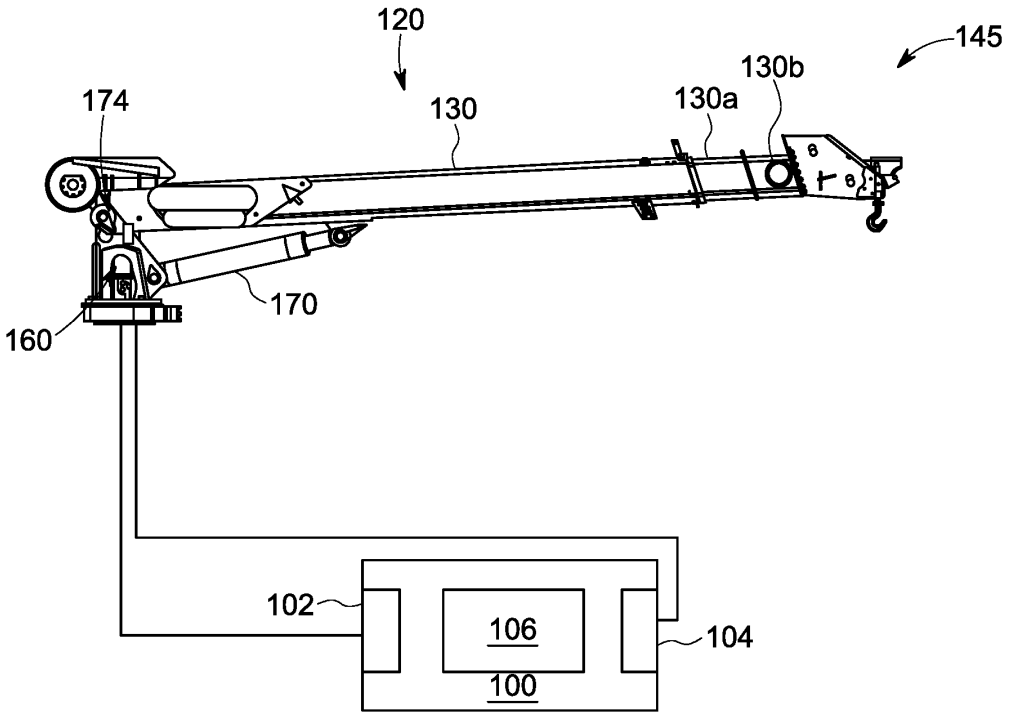

120
145
130b
174
130
130a
170
160
102
106
104
100

FIG. 1

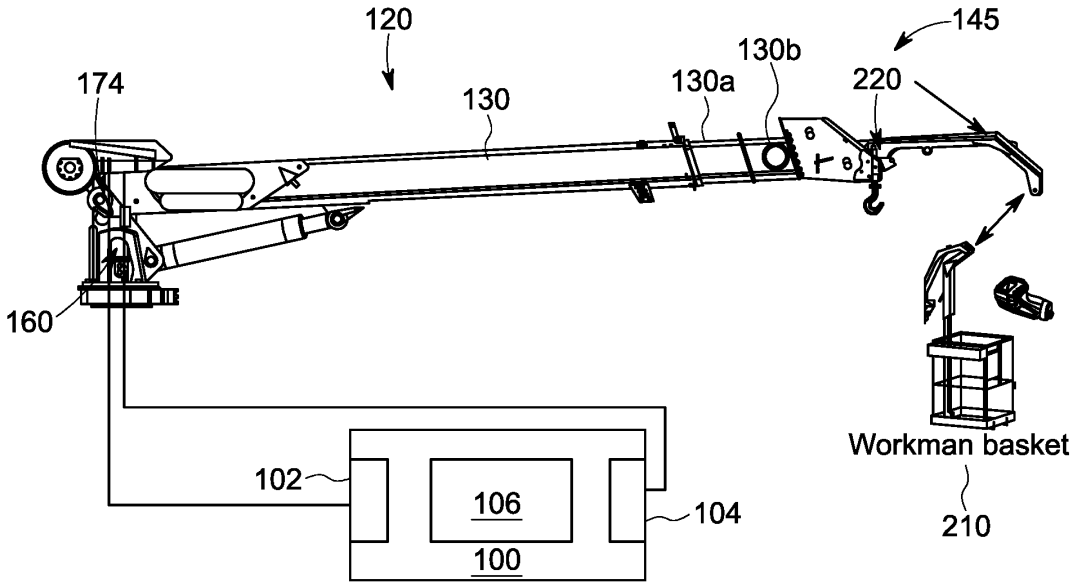

120
145
130b
174
130
130a
220
160
102
106
104
100
Workman basket
210

FIG. 2

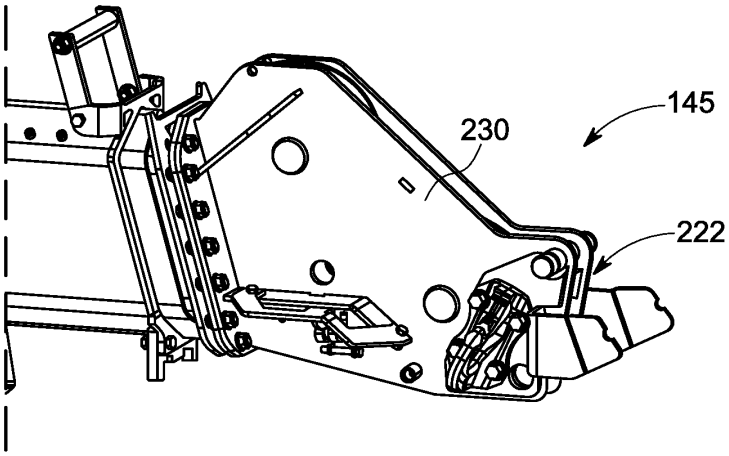


FIG. 3

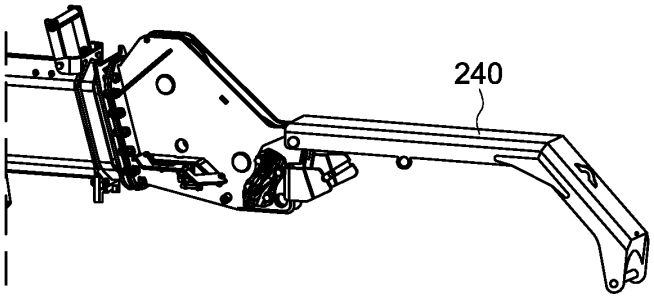


FIG. 4

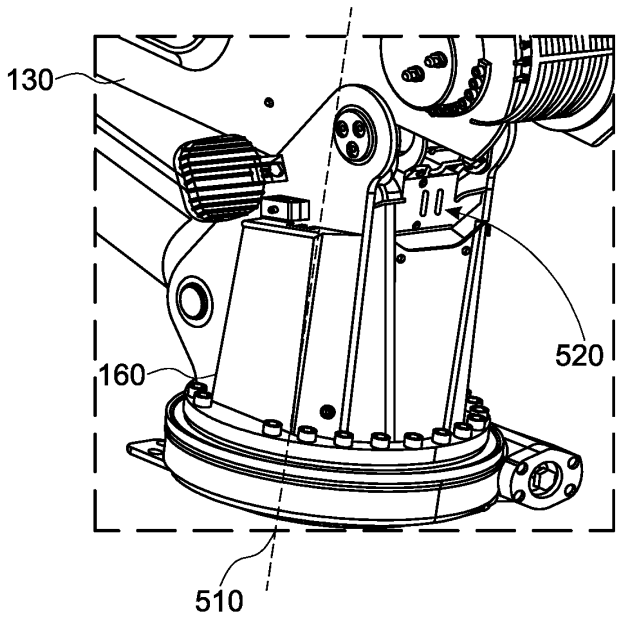

130
520
160
510

FIG. 5

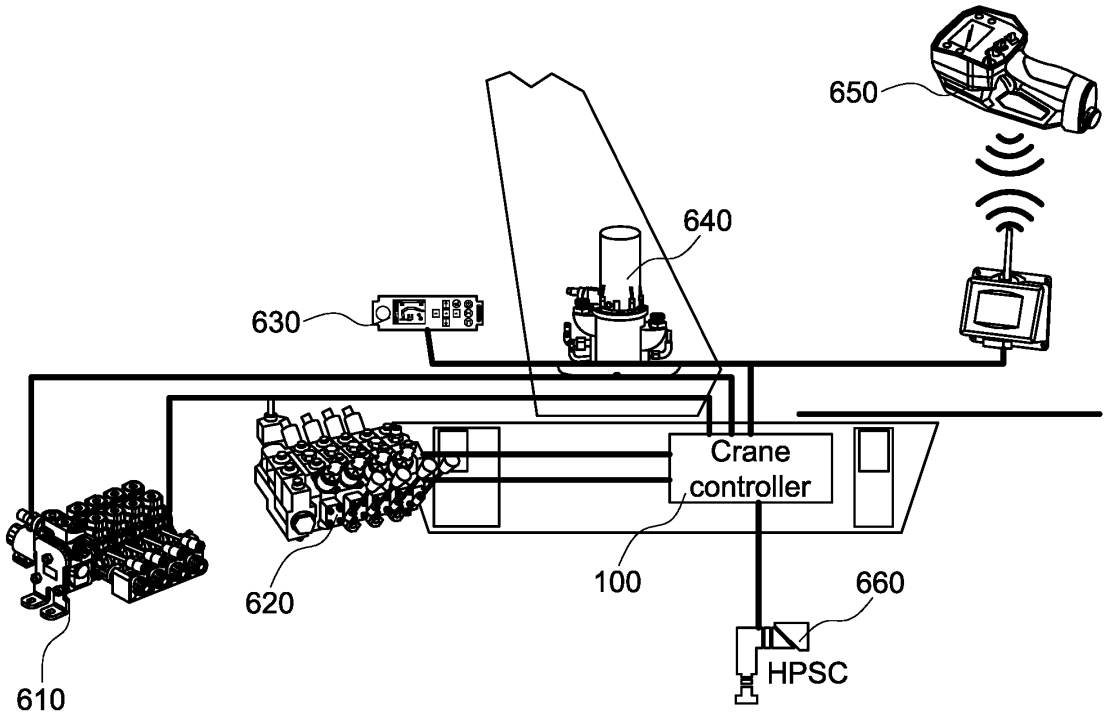

650
640
630
Crane controller
620
100
660
HPSC
610

FIG. 6

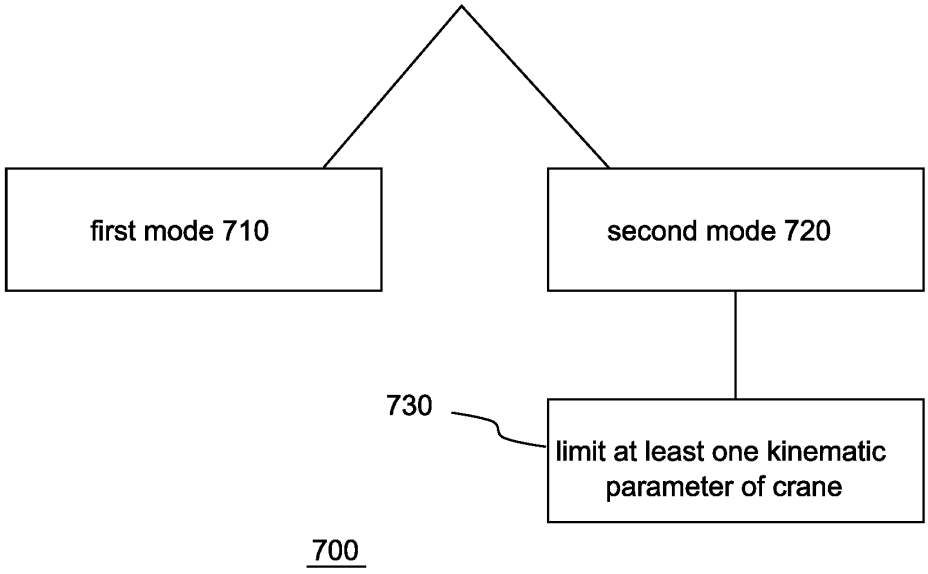

first mode 710
second mode 720
730
limit at least one kinematic parameter of crane
700

FIG. 7