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(54) **ADJUSTABLE-ORIENTATION RFID TAG
READER SYSTEMS AND METHODS OF
THEIR OPERATION**

(52) **U.S. Cl. 340/3.1**

(57) **ABSTRACT**

(75) Inventor: **Panchapakesan V. SUBRAMANIAN,**
Frederick, MD (US)

Embodiments include a radio frequency identification (RFID) tag reader system and methods of its operation. The system includes a drive system and an RFID tag reader. The RFID tag reader includes a directional antenna configured to receive RF signals within a radiowave beam (e.g. RFID tag response signals from RFID tags when the RFID tags are within an area encompassed by the radiowave beam). An embodiment of the system also includes a camera configured to capture images within a field of view. The drive system is coupled to the directional antenna and the camera, and is configured to change physical orientations of the directional antenna and the camera with respect to a fixed coordinate system, resulting in adjustments to angular orientations of the radiowave beam and the field of view with respect to the fixed coordinate system.

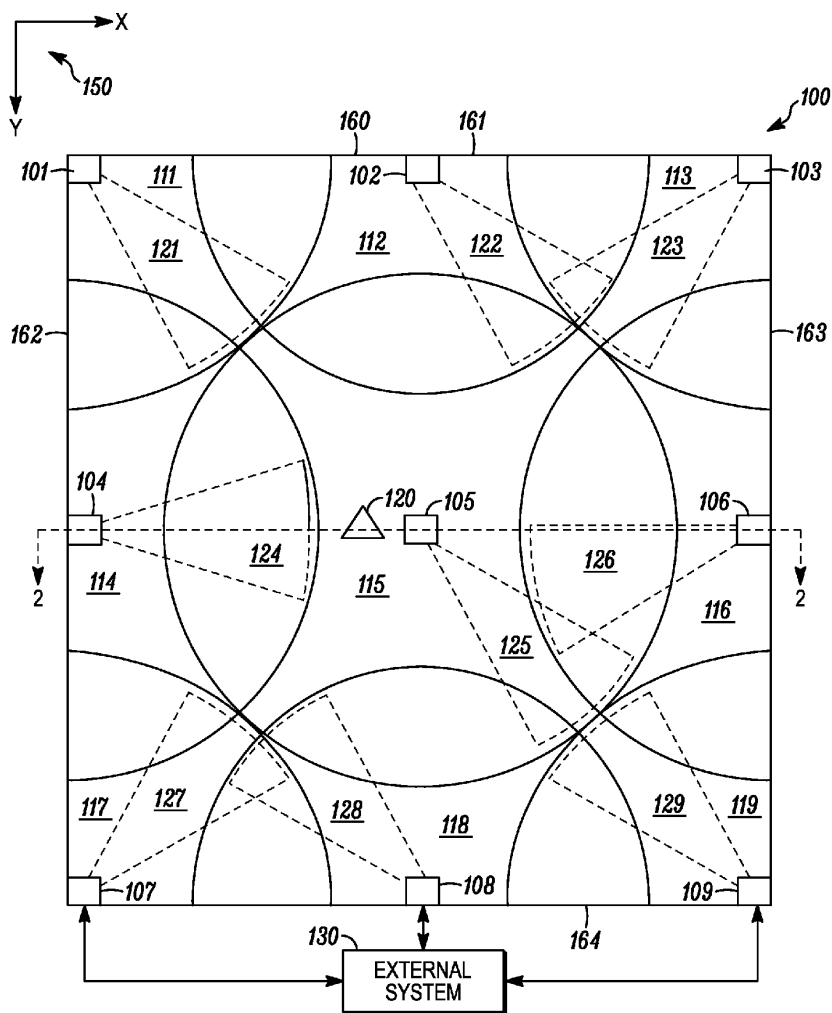
(73) Assignee: **SYMBOL TECHNOLOGIES, INC.,**
Holtsville, NY (US)

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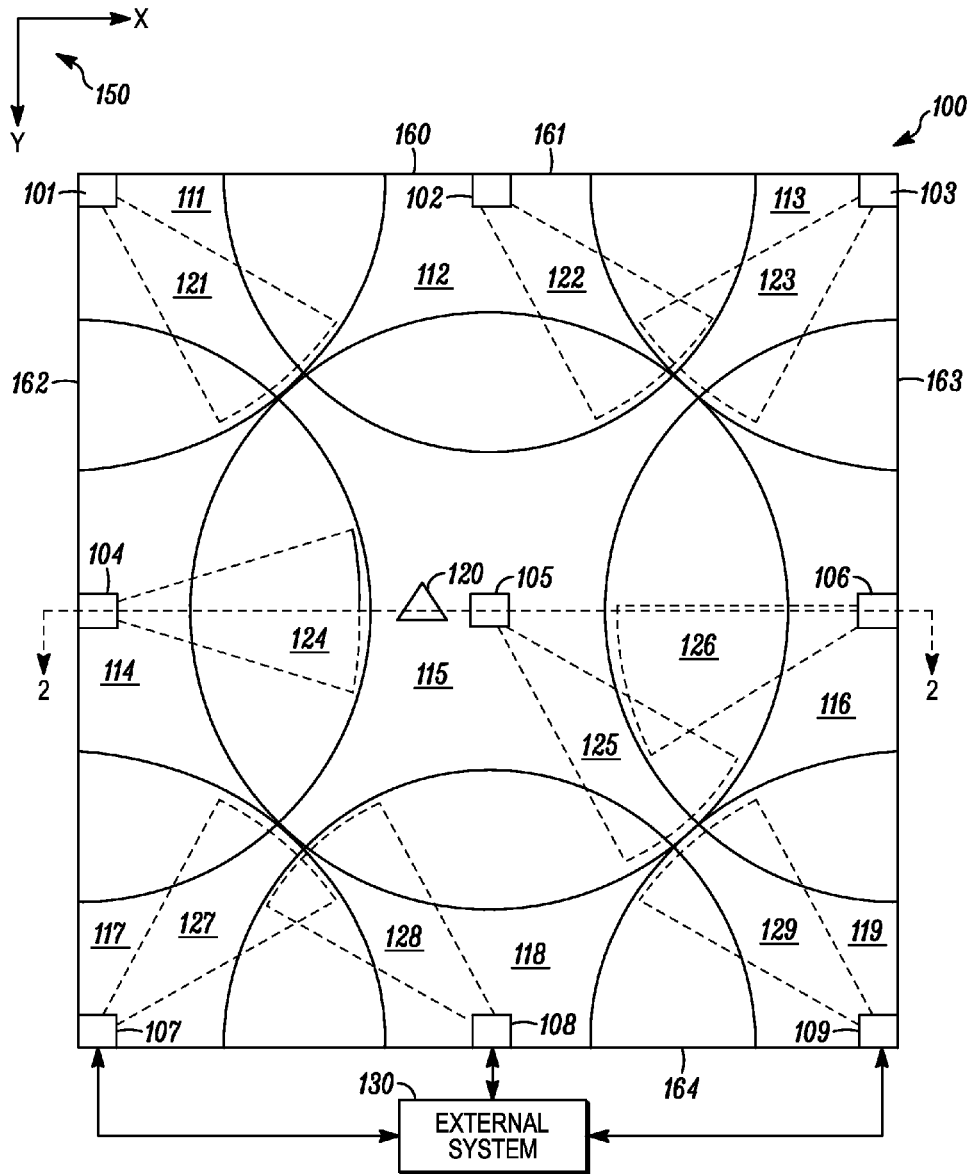


FIG. 1

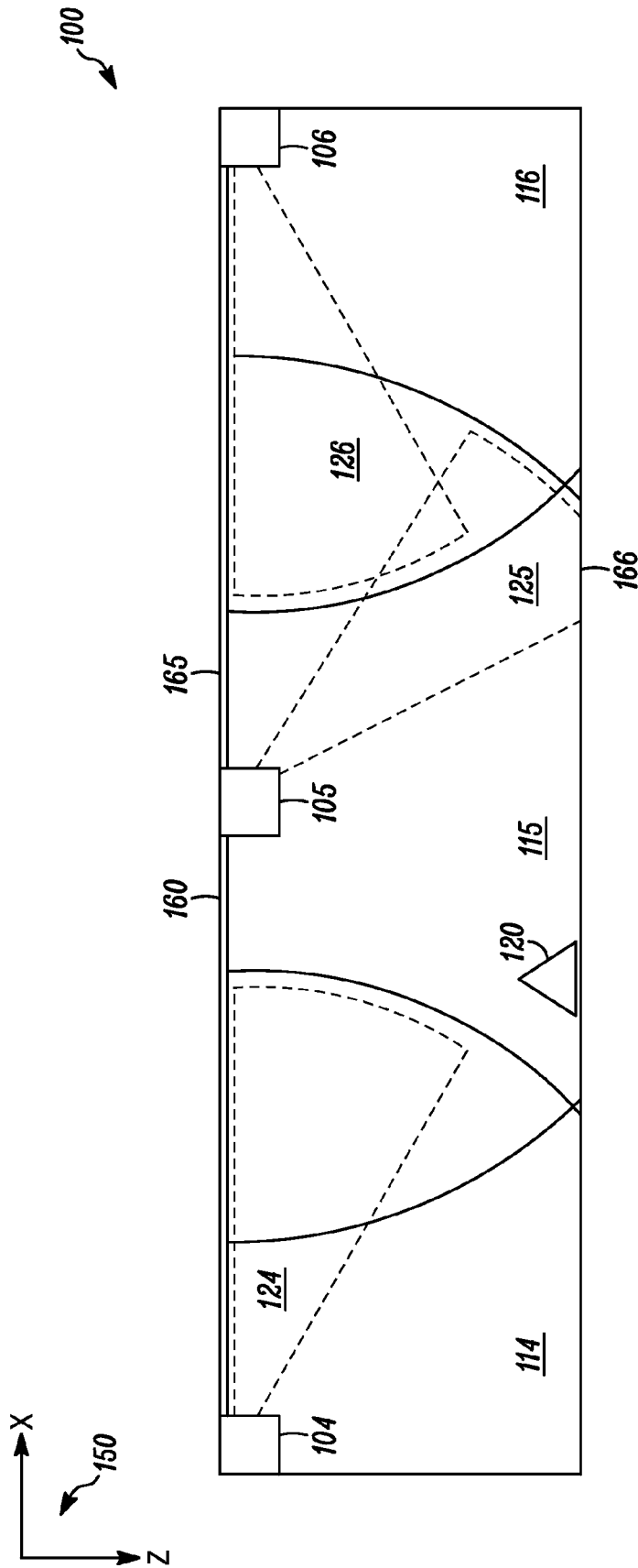


FIG. 2

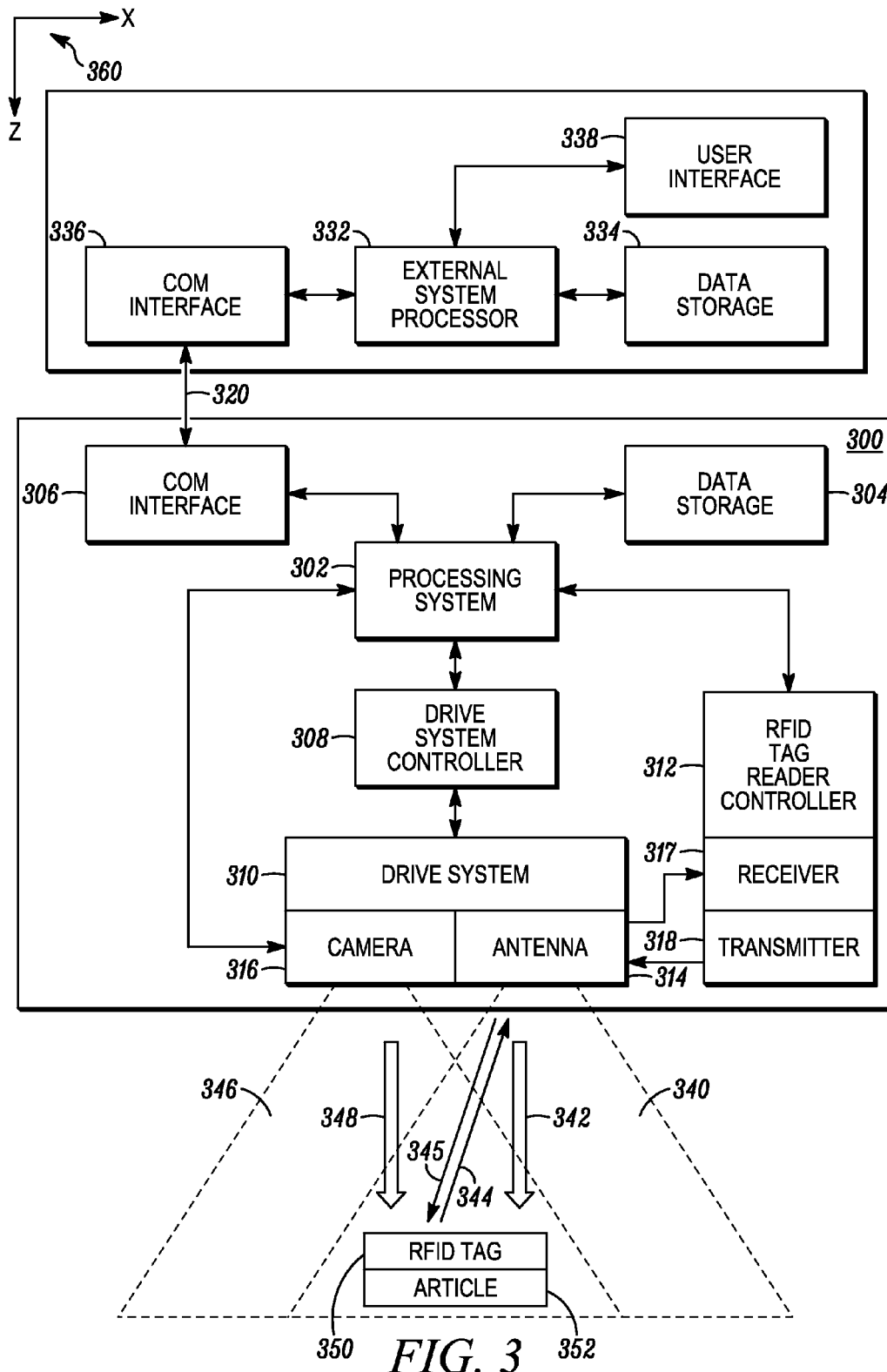


FIG. 3

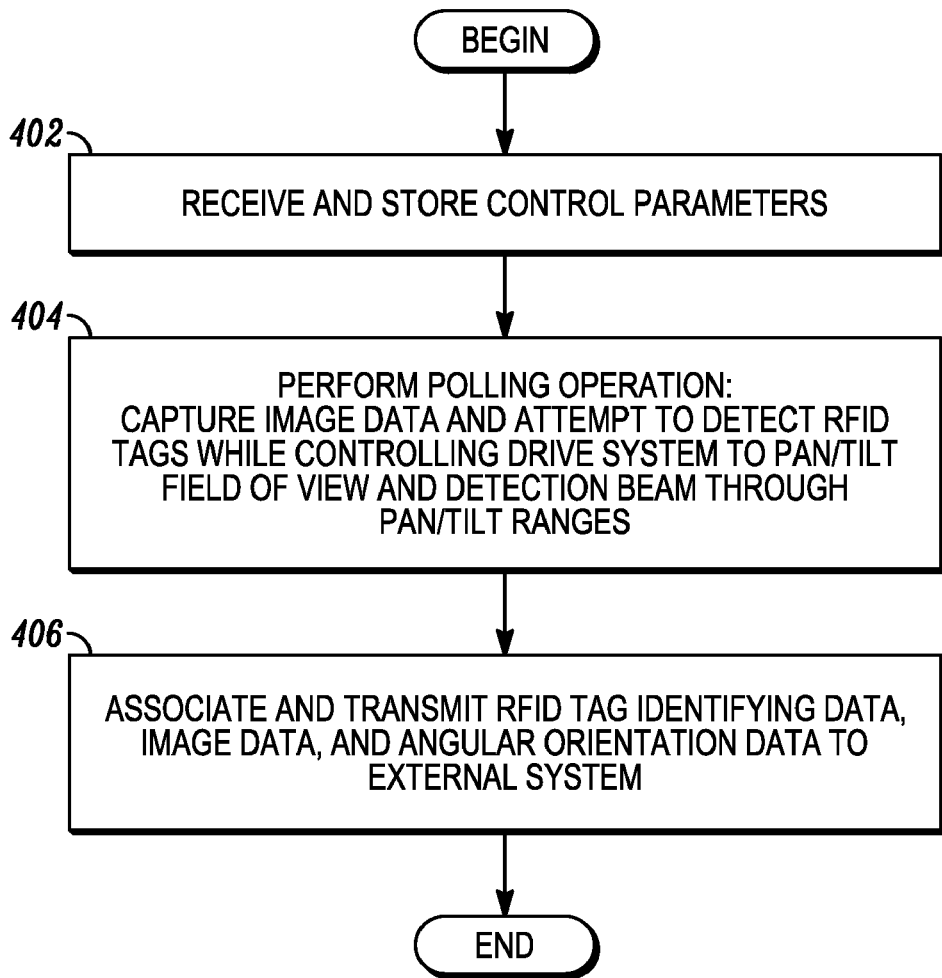


FIG. 4

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