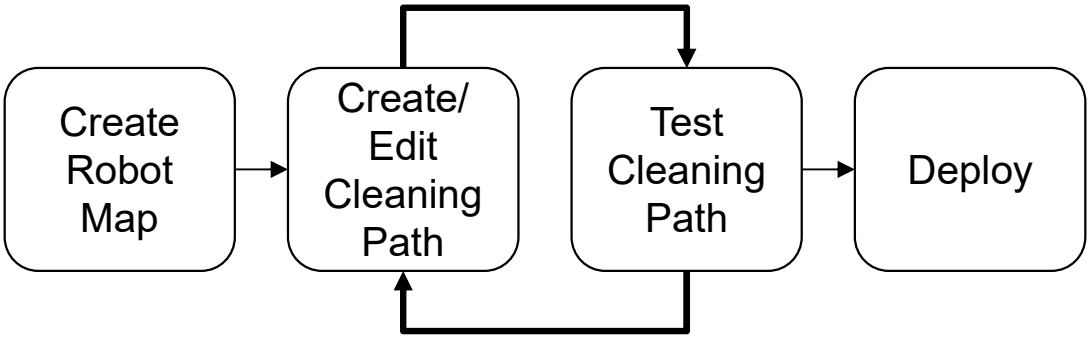
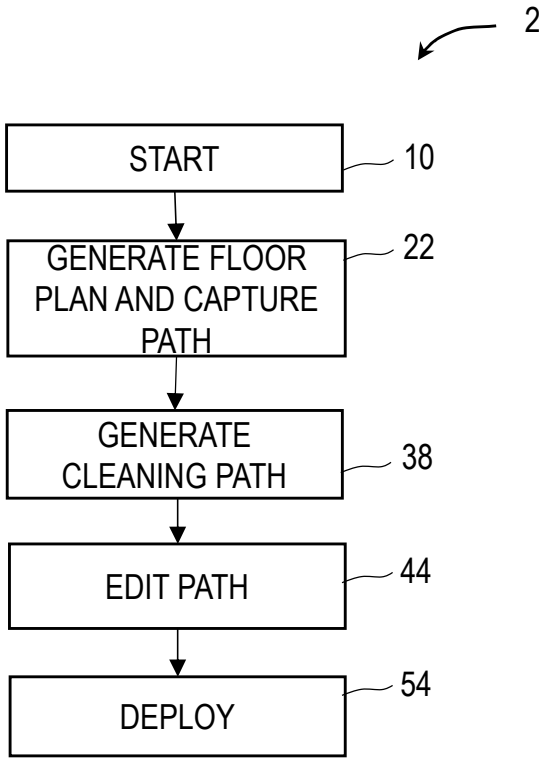

Create Robot Map
Create/ Edit Cleaning Path
Test Cleaning Path
Deploy

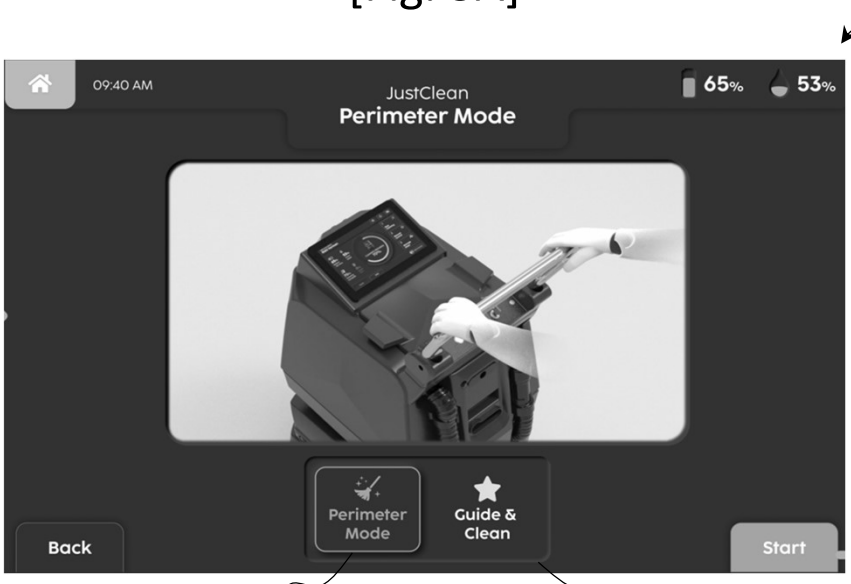
[Fig. 1]


2
START
10
GENERATE FLOOR PLAN AND CAPTURE PATH
22
GENERATE CLEANING PATH
38
EDIT PATH
44
DEPLOY
54

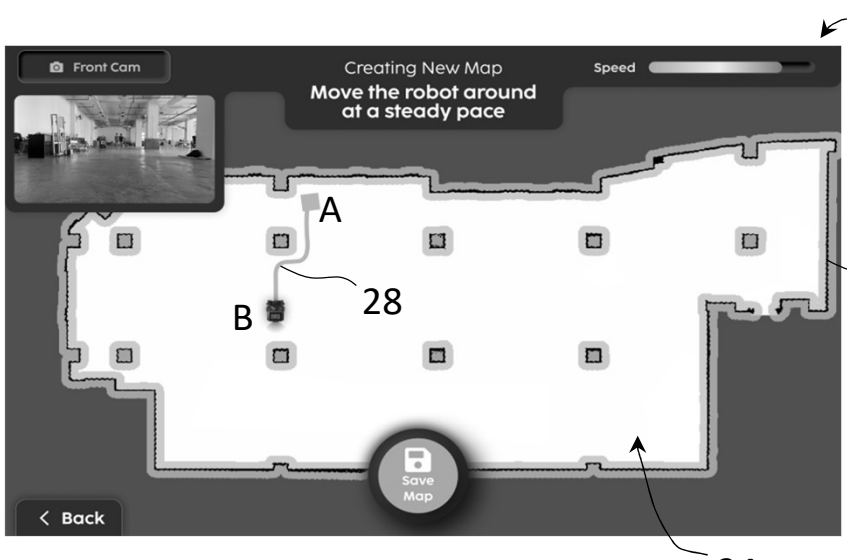
[Fig. 2]



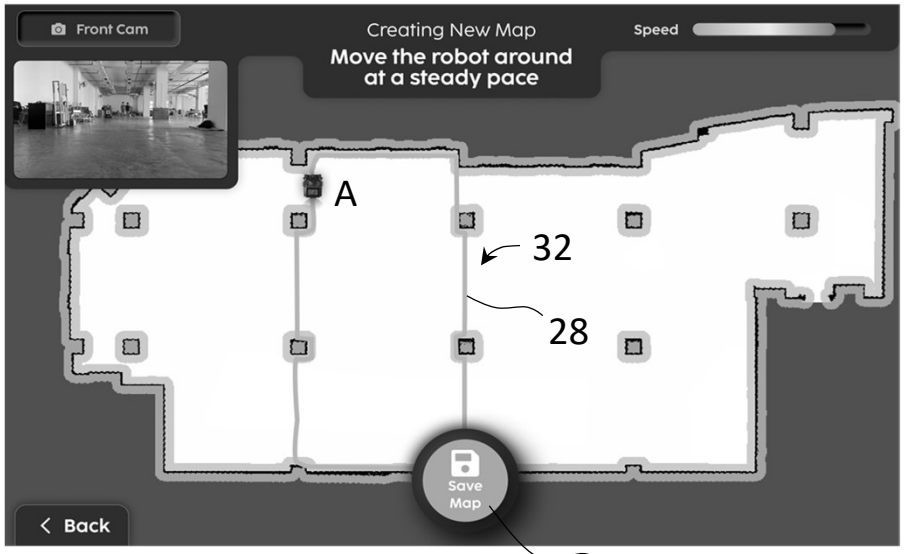
[Fig. 3A]



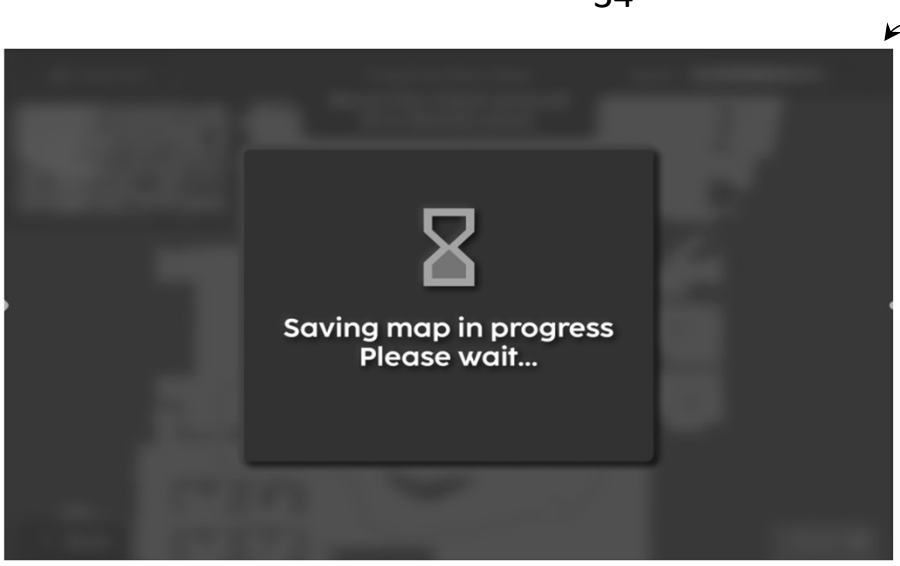
[Fig. 3B]



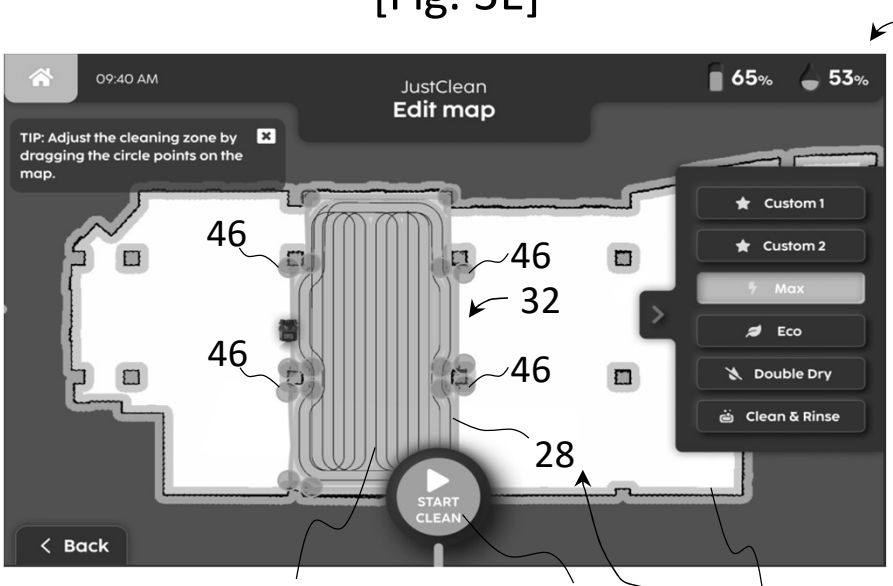
[Fig. 3C]



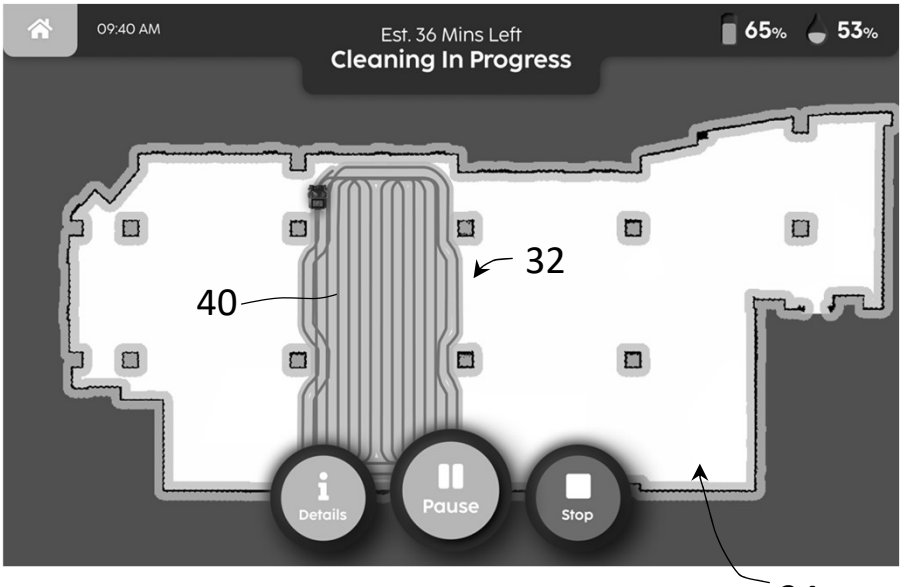
[Fig. 3D]



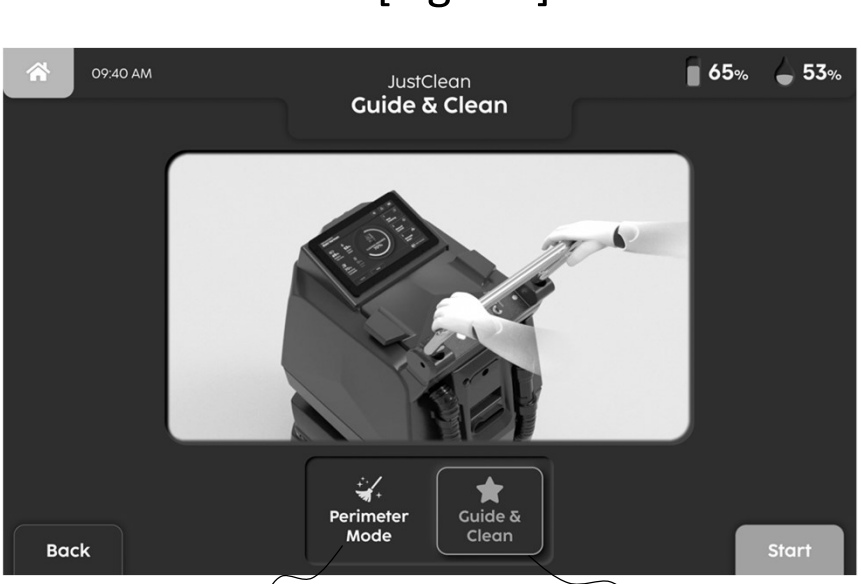
[Fig. 3E]



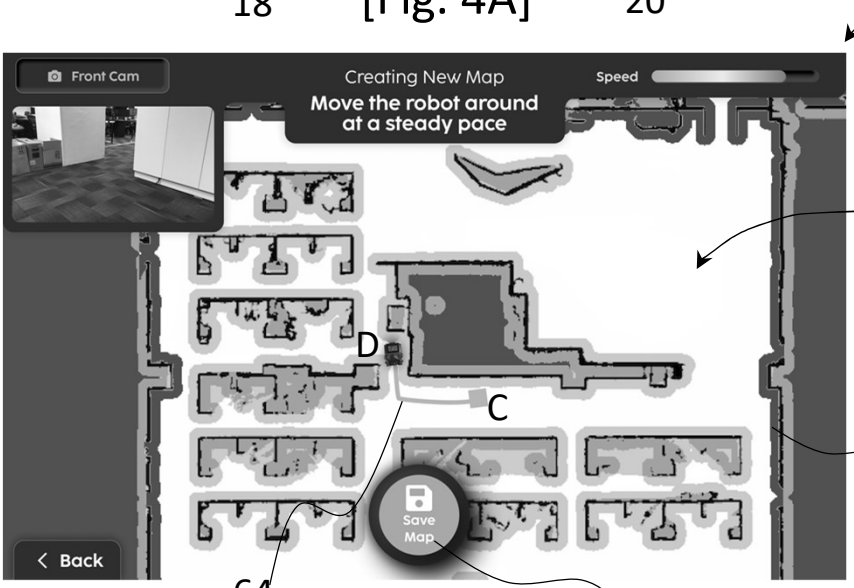
[Fig. 3F]



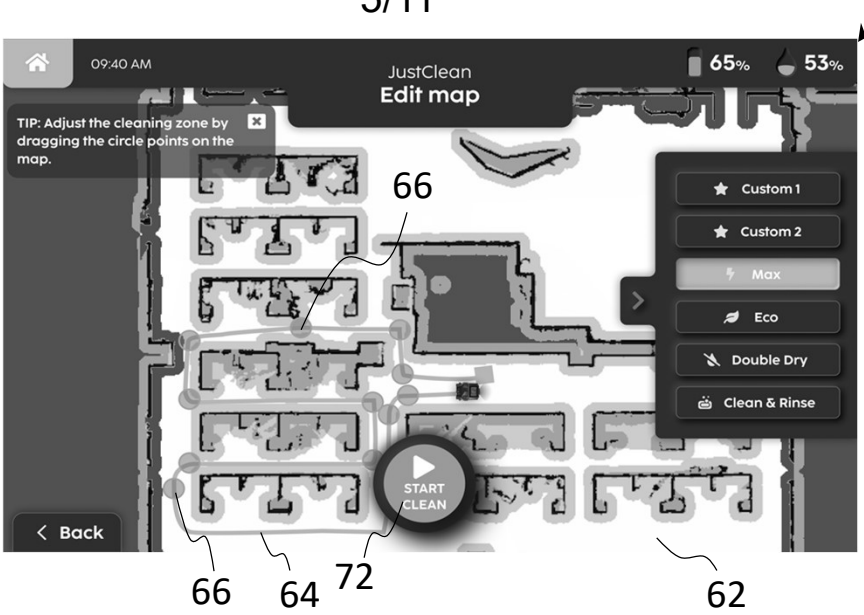
[Fig. 3G]



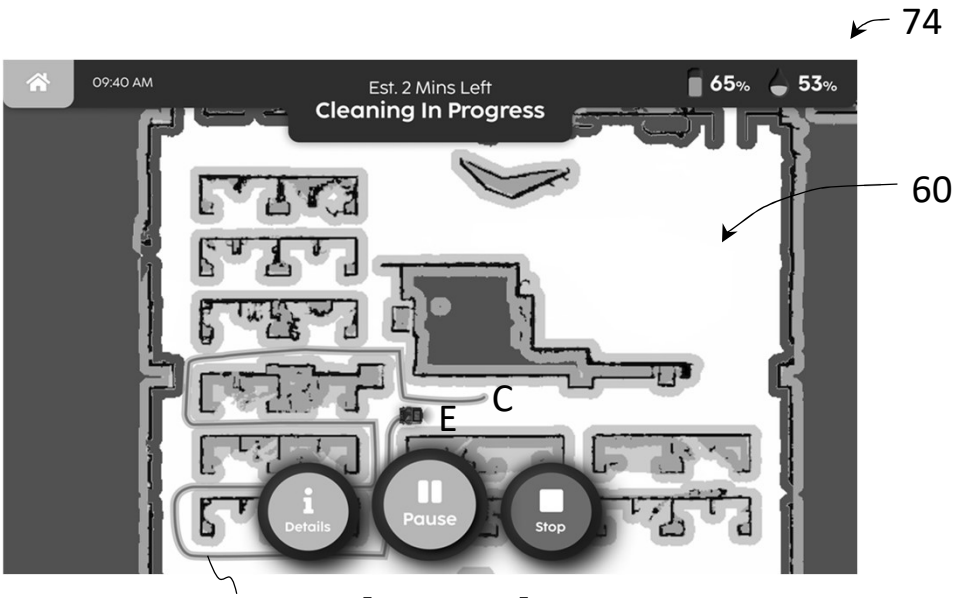
[Fig. 4A]



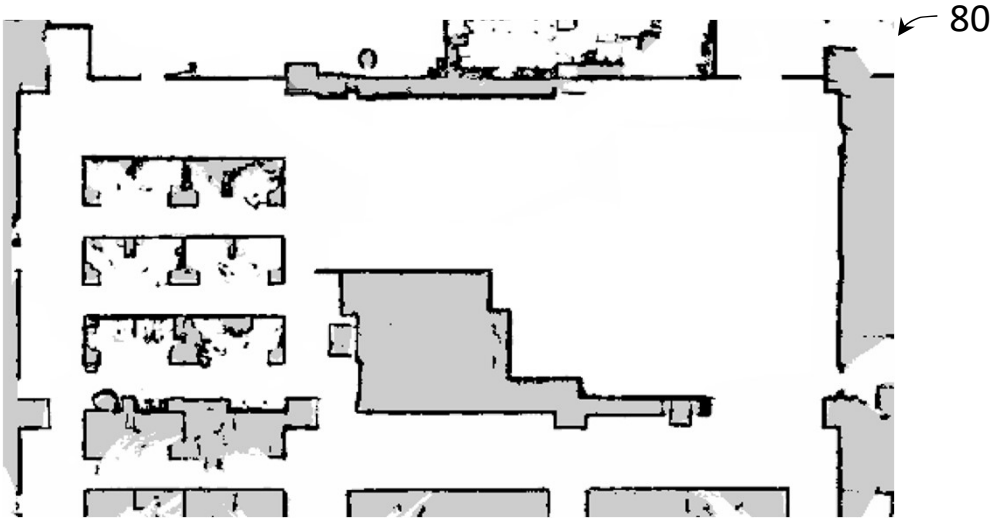
[Fig. 4B]


68
09:40 AM
JustClean
Edit map
65%
53%
TIP: Adjust the cleaning zone by dragging the circle points on the map.
66
Custom 1
Custom 2
Max
Eco
Double Dry
Clean & Rinse
START CLEAN
Back
66
64
72
62

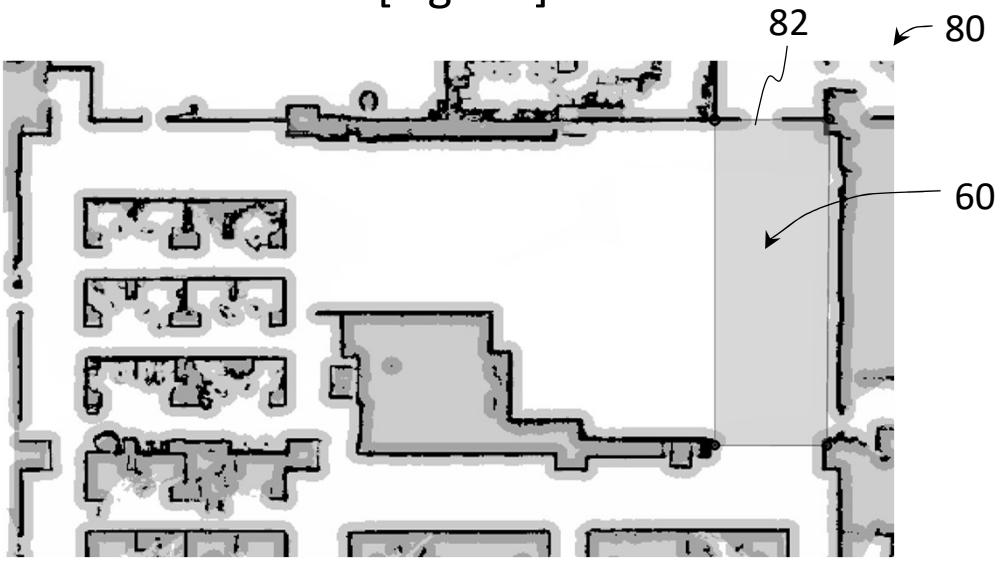
[Fig. 4C]


74
09:40 AM
Est. 2 Mins Left
Cleaning In Progress
65%
53%
60
C
E
Details
Pause
Stop
64

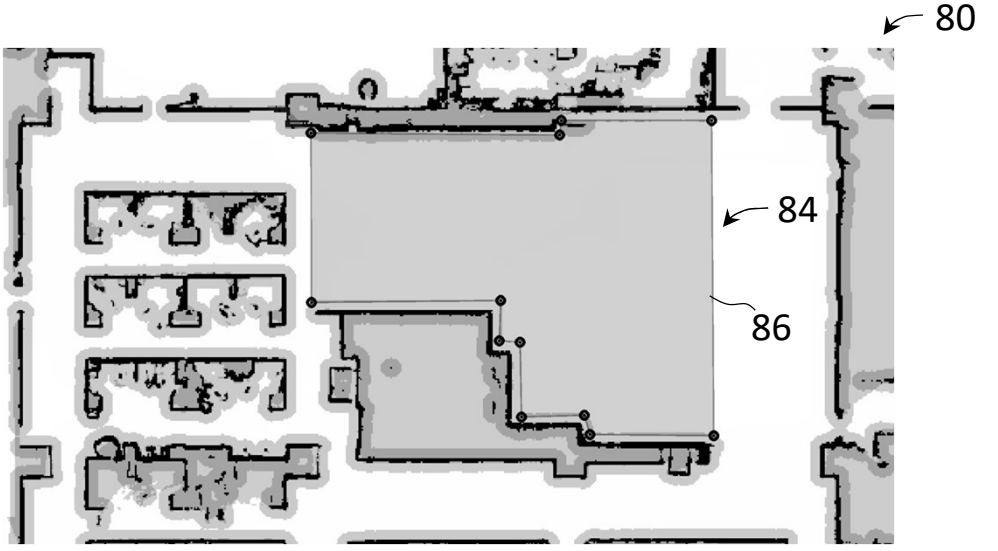
[Fig. 4D]



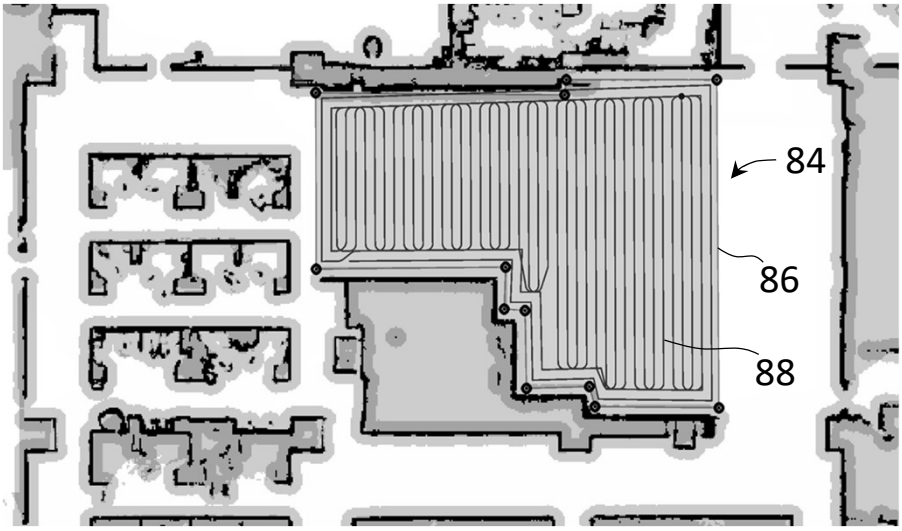
[Fig. 5A]



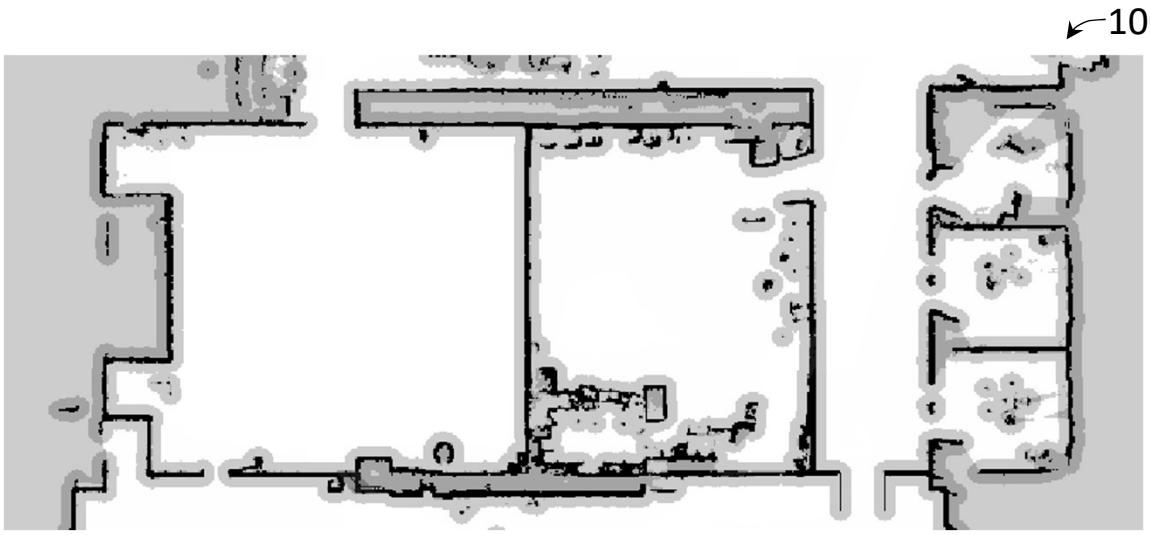
[Fig. 5B]



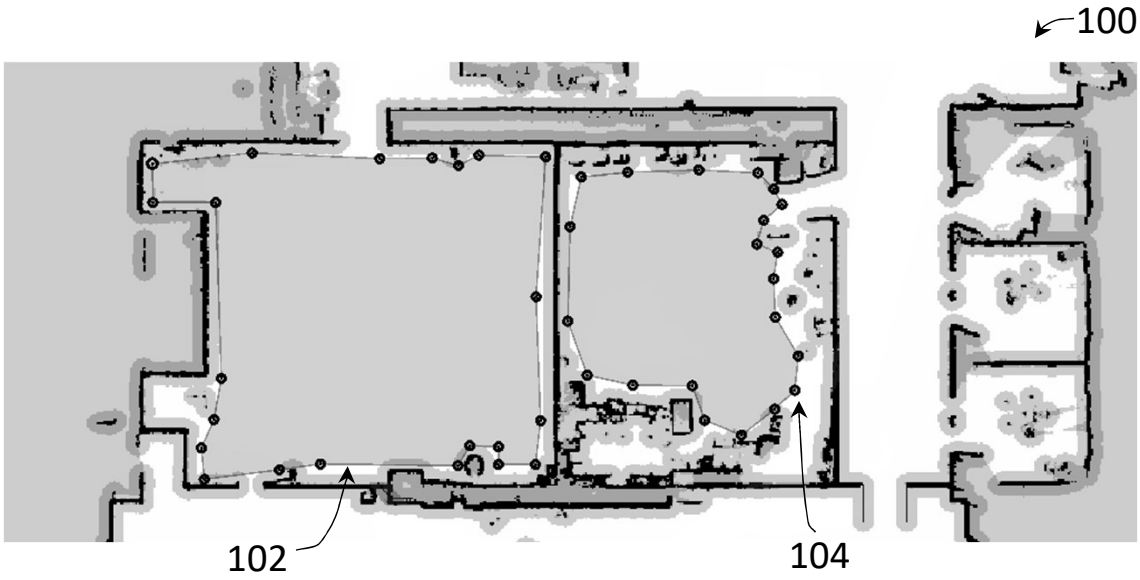
[Fig. 5C]



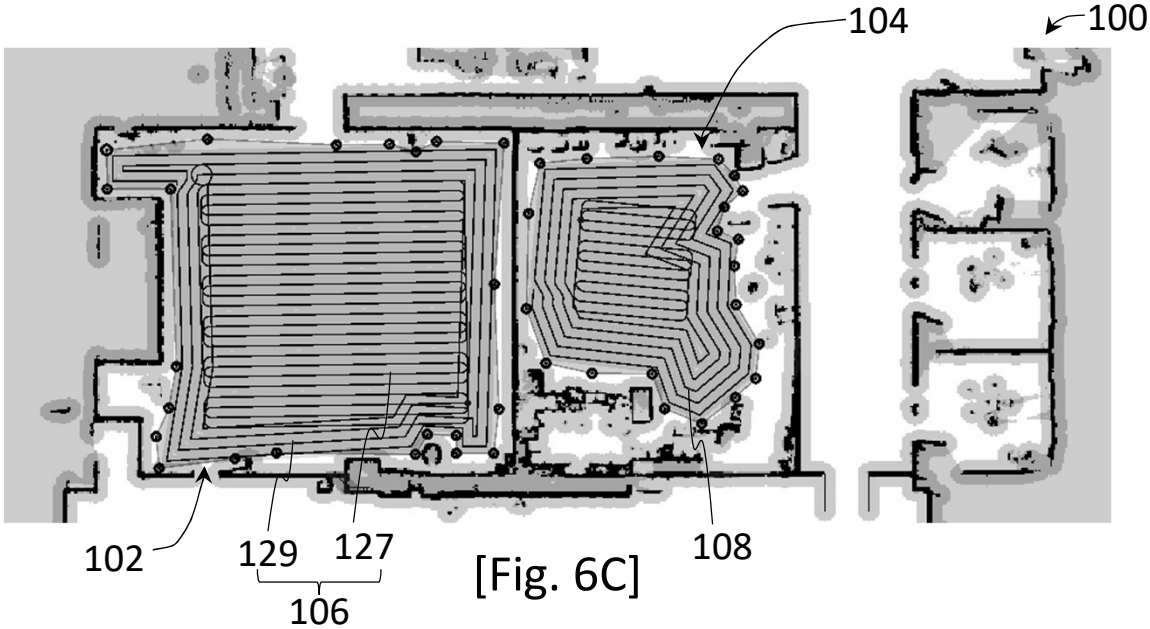
[Fig. 5D]



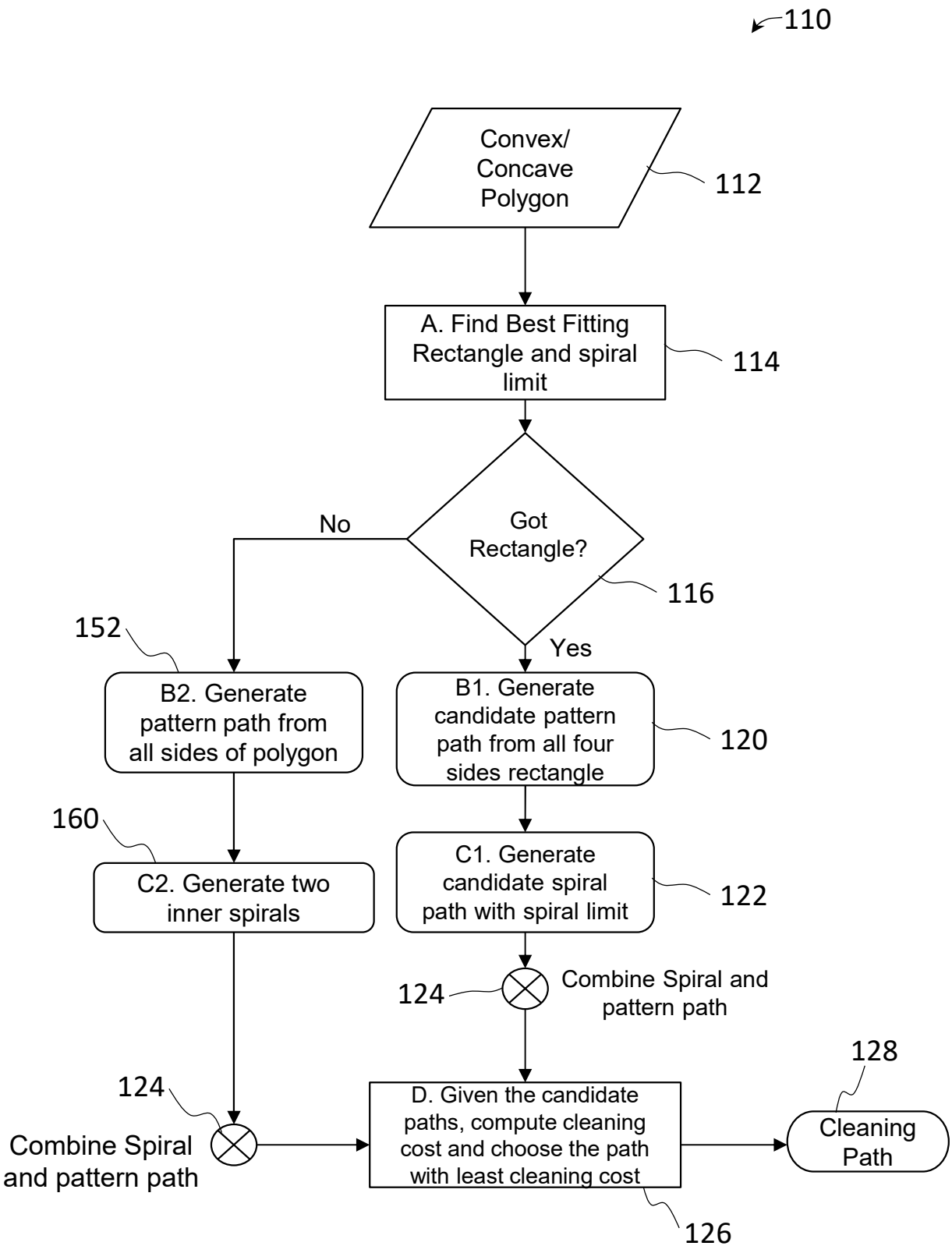
[Fig. 6A]



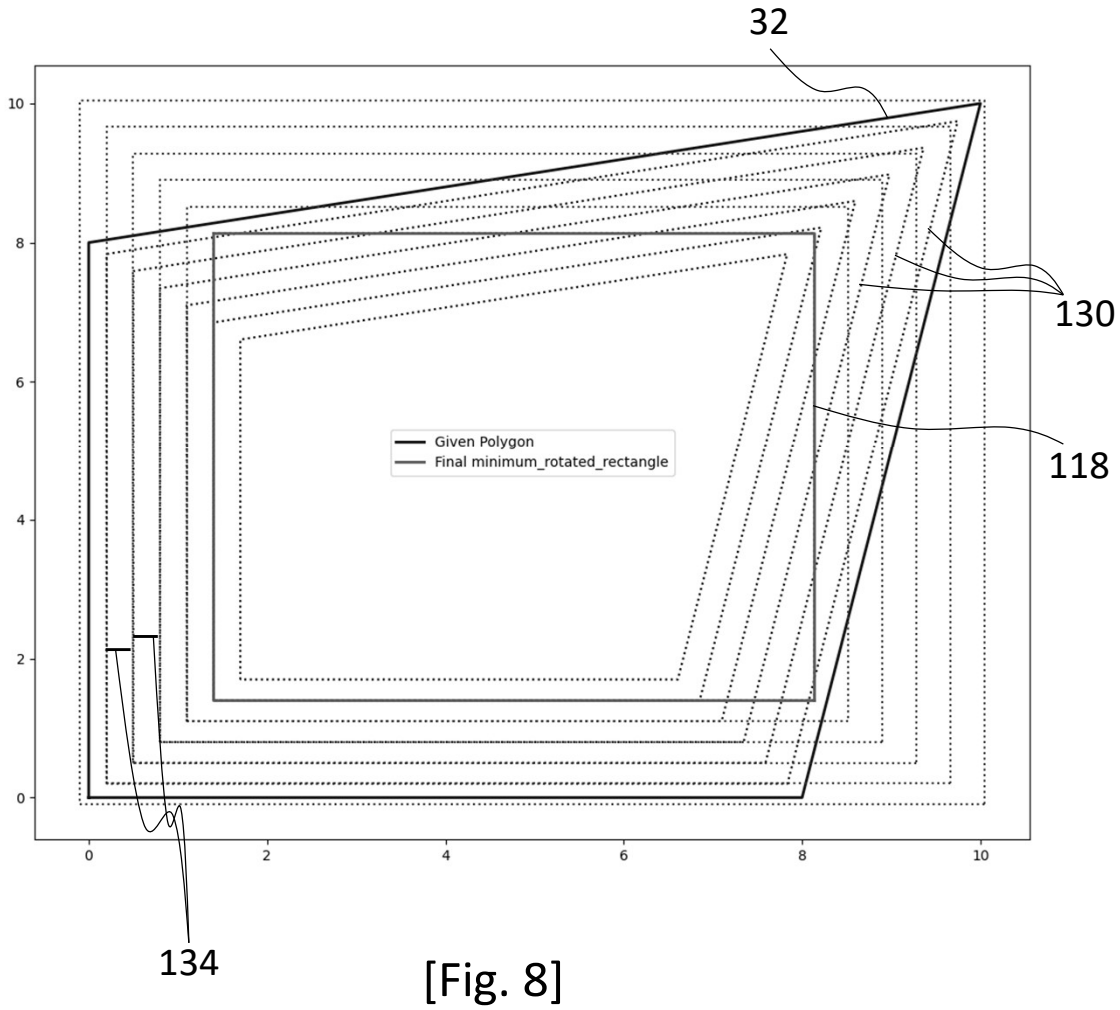
[Fig. 6B]



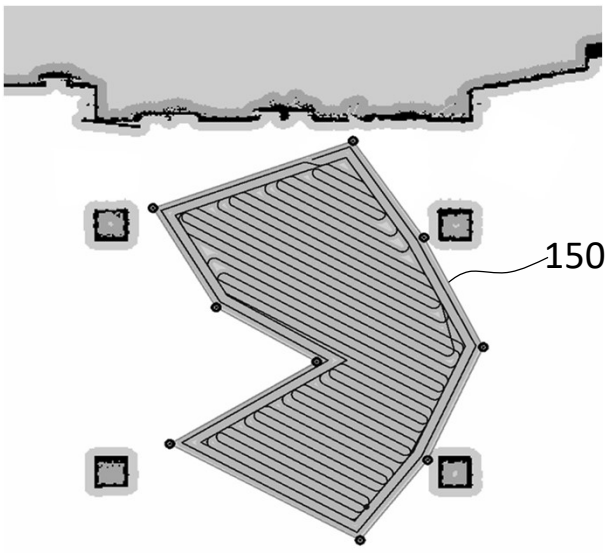
[Fig. 6C]


110
Convex/
Concave
Polygon
112
A. Find Best Fitting
Rectangle and spiral
limit
114
Got
Rectangle?
116
No
Yes
152
B2. Generate
pattern path from
all sides of polygon
B1. Generate
candidate pattern
path from all four
sides rectangle
120
160
C2. Generate two
inner spirals
C1. Generate
candidate spiral
path with spiral limit
122
124
Combine Spiral and
pattern path
124
Combine Spiral
and pattern path
D. Given the candidate
paths, compute cleaning
cost and choose the path
with least cleaning cost
126
128
Cleaning
Path

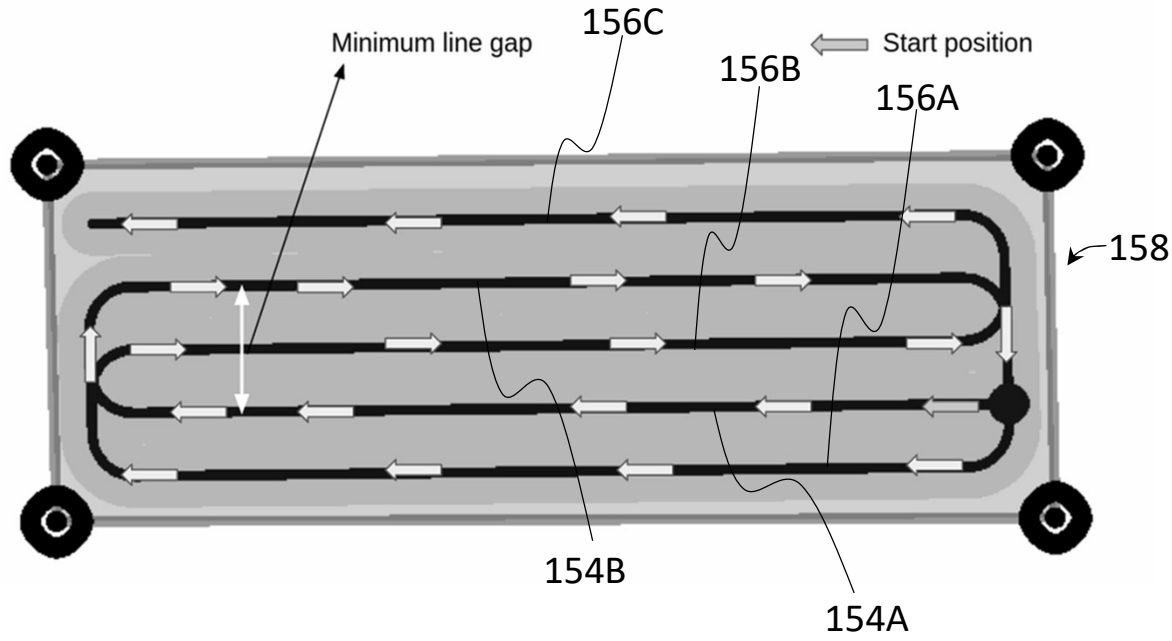
[Fig. 7]


32
130
118
134
Given Polygon
Final minimum_rotated_rectangle
0
2
4
6
8
10

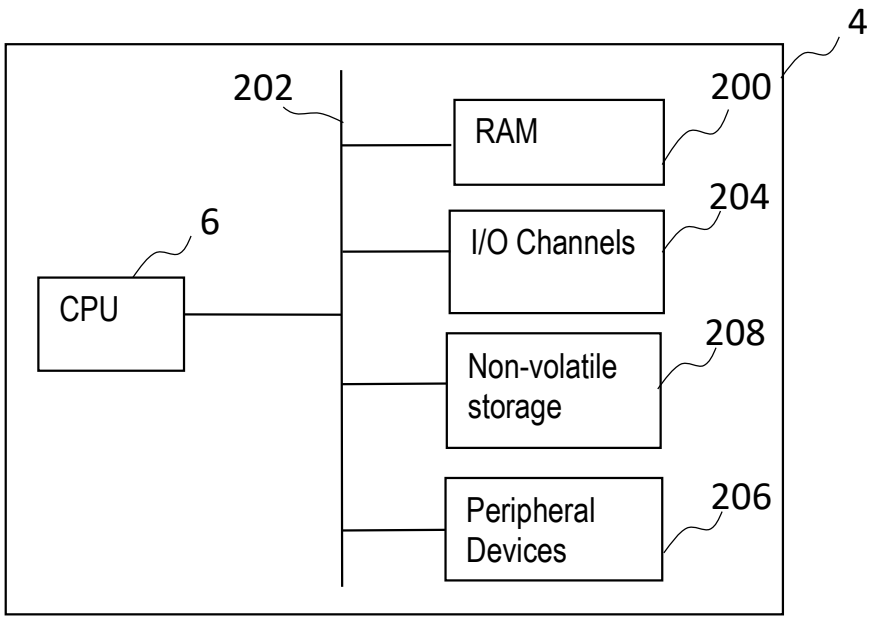
[Fig. 8]


150

[Fig. 9]


Minimum line gap
156C
156B
156A
Start position
158
154B
154A

[Fig. 10]


4
202
200
RAM
204
I/O Channels
6
CPU
208
Non-volatile storage
206
Peripheral Devices

[Fig. 11]