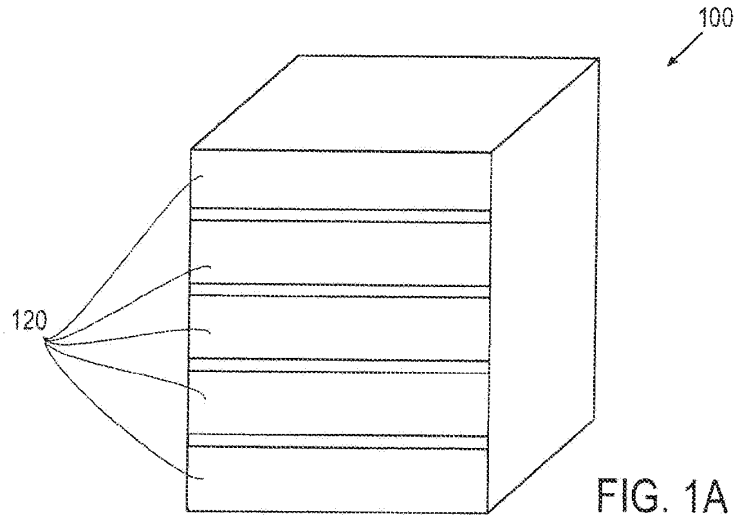


FIG. 1A

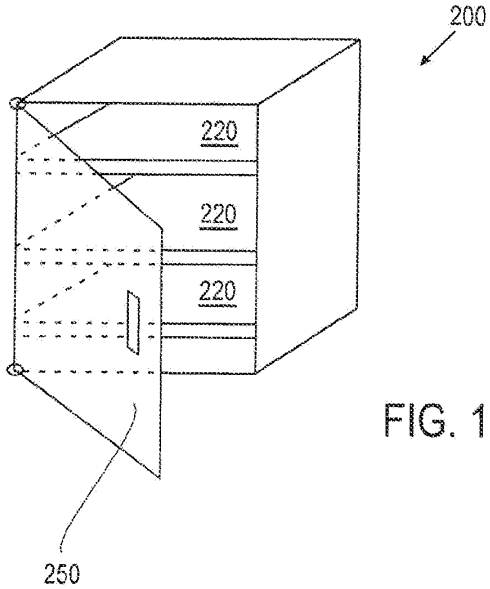


FIG. 1B

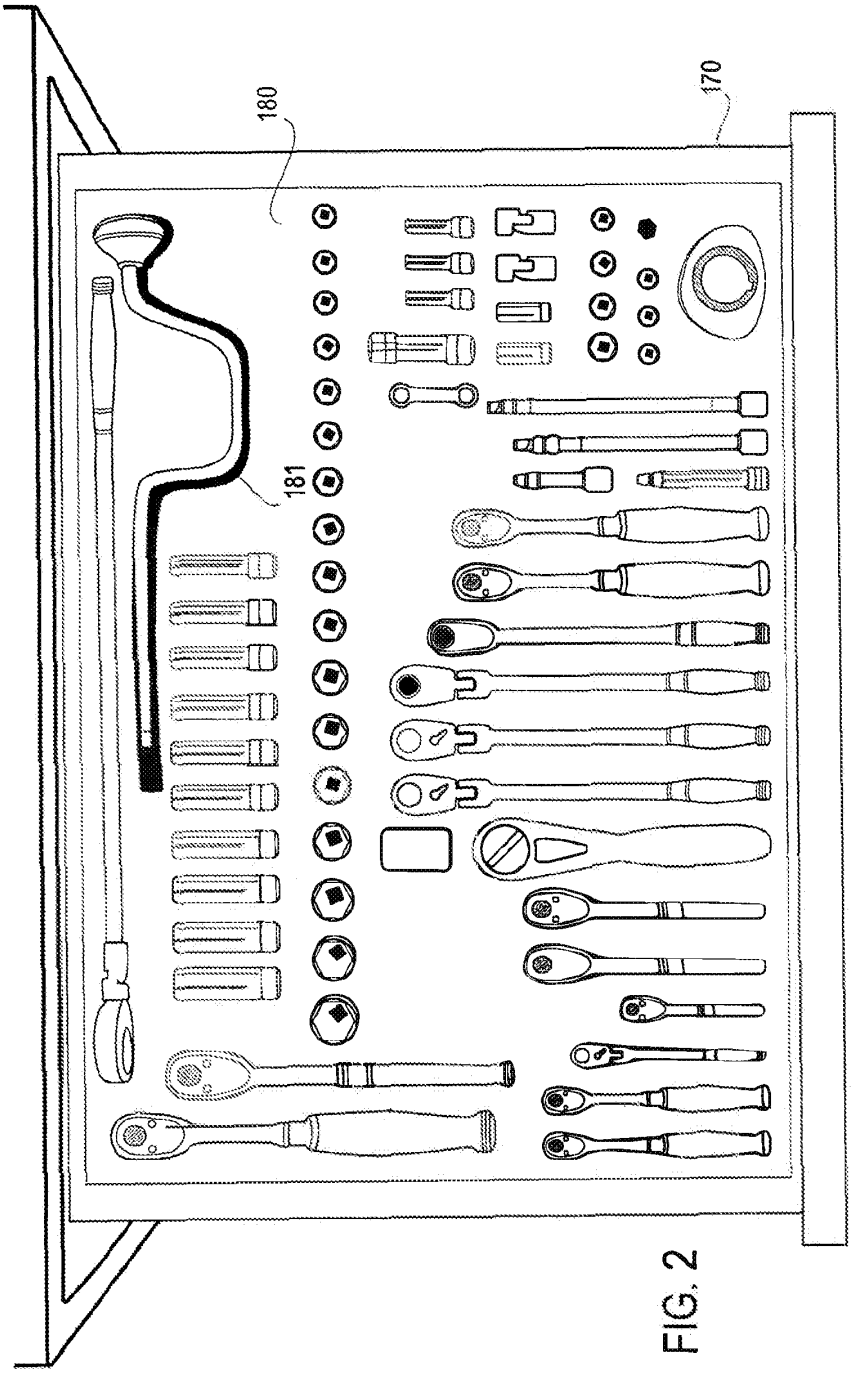


FIG. 2

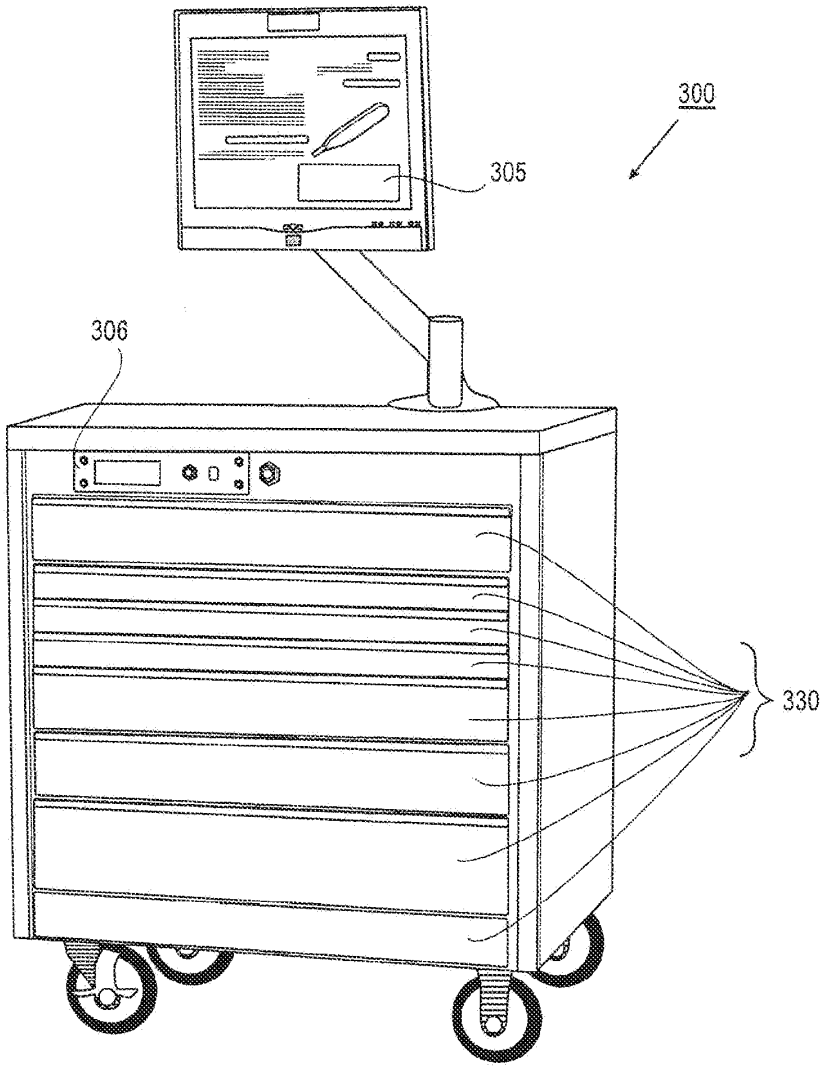


FIG. 3

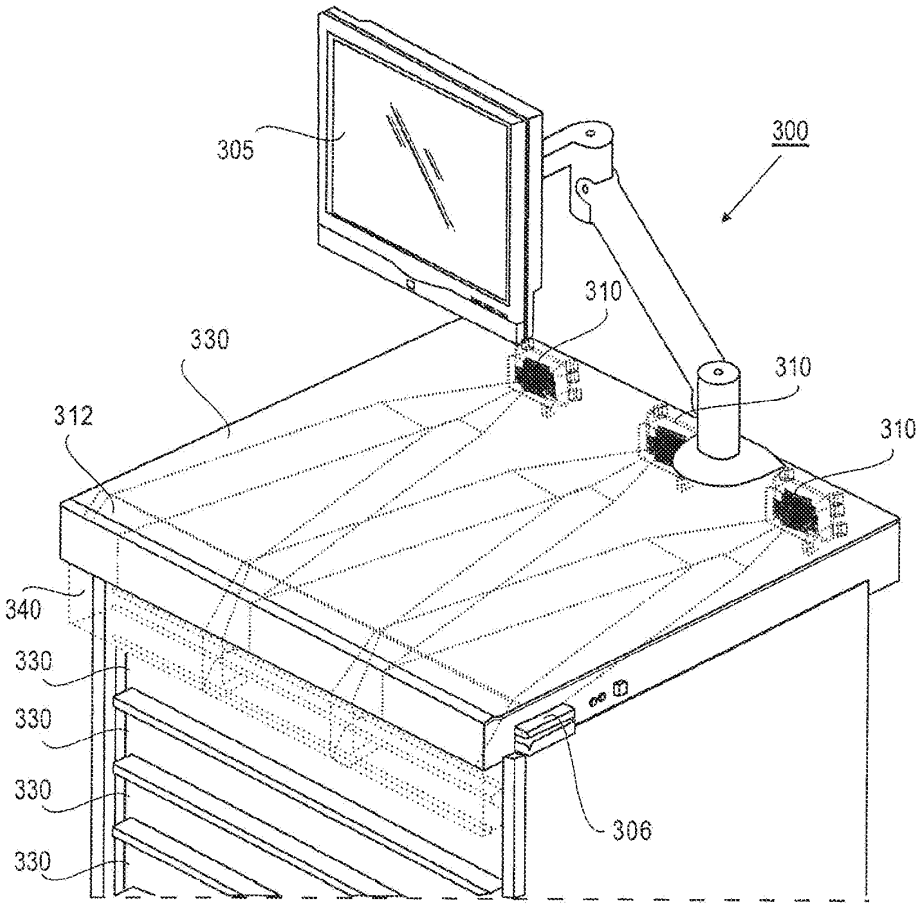


FIG. 4A

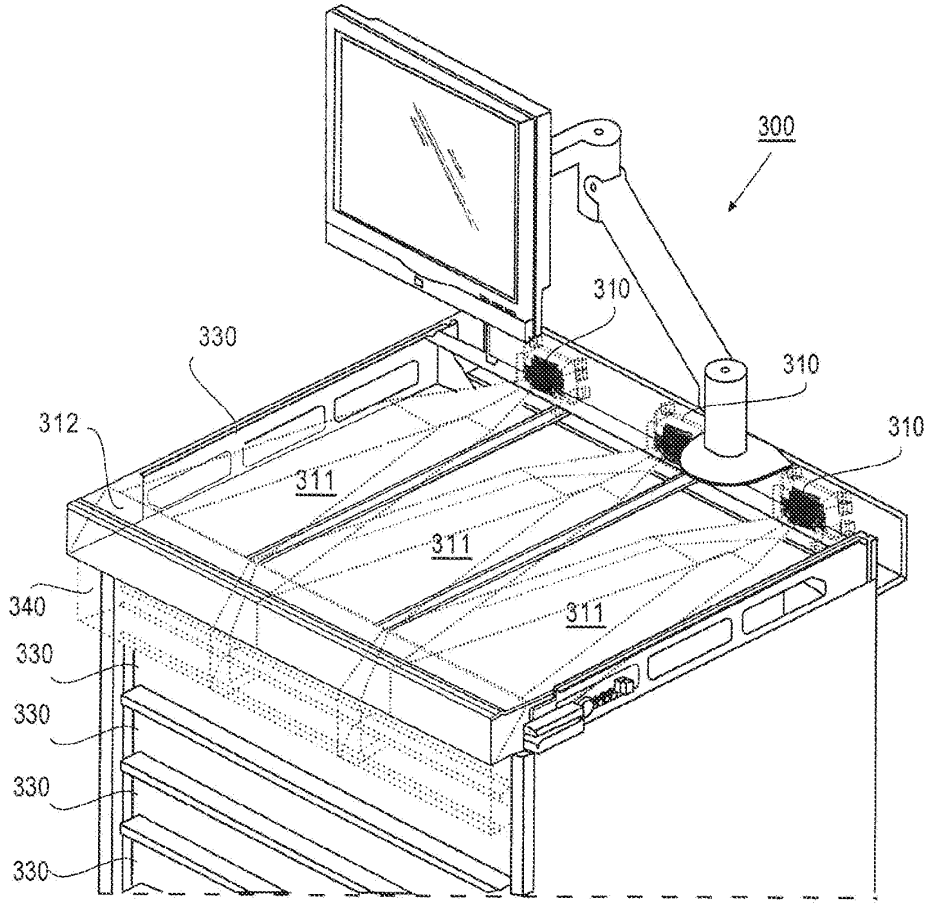


FIG. 4B

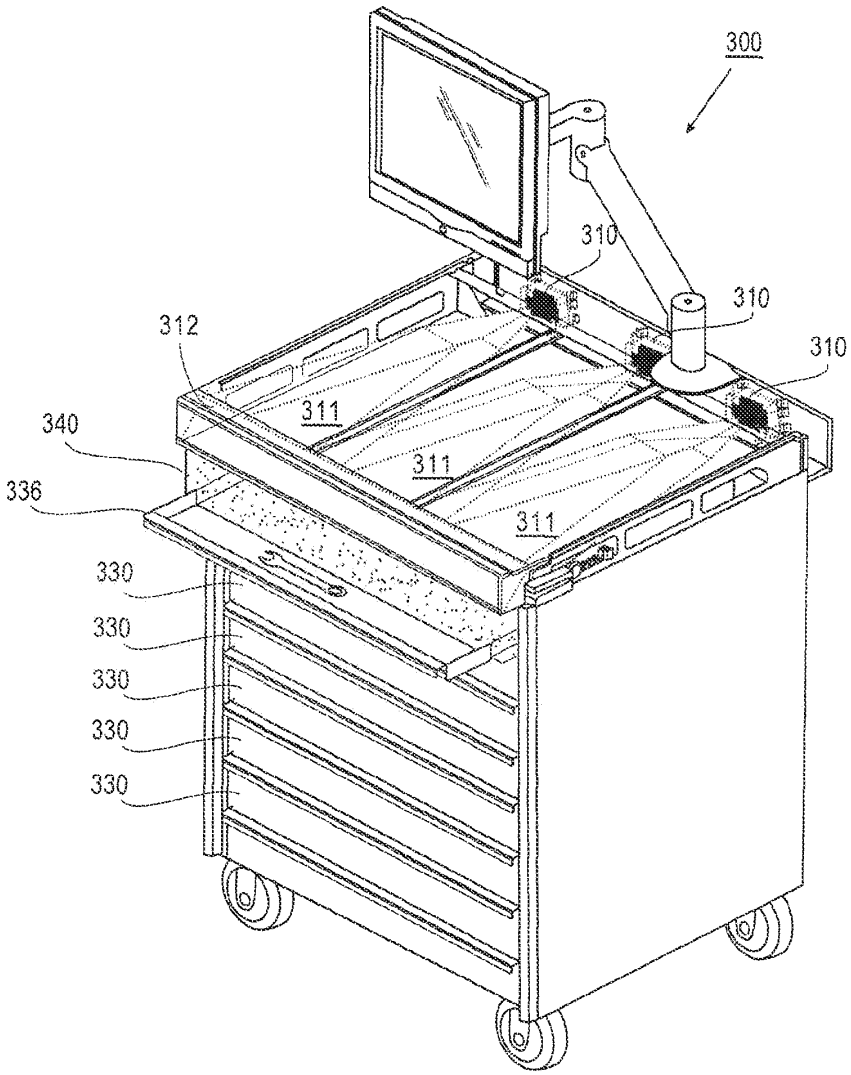


FIG. 4C

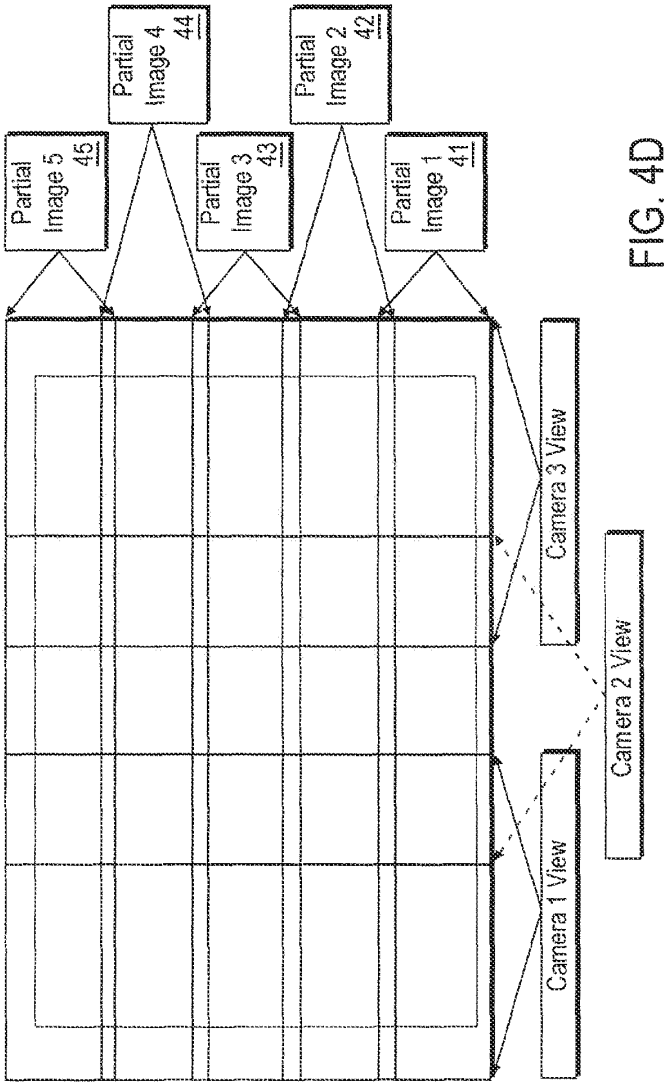

Partial Image 5 45
Partial Image 4 44
Partial Image 3 43
Partial Image 2 42
Partial Image 1 41
Camera 3 View
Camera 2 View
Camera 1 View

FIG. 4D

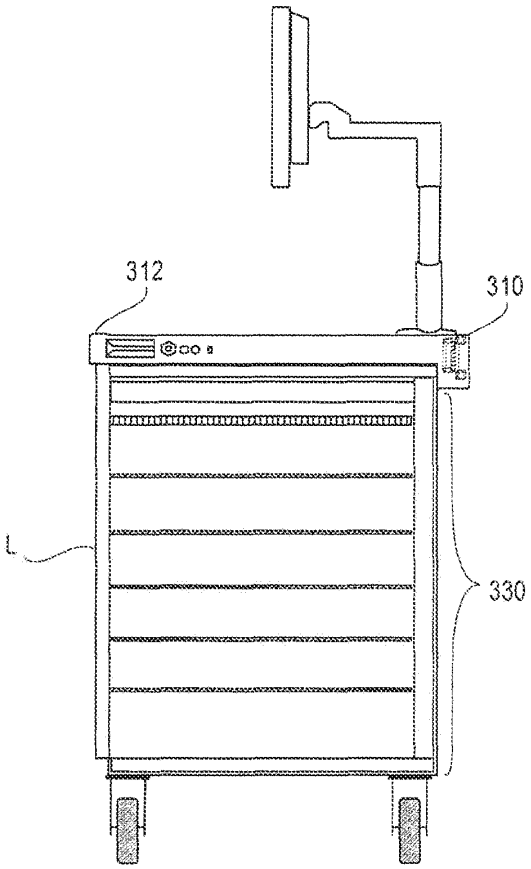


FIG. 4E

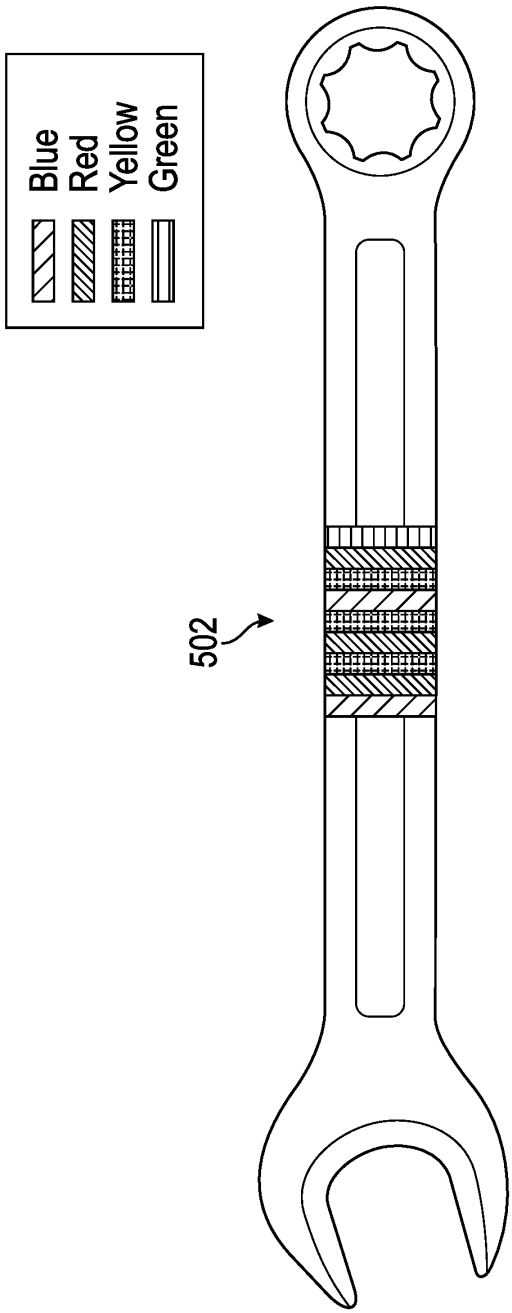


FIG. 5A

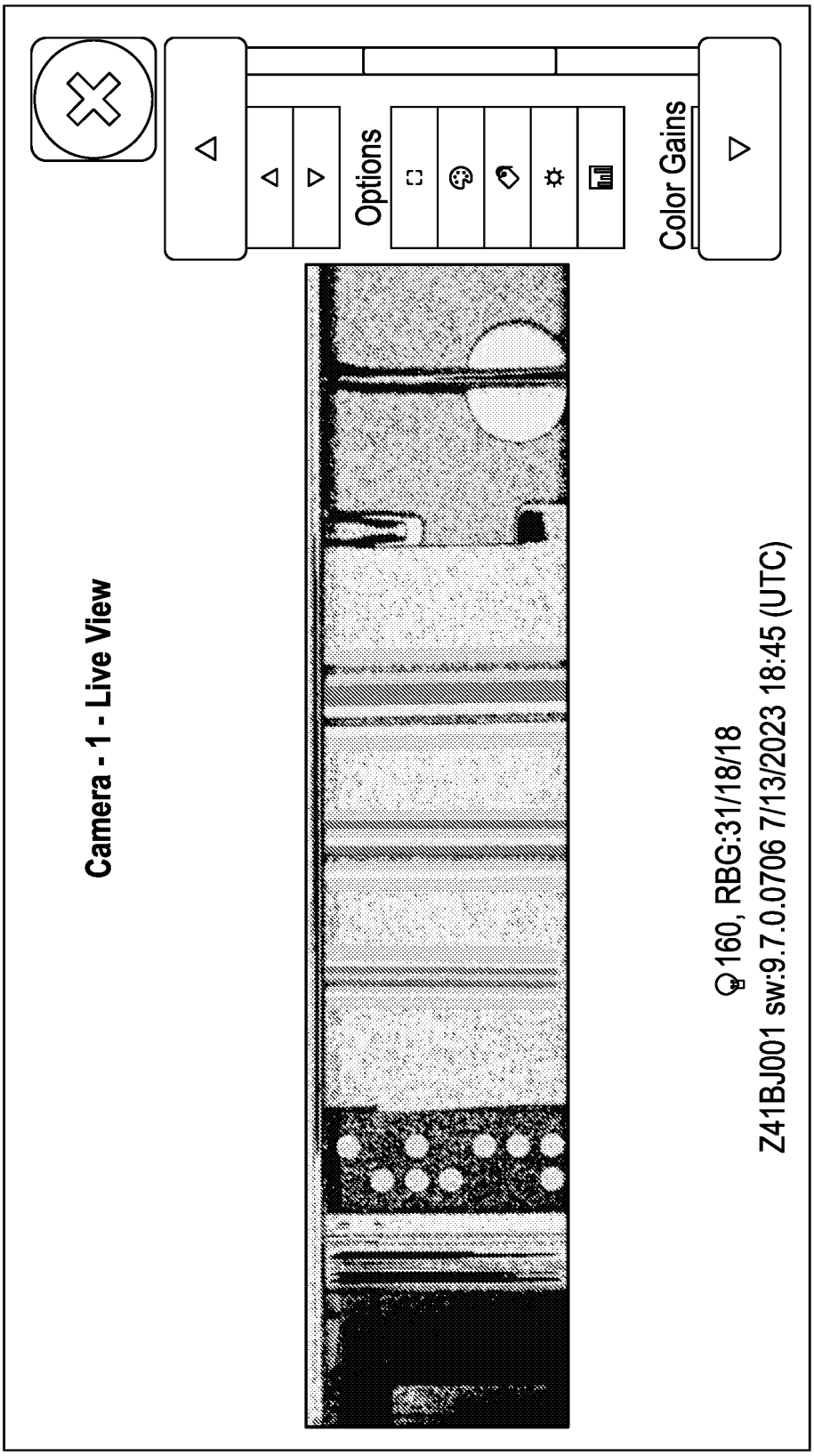

Options
Color Gains
Camera - 1 - Live View
160, RBG:31/18/18
Z41BJ001 sw:9.7.0.0706 7/13/2023 18:45 (UTC)

FIG. 5B

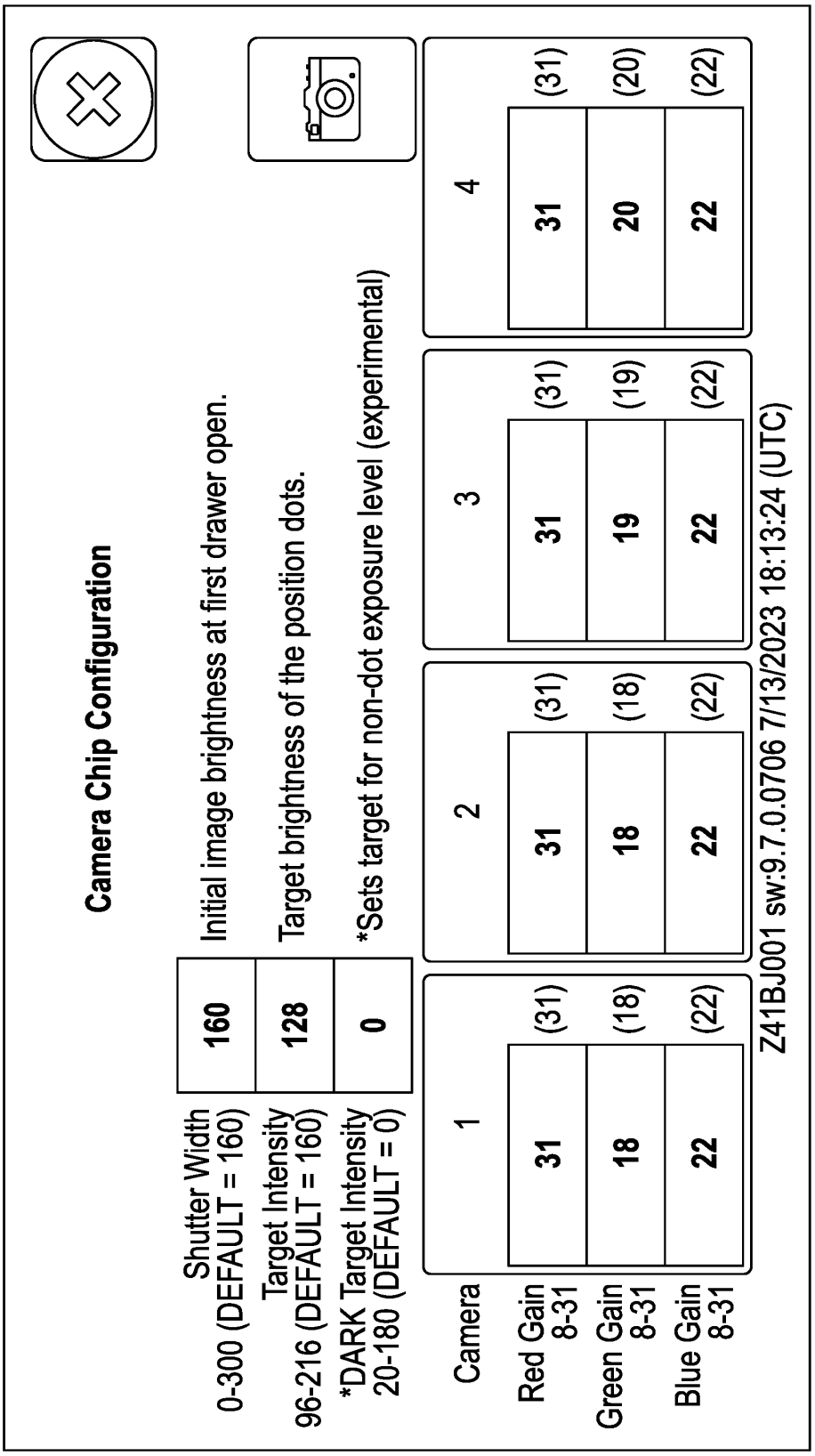

Camera Chip Configuration
Shutter Width
0-300 (DEFAULT = 160)
160
Initial image brightness at first drawer open.
Target Intensity
96-216 (DEFAULT = 160)
128
Target brightness of the position dots.
*DARK Target Intensity
20-180 (DEFAULT = 0)
0
*Sets target for non-dot exposure level (experimental)
Camera
1
2
3
4
Red Gain
8-31
31 (31)
31 (31)
31 (31)
31 (31)
Green Gain
8-31
18 (18)
18 (18)
19 (19)
20 (20)
Blue Gain
8-31
22 (22)
22 (22)
22 (22)
22 (22)
Z41BJ001 sw:9.7.0.0706 7/13/2023 18:13:24 (UTC)

FIG. 5C

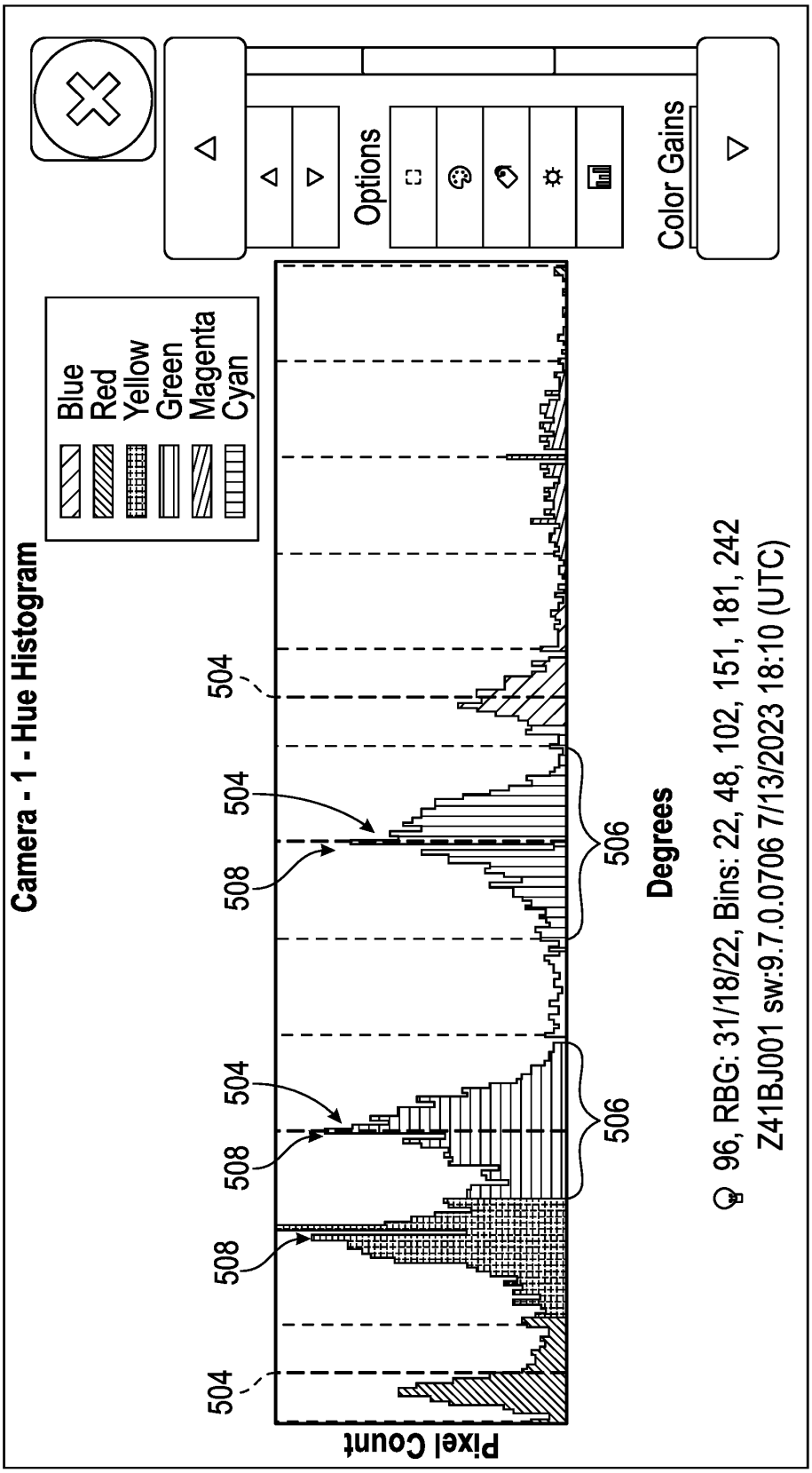

Camera - 1 - Hue Histogram
Blue
Red
Yellow
Green
Magenta
Cyan
Options
Color Gains
Pixel Count
Degrees
504
508
506
96, RBG: 31/18/22, Bins: 22, 48, 102, 151, 181, 242
Z41BJ001 sw:9.7.0.0706 7/13/2023 18:10 (UTC)

FIG. 5D

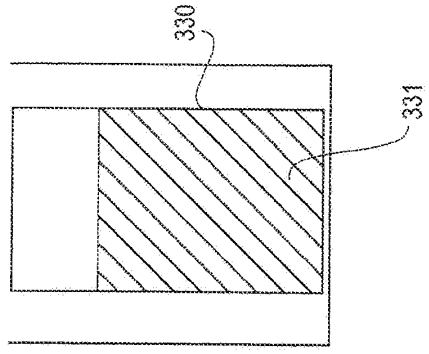


FIG. 6C

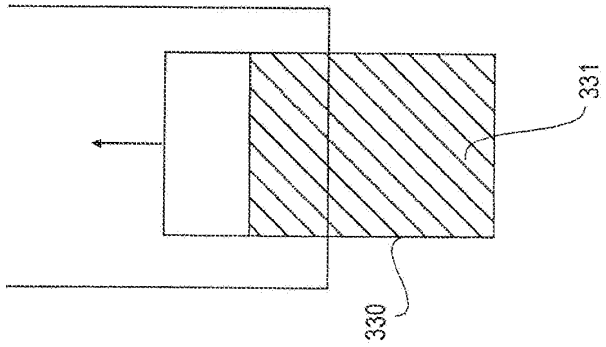


FIG. 6B

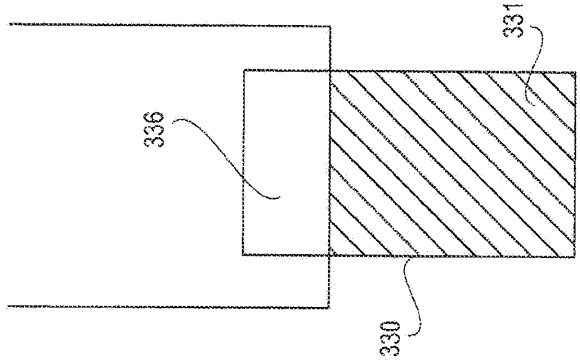


FIG. 6A

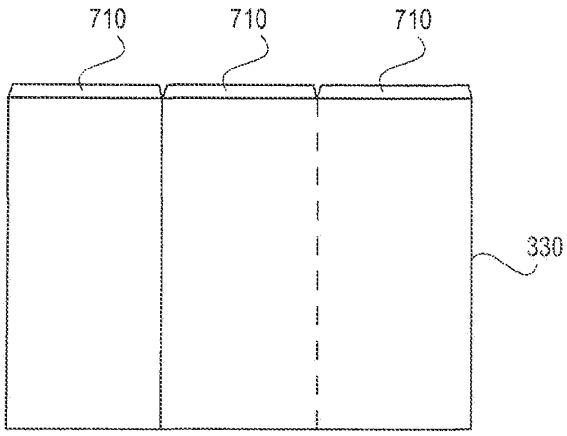


FIG. 7A

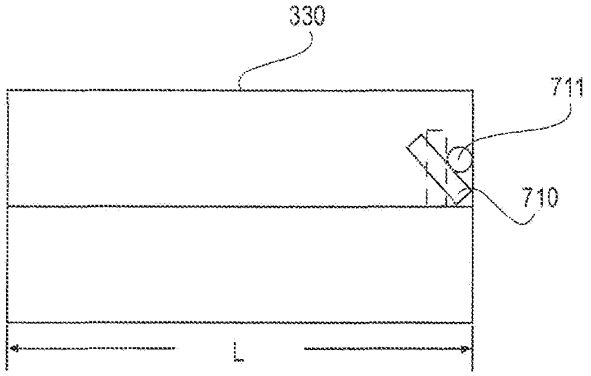


FIG. 7B

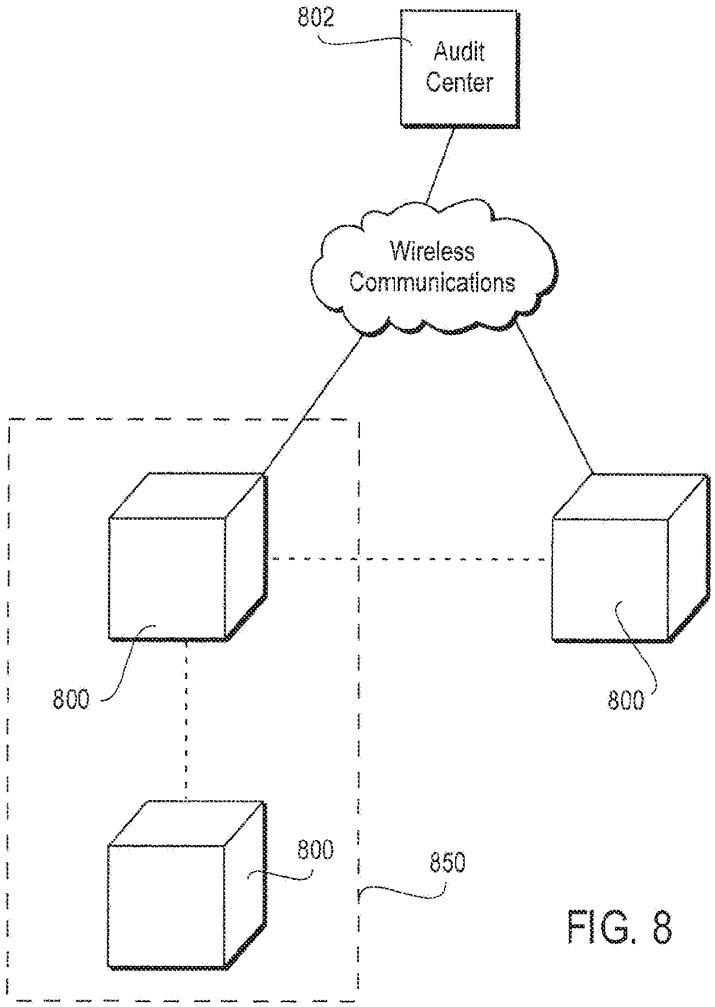


FIG. 8

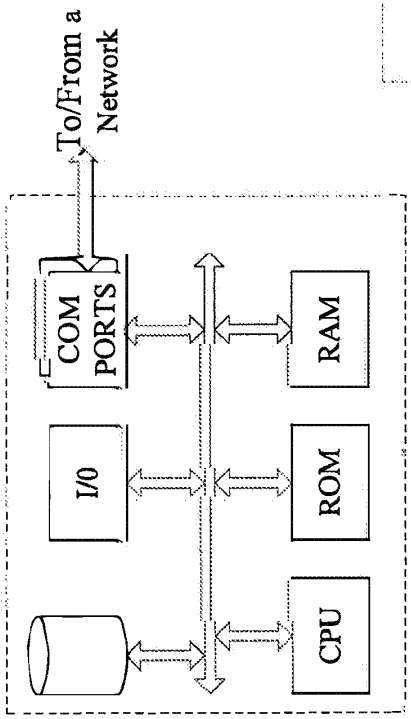

To/From a Network
COM PORTS
I/O
CPU
RAM
ROM

FIG. 9

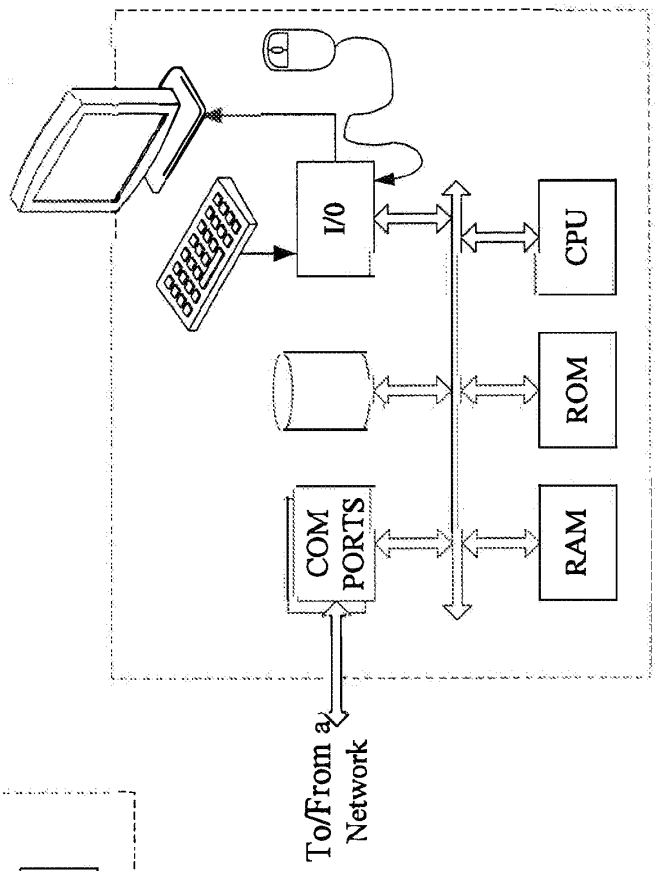

To/From a Network
COM PORTS
I/O
CPU
RAM
ROM

FIG. 10

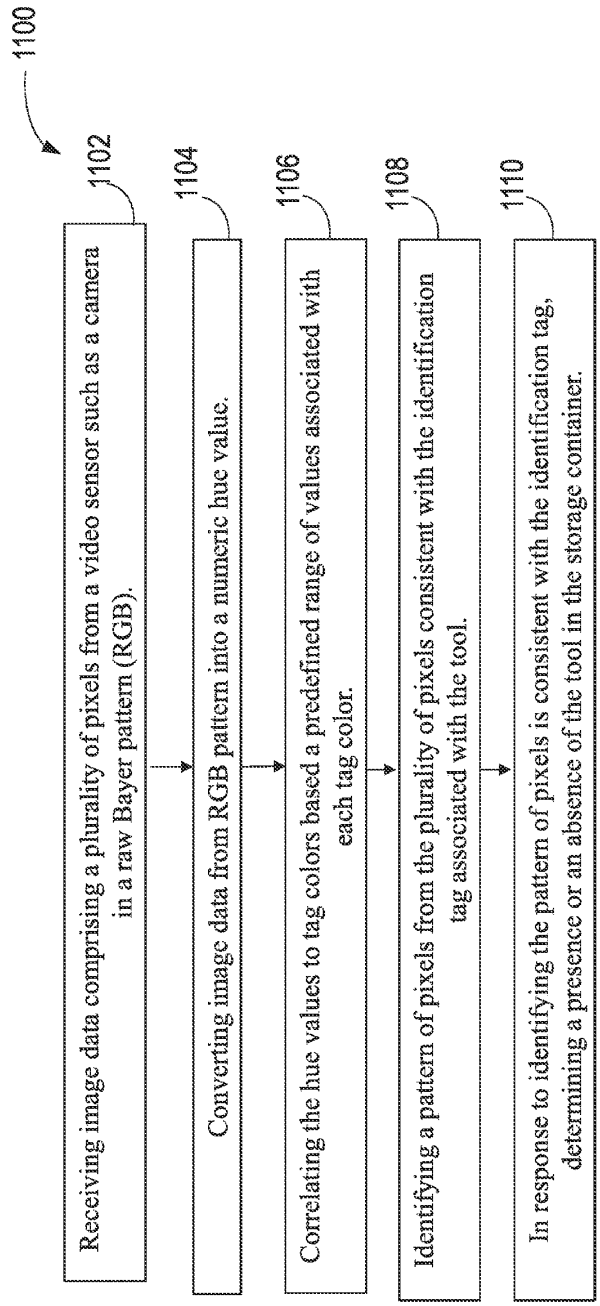

1100
1102
Receiving image data comprising a plurality of pixels from a video sensor such as a camera in a raw Bayer pattern (RGB).
1104
Converting image data from RGB pattern into a numeric hue value.
1106
Correlating the hue values to tag colors based a predefined range of values associated with each tag color.
1108
Identifying a pattern of pixels from the plurality of pixels consistent with the identification tag associated with the tool.
1110
In response to identifying the pattern of pixels is consistent with the identification tag, determining a presence or an absence of the tool in the storage container.

FIG. 11