

## **FORM 2**

**THE PATENTS ACT, 1970**  
(39 of 1970)  
&  
**THE PATENTS RULES, 2003**

**COMPLETE SPECIFICATION**  
**(See section 10, rule 13)**

**“AMORPHOUS ALLOY SPACER FOR PERPENDICULAR MTJS”**

**QUALCOMM INCORPORATED**, Attn: International IP  
Administration, 5775 Morehouse Drive, San Diego, California  
92121-1714, United States of America

The following specification particularly describes the invention and the manner in which it is to be performed.

21. A method for constructing a perpendicular magnetic tunnel junction (MTJ) apparatus, comprising steps of:

depositing a tunnel barrier layer between a free layer and a reference layer;

depositing a tunnel magnetoresistance (TMR) enhancement buffer layer between the tunnel barrier layer and the reference layer; and

depositing an amorphous alloy TMR enhancement spacer between the TMR enhancement buffer layer and the reference layer.

22. The method of claim 21, further comprising the step of integrating the perpendicular MTJ apparatus into a mobile phone, a set top box, a music player, a video player, an entertainment unit, a navigation device, a computer, a hand-held personal communication systems (PCS) unit, a portable data unit, and/or a fixed location data unit.

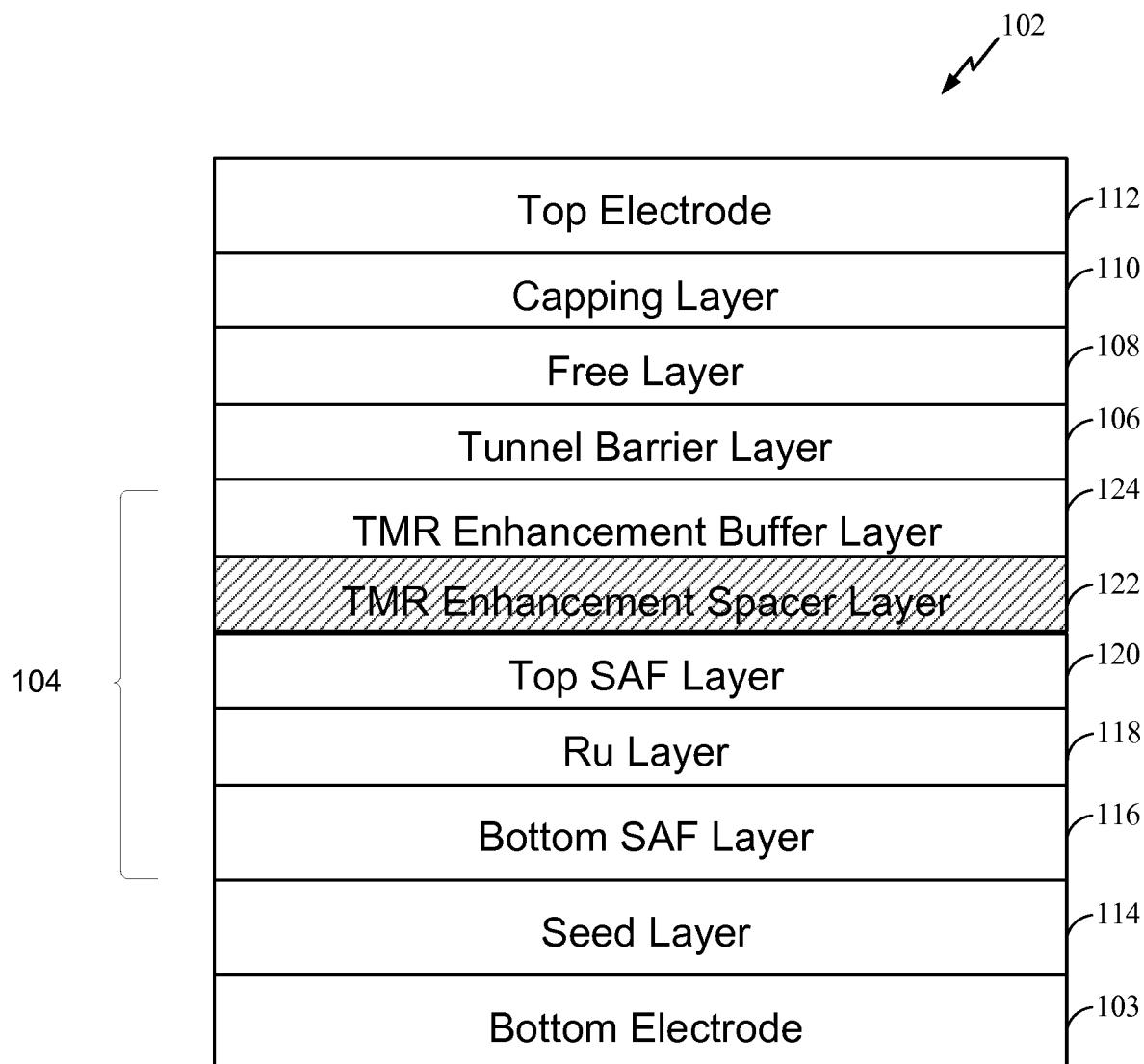


FIG. 1

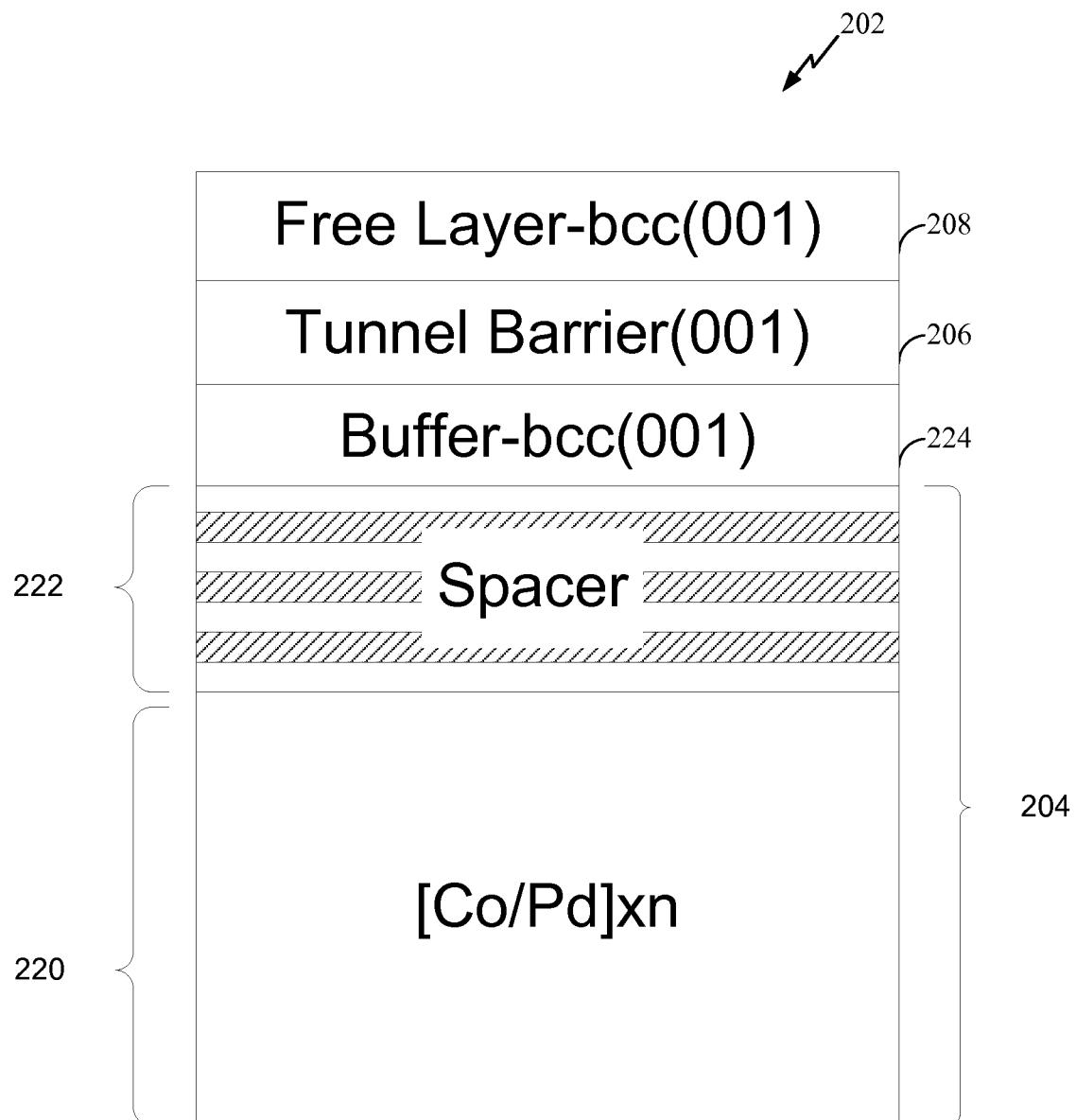


FIG. 2

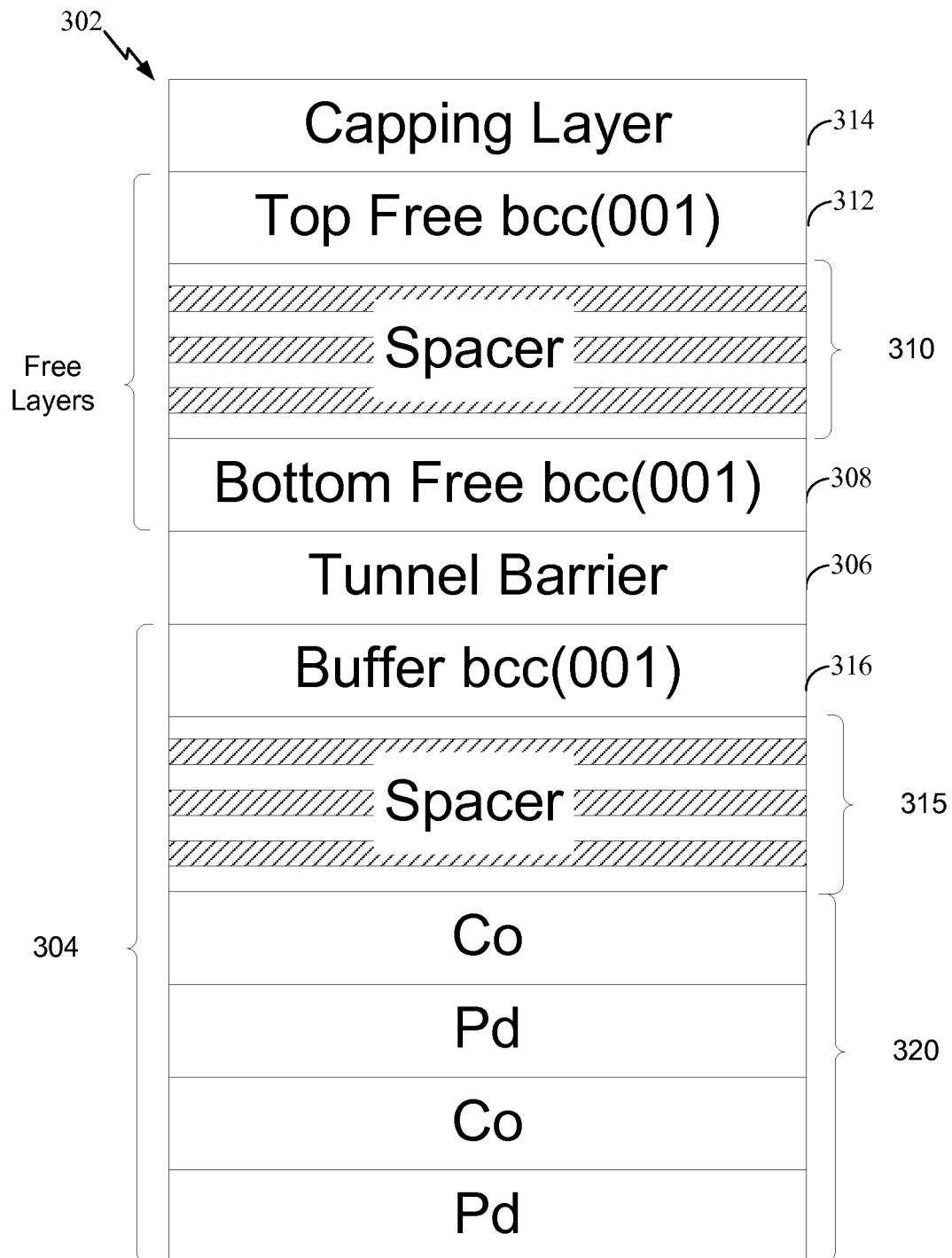


FIG. 3

4/7

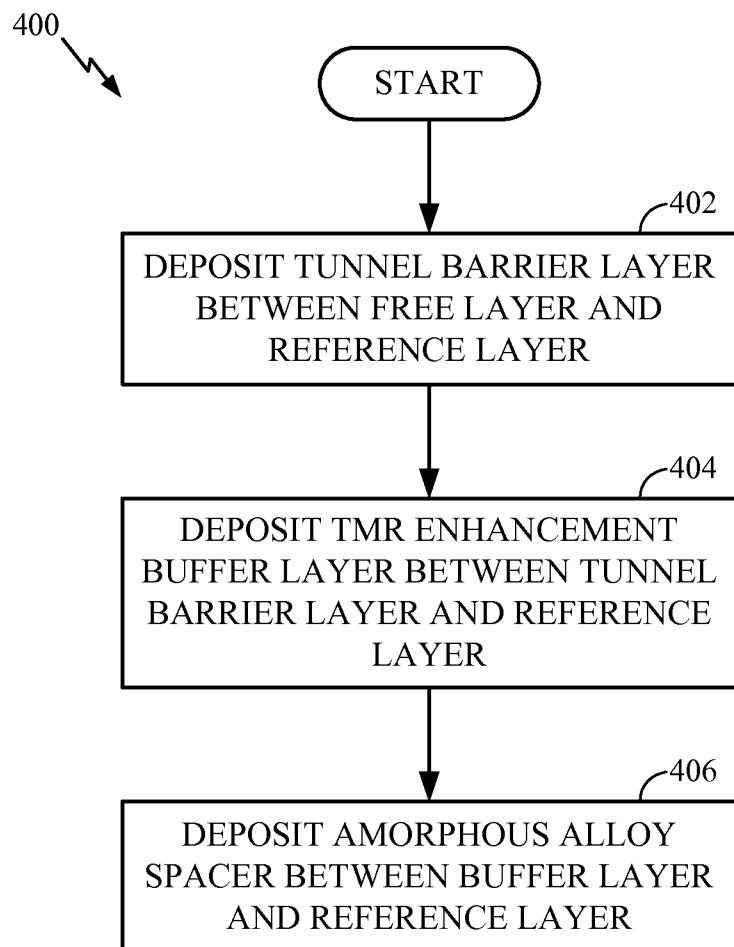


FIG. 4

5/7

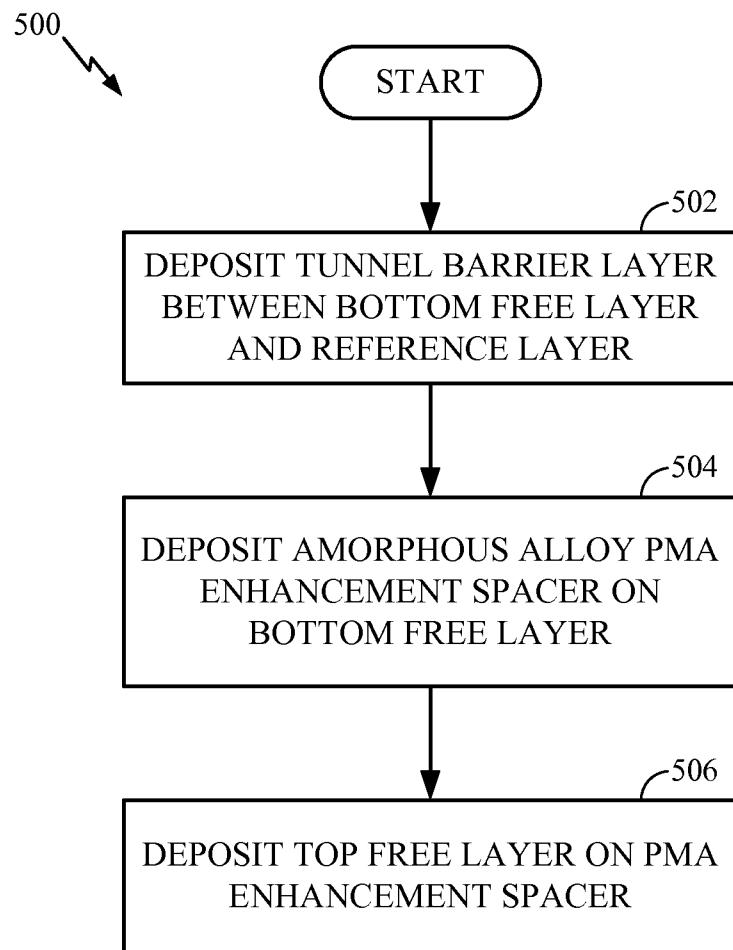


FIG. 5

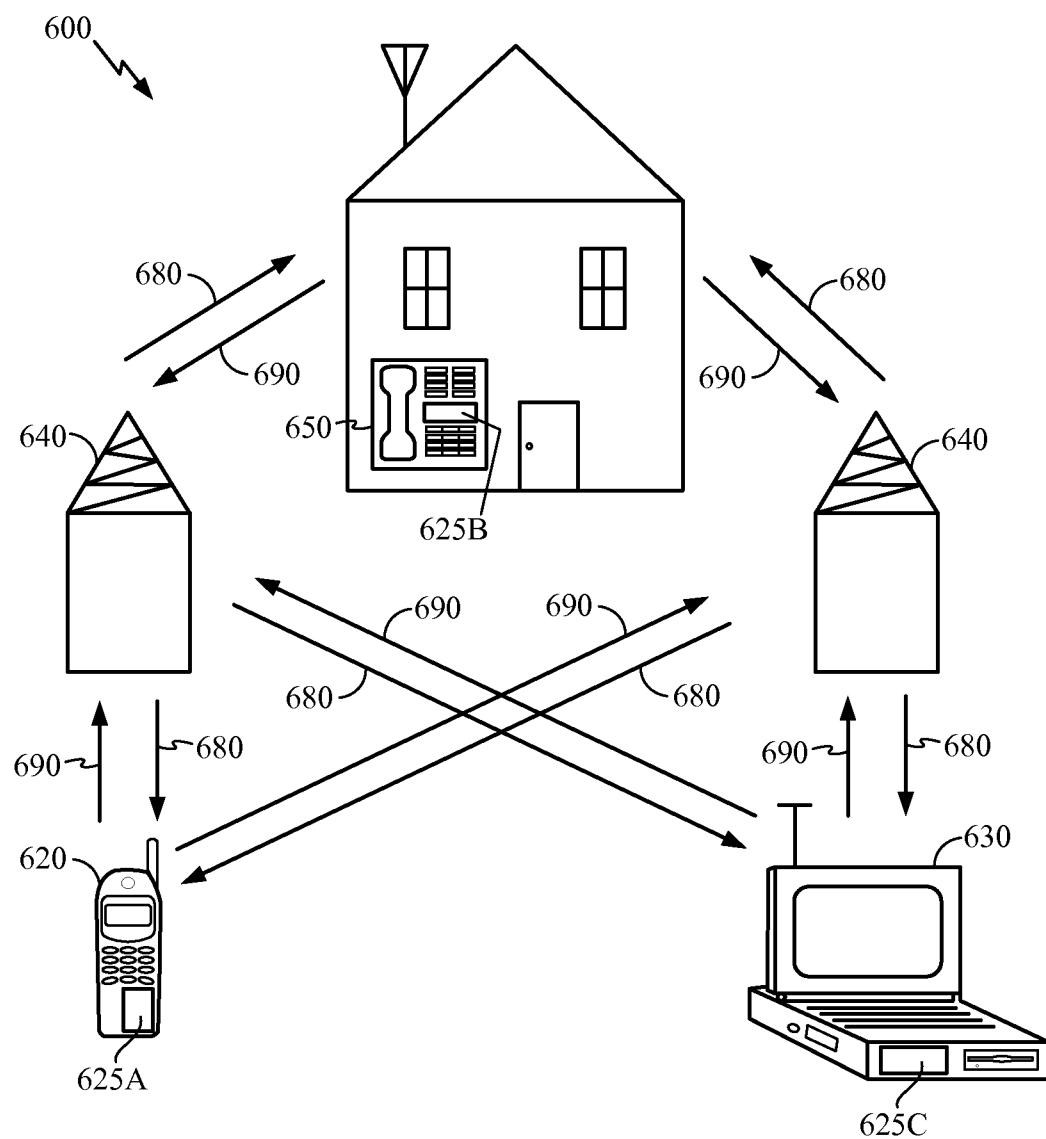


FIG. 6

7/7

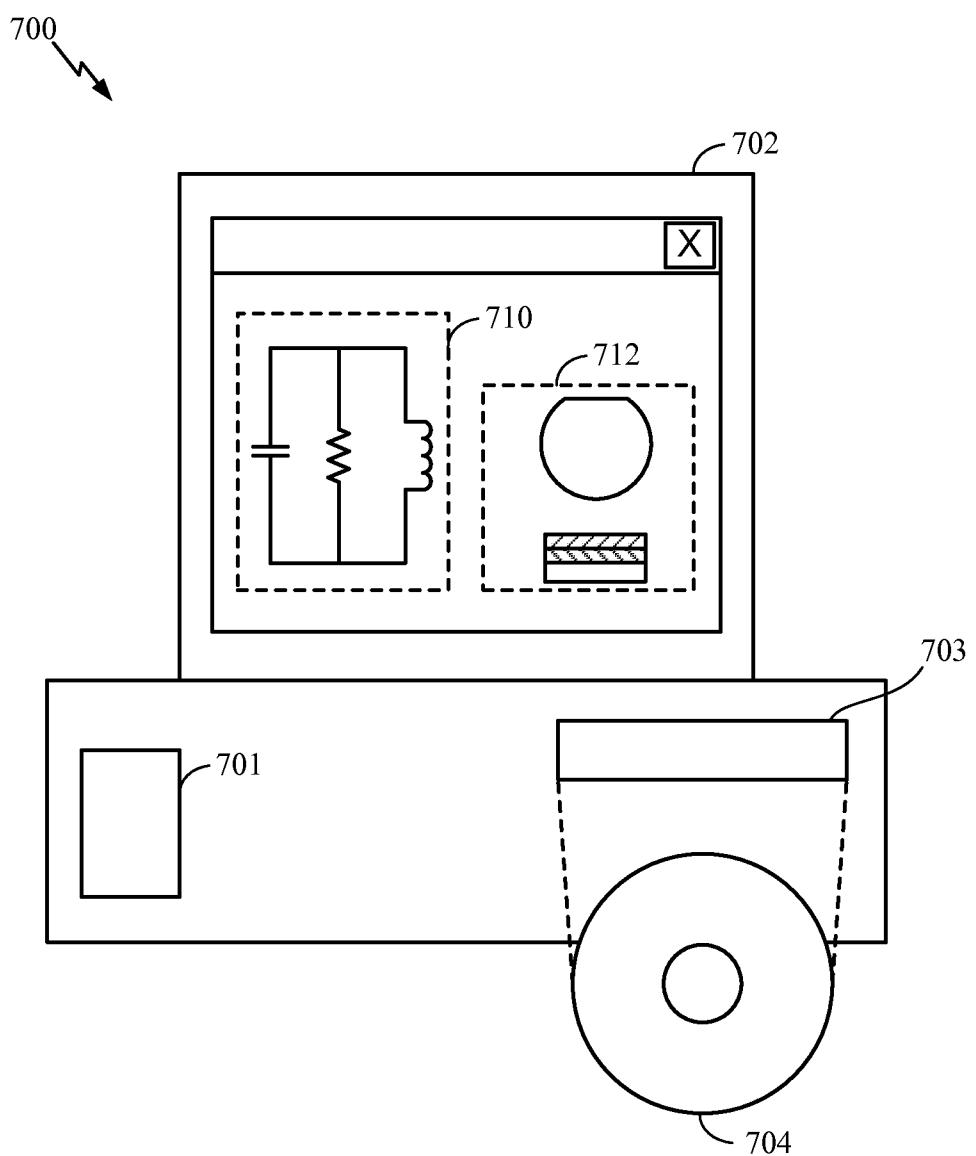


FIG. 7