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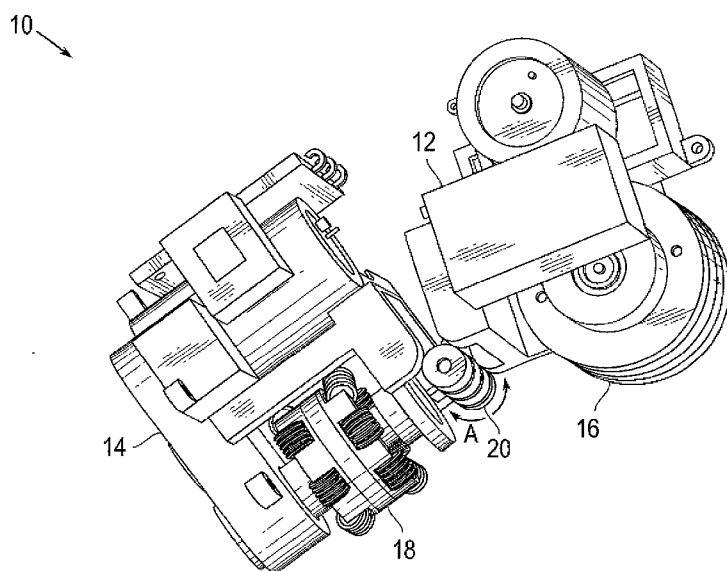


Fig. 1A

(57) Abstract: A system and method for determining orientation of a vehicle is provided. The method includes the steps of providing a vehicle having a hinge joint such that sections of the chassis are capable of rotation with respect to each other, A first and second wheel is mounted to one and the other of the chassis sections, respectively. Vehicle geometric data defining a distance between the hinge joint and the centers of the first and second wheels, respectively, and the diameter of the wheels is provided. Surface geometric data defining the curvature of the surface can be provided. The angle of rotation about the hinge joint is measured. An orientation of the vehicle relative to the surface based on the vehicle geometric data, the surface geometric data, and the measured angle of rotation can be determined. A system and method for determining the orientation of an object is also provided.