

ABSTRACT

Two sensors (114, 112) may be installed on a marine drill (100) to improve measurements used for monitoring and operating the marine drill. The sensors may be installed in a differential configuration with one sensor located on a top block (102) of the marine drill and a second sensor located on a drilling floor (104) of the marine drill. Various calculations may be performed using measurements obtained from the two sensors such as, for example, rate of penetration of the marine drill, drilling level bubble for the marine drill, out-of-straightness values for the marine drill, and vibration motion for the marine drill.

Fig. 1

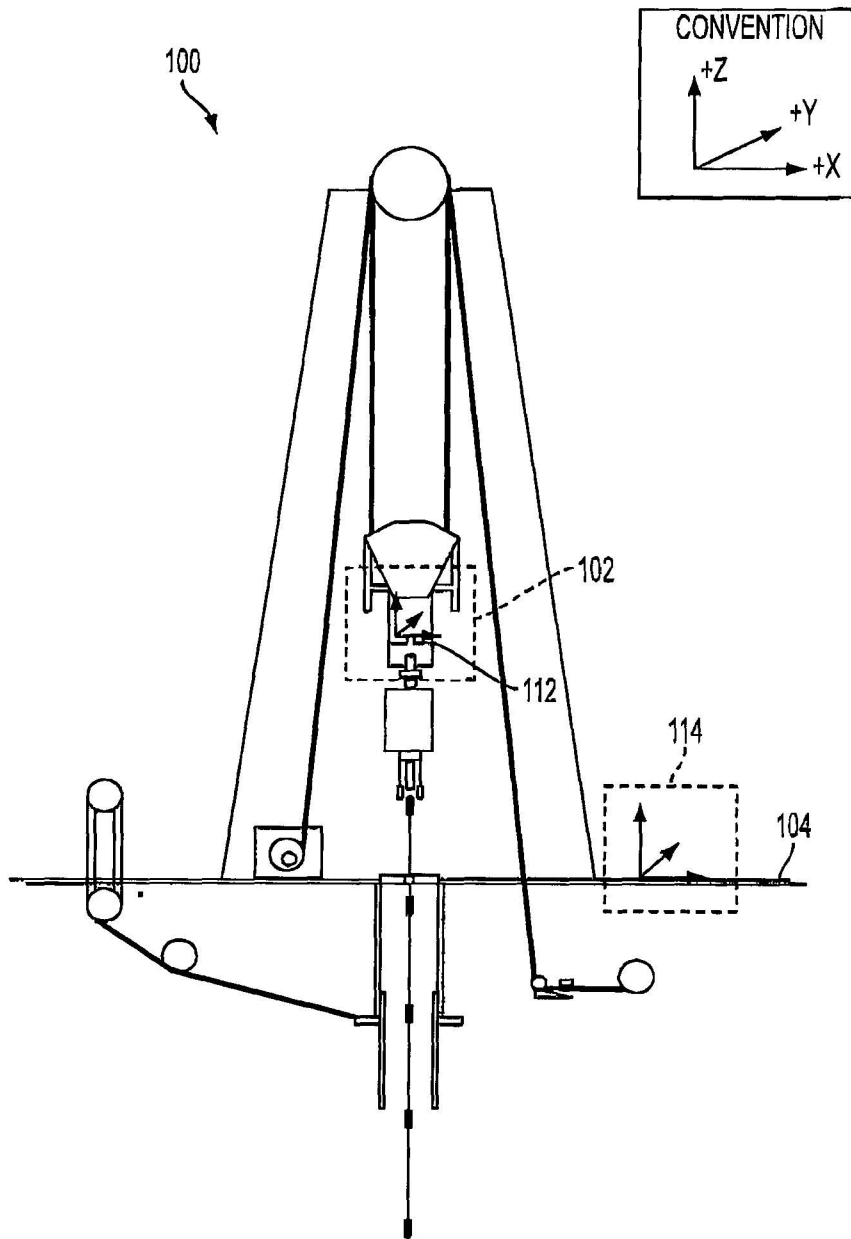


FIG. 1

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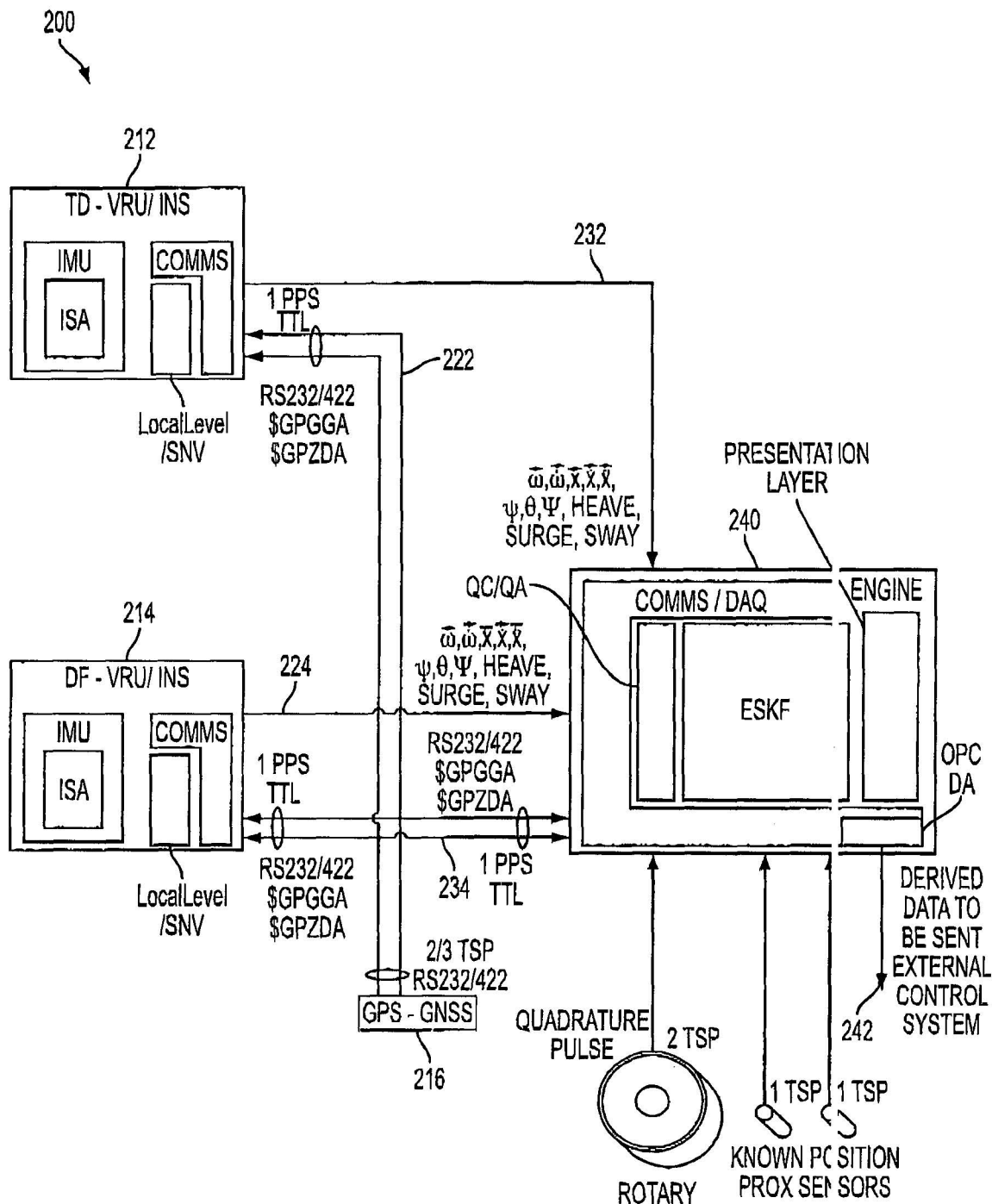


FIG. 2

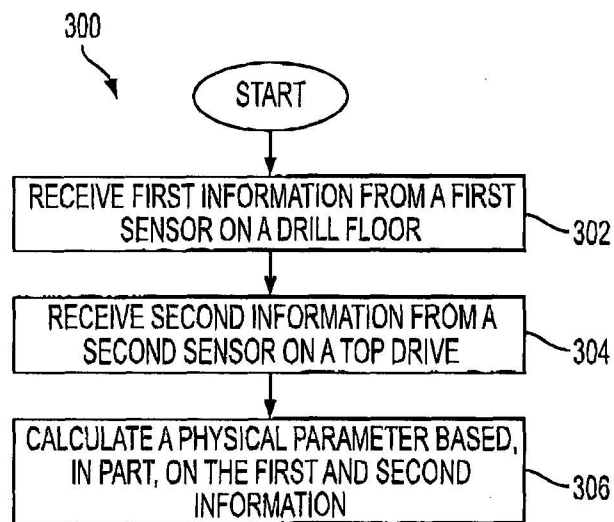


FIG. 3

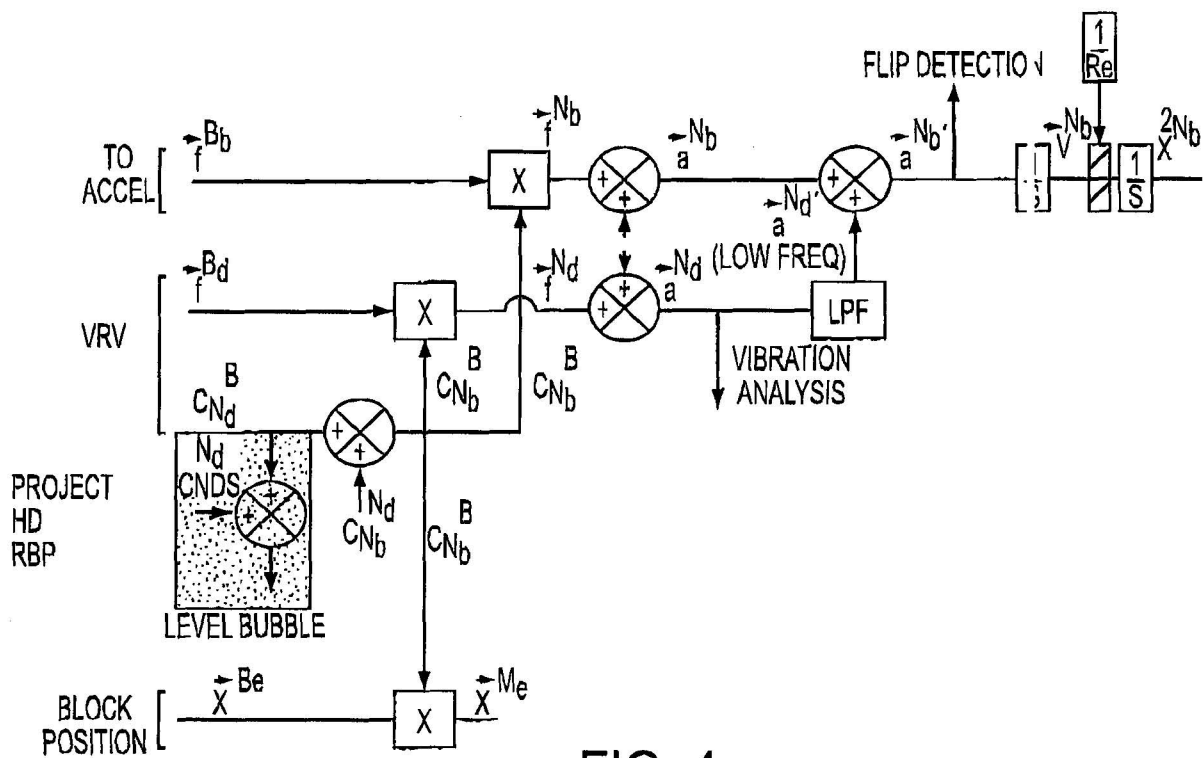
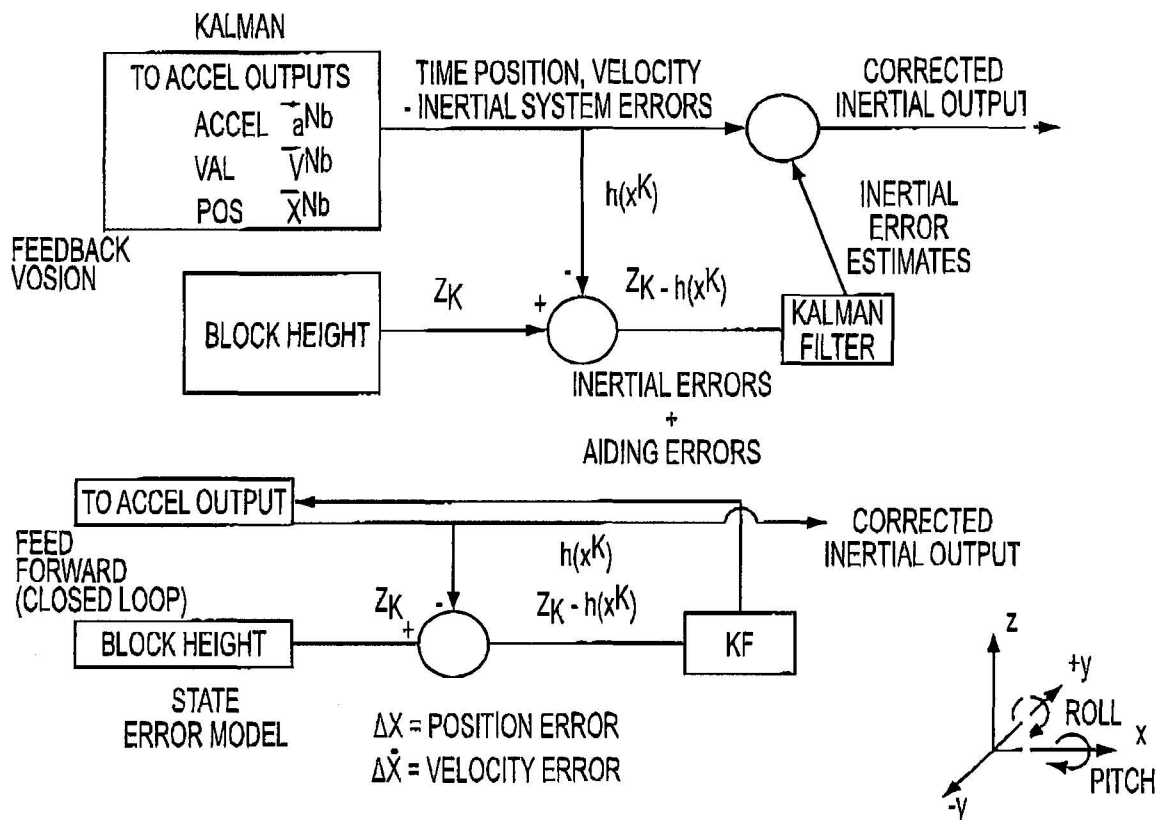


FIG. 4



ALTHOUGH MOST OF THE MOTION IS IN THE Z DIRECTION, WE WILL GO WITH 6 DOF MODEL. (5 ONLY AS YAW WILL BE NEGLECTED.)

FIG. 5

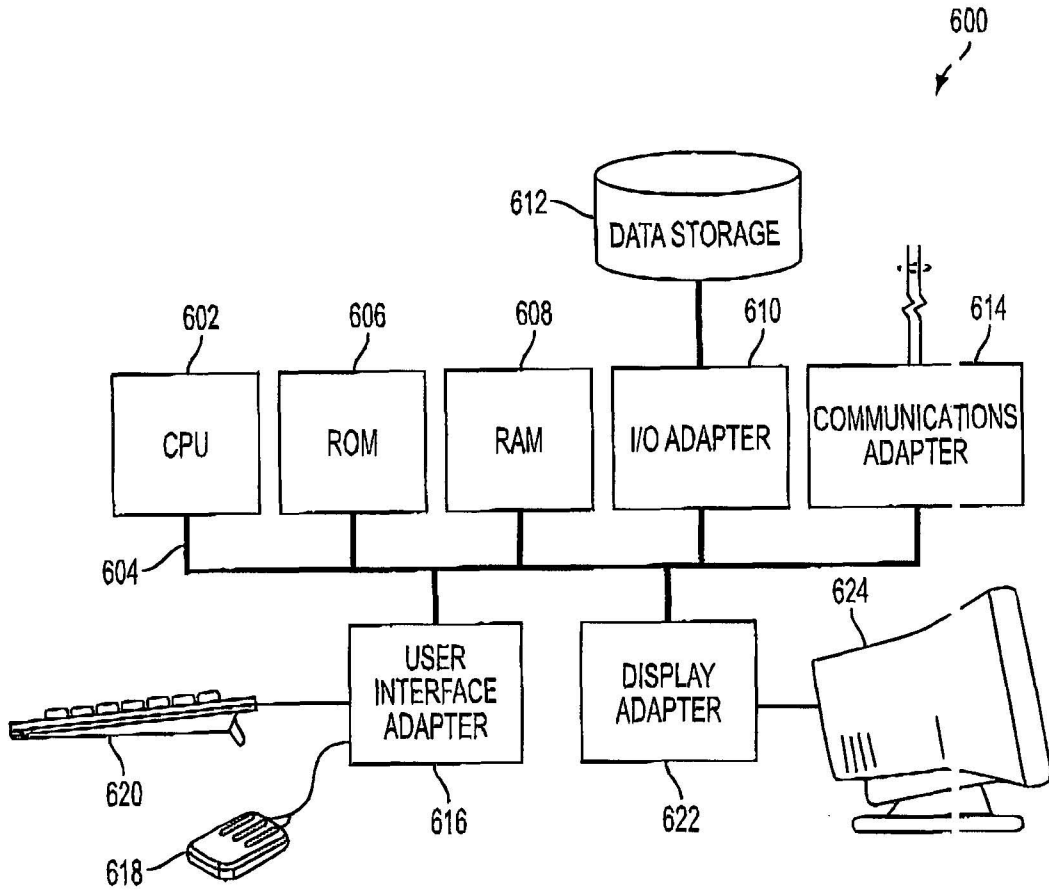


FIG. 6