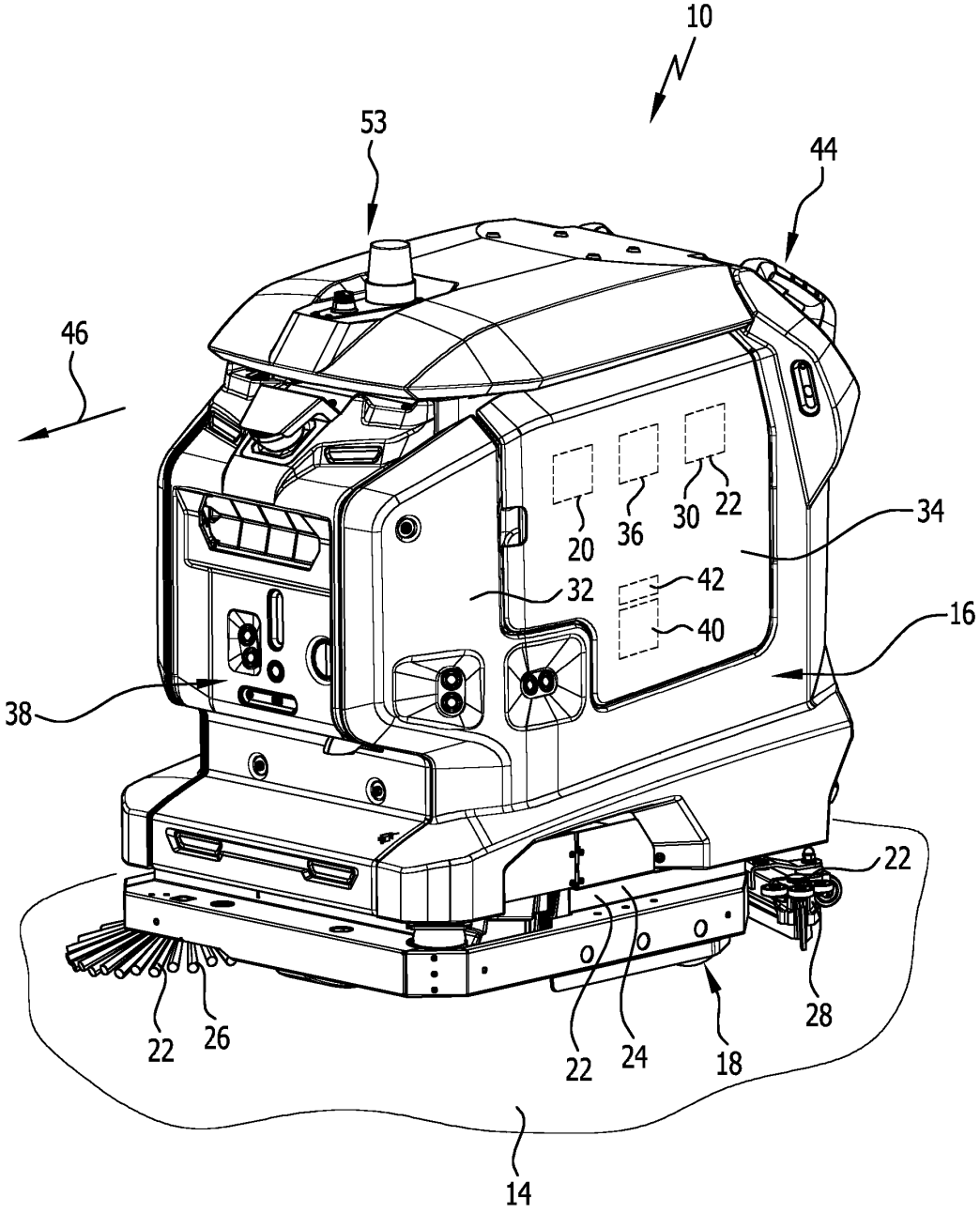
FIG.1



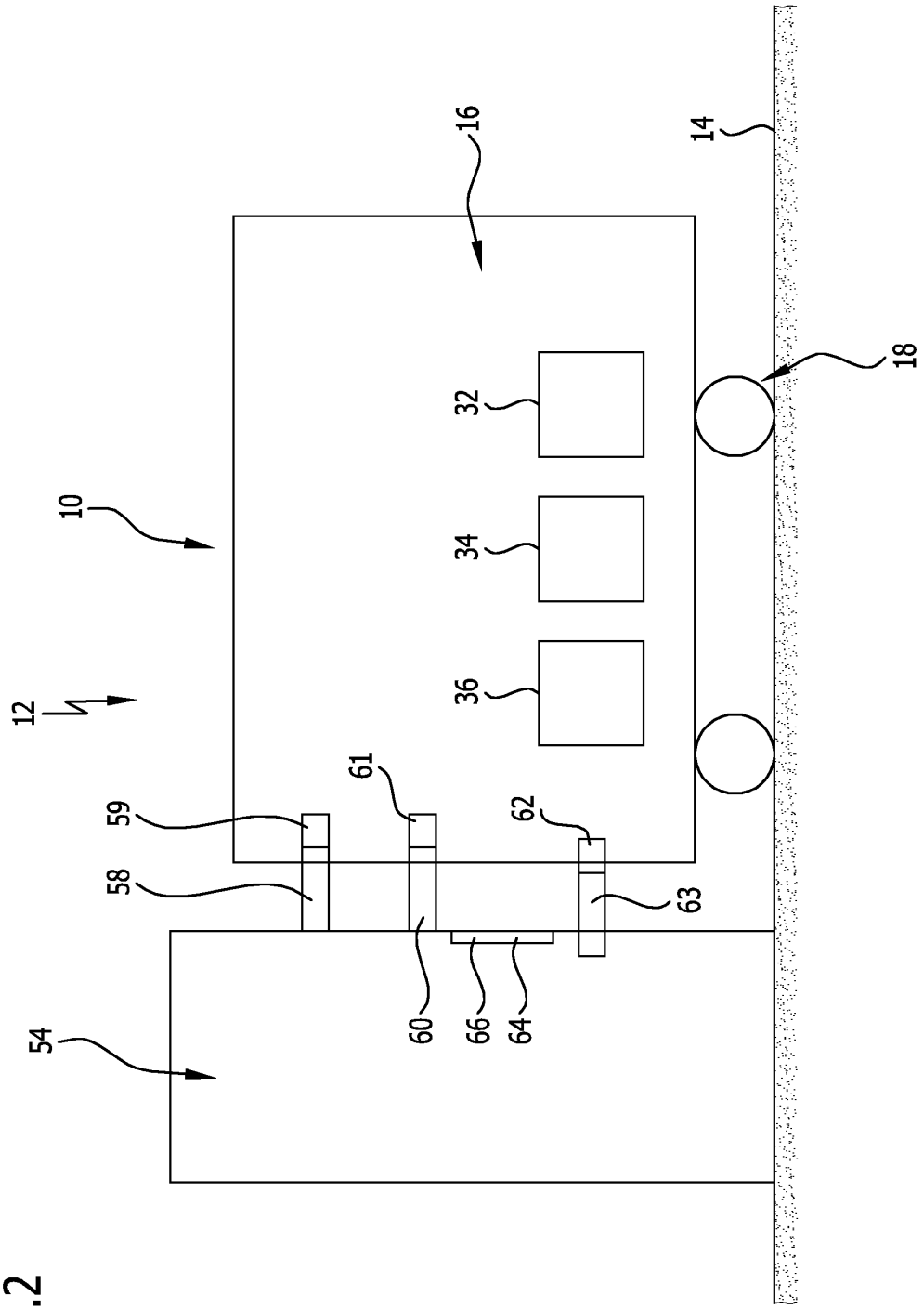


FIG.2

FIG.3A

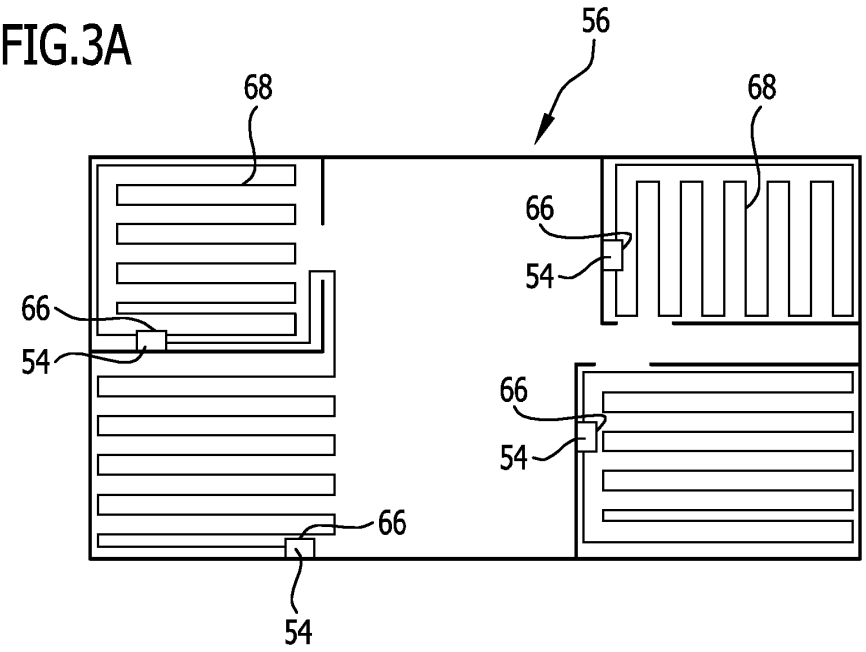


FIG.3B

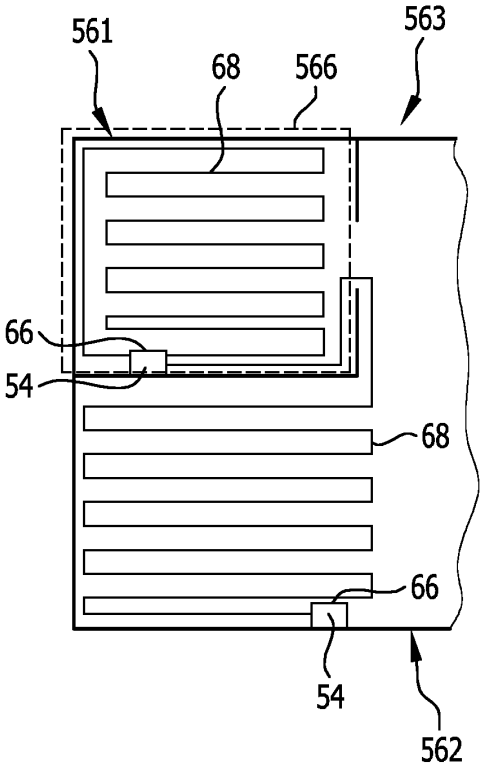


FIG.3C

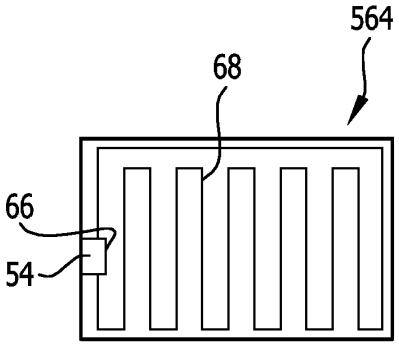
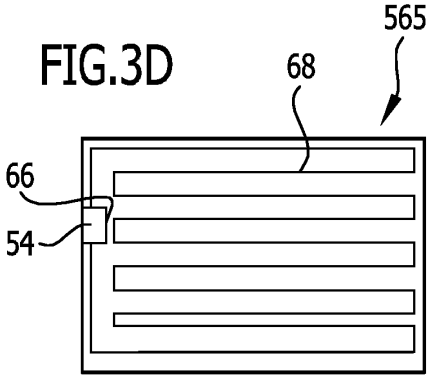


FIG.3D



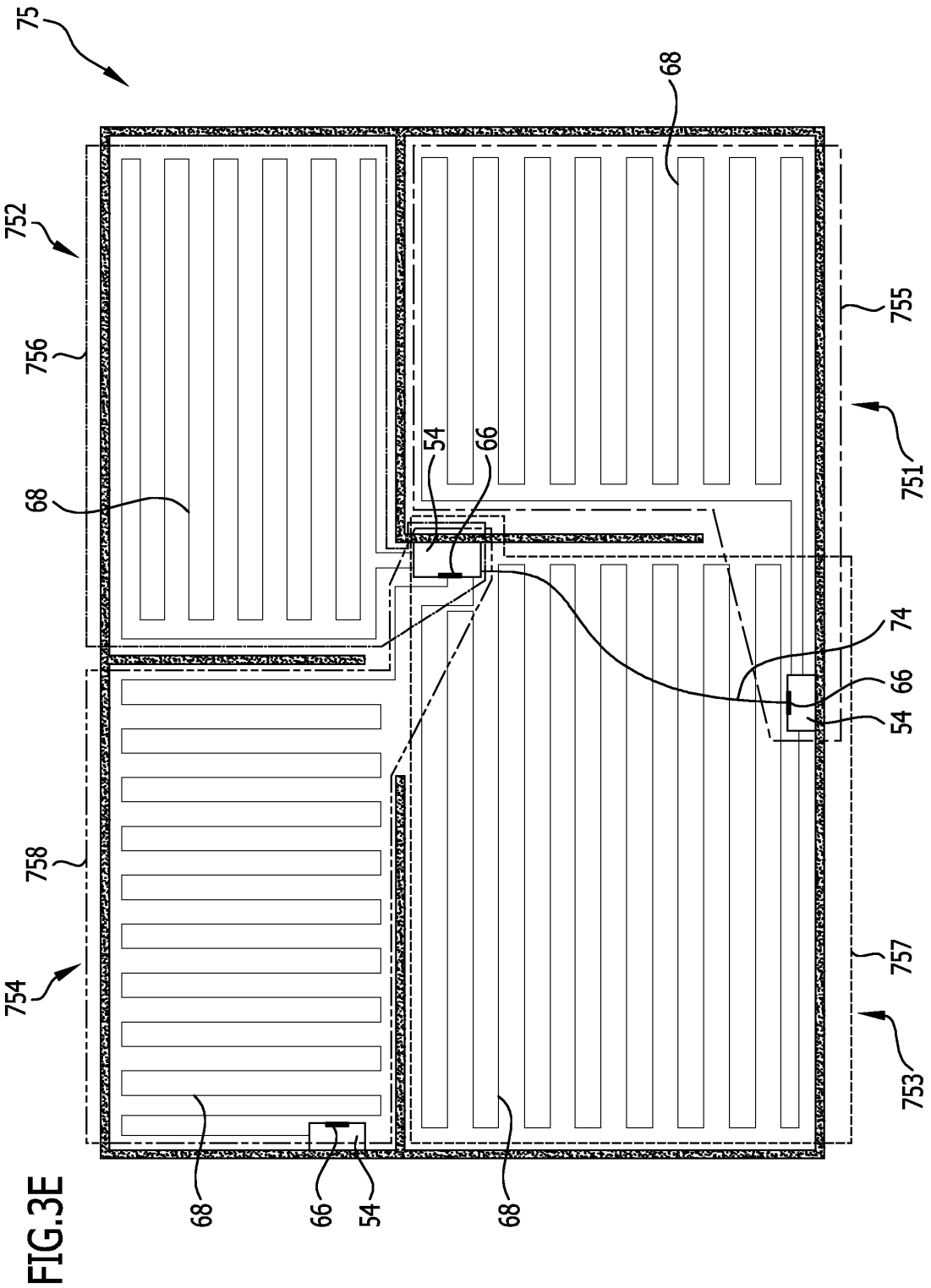


FIG.3E

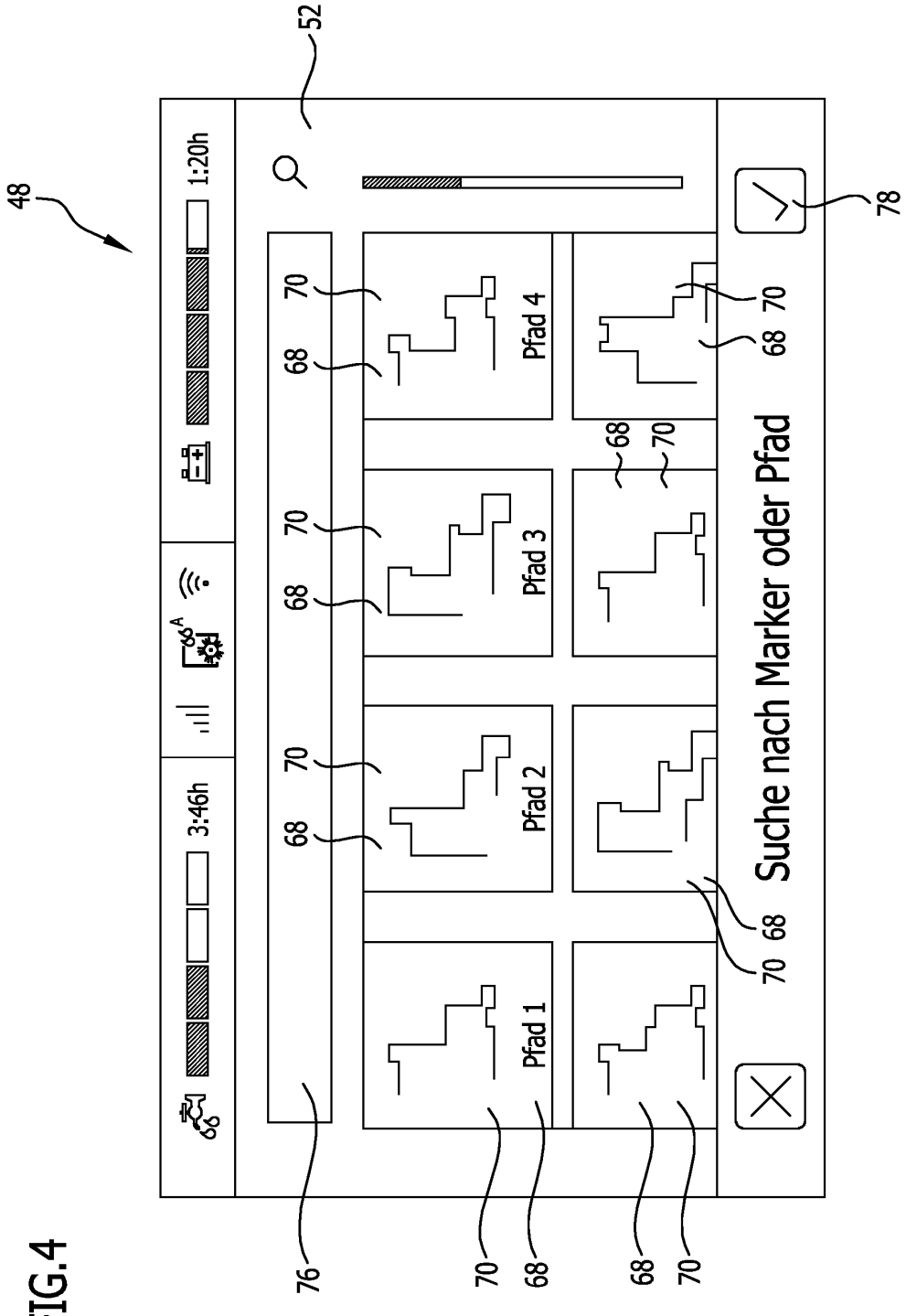

48
52
78
1:20h
3:46h
Pfad 1
Pfad 2
Pfad 3
Pfad 4
Suche nach Marker oder Pfad
68
70
76

FIG.4

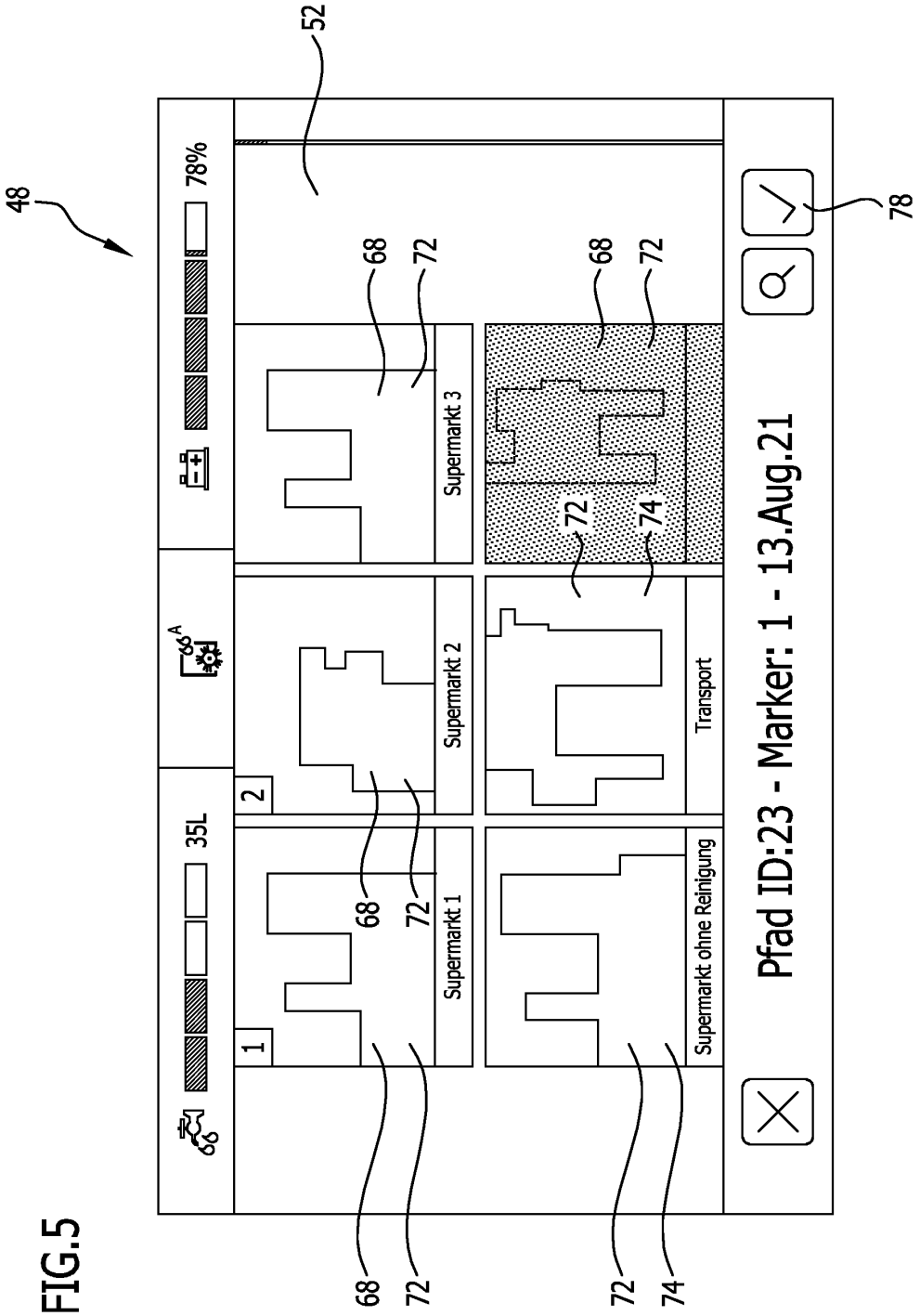

48
52
78%
35L
1
2
Supermarkt 1
Supermarkt 2
Supermarkt 3
Supermarkt ohne Reinigung
Transport
Pfad ID:23 - Marker: 1 - 13.Aug.21
68
72
74
78

FIG.5

FIG.6

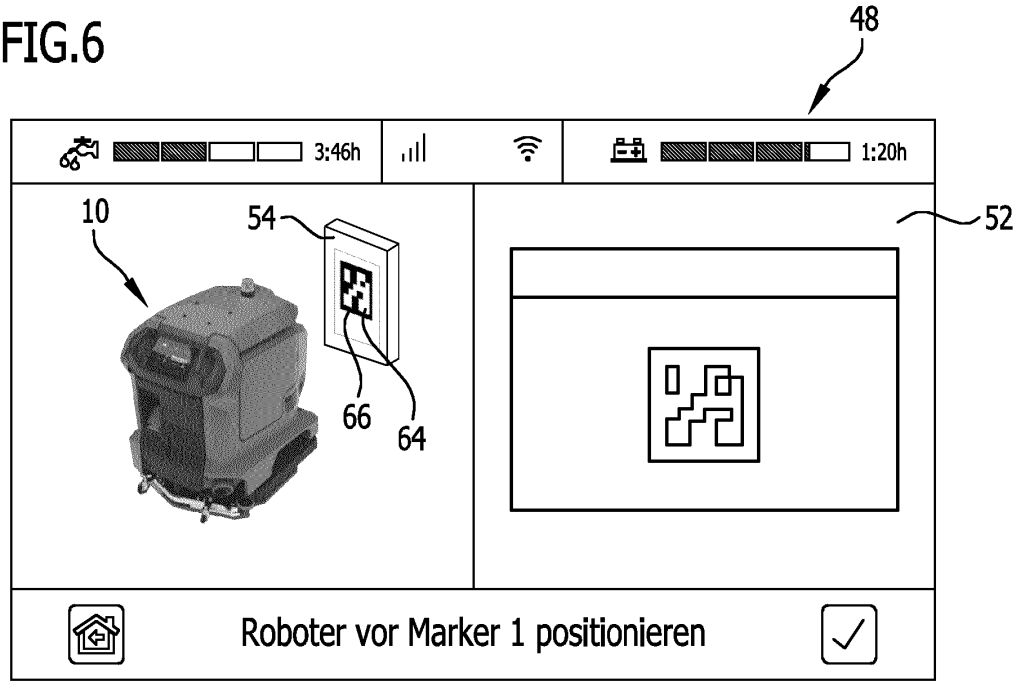
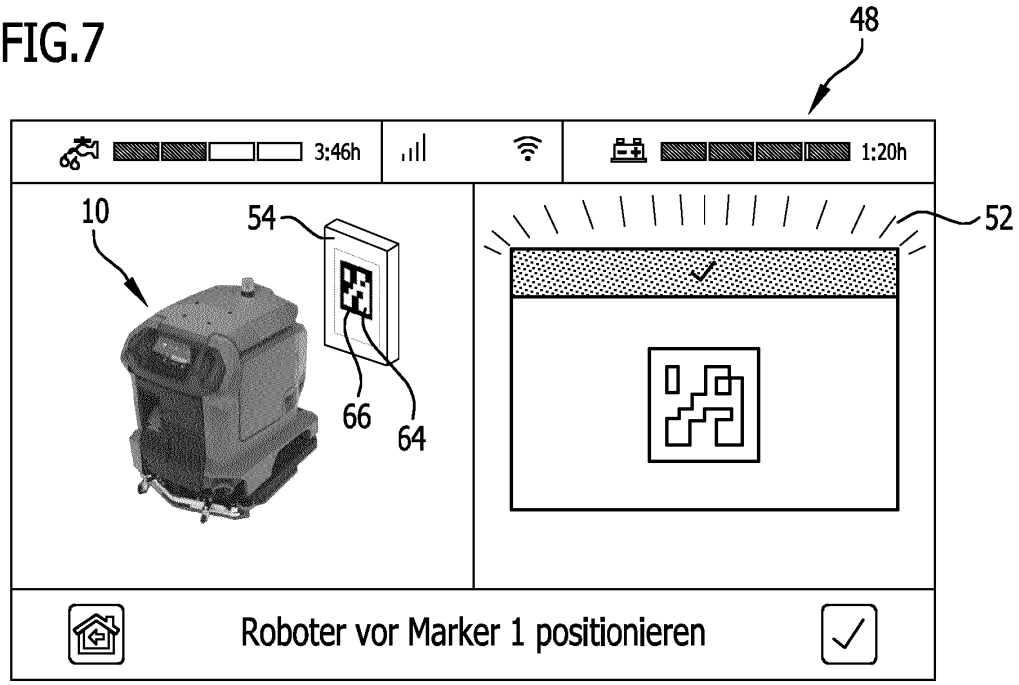

48
3:46h
1:20h
10
54
52
66
64
Roboter vor Marker 1 positionieren

FIG.7


48
3:46h
1:20h
10
54
52
66
64
Roboter vor Marker 1 positionieren

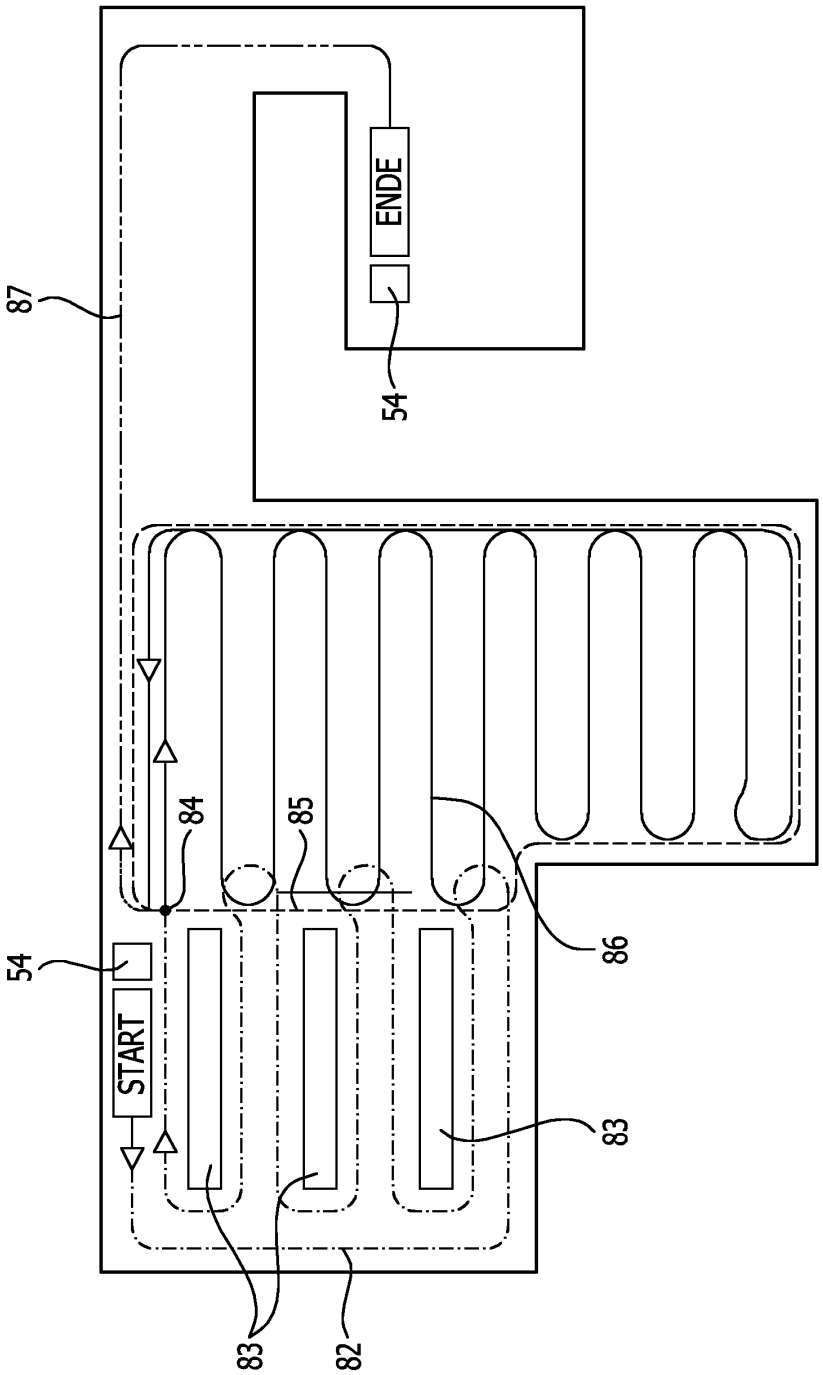


FIG.8

FIG.9

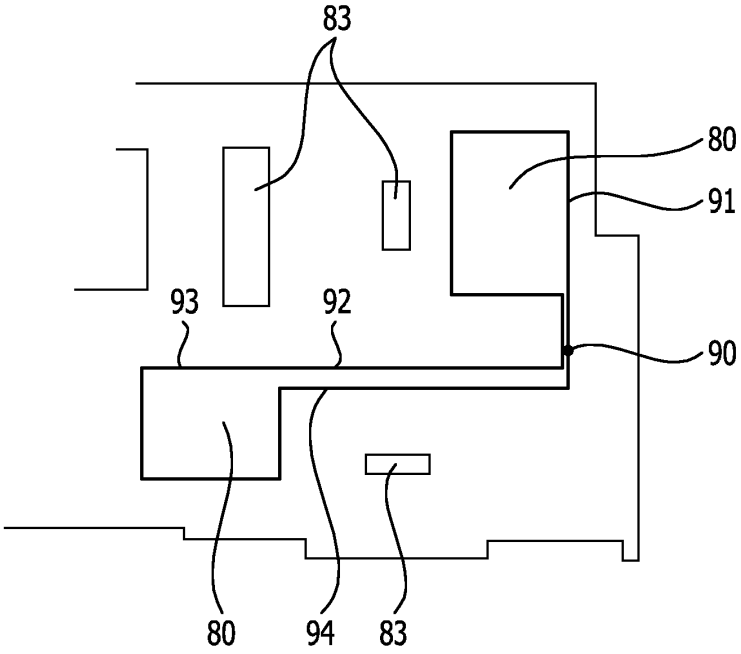
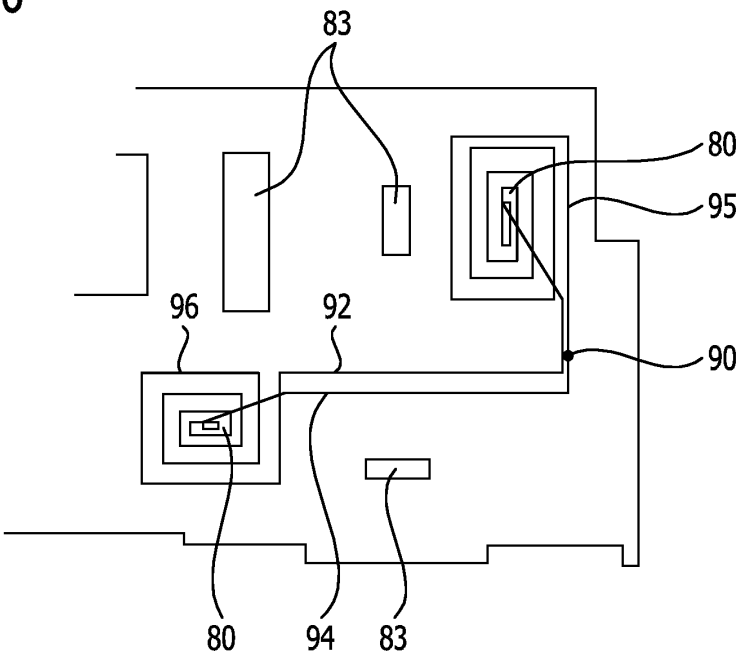


FIG.10



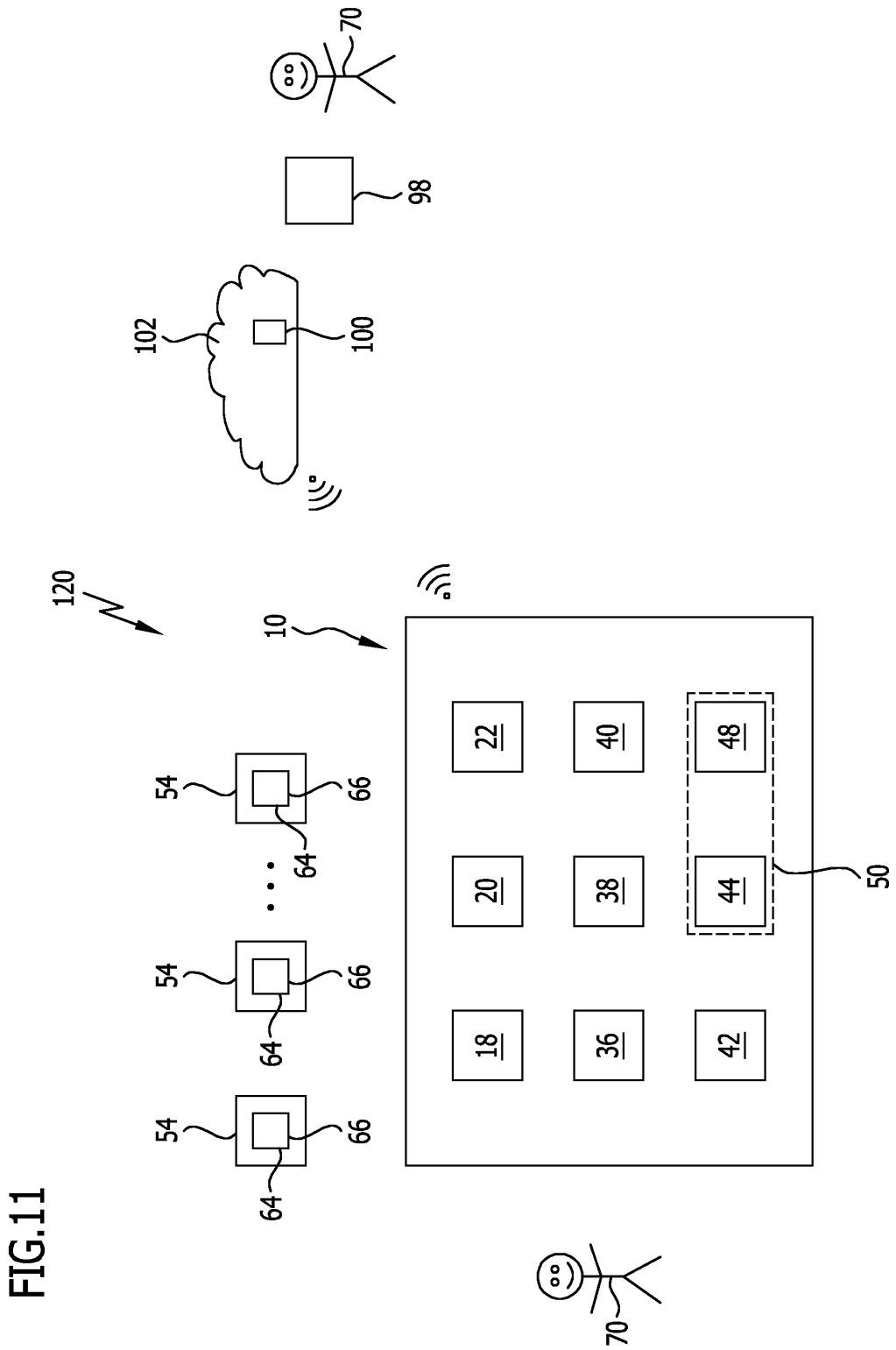

70
98
102
100
120
10
54
66
64
54
66
64
54
66
64
22
40
48
20
38
44
50
18
36
42
70

FIG.11