This Sheet Has Been Replaced



VEHICLE POSITION DETERMINING APPARATUS

ABSTRACT

Apparatus for determining the position of a mobile vehicle relative to a fixed location marker device which comprises a coil energized to emit a magnetic field composed of lines of magnetic flux extending radially and arcuately from the ends of the coil's longitudinal axis. A sensor unit mounted on the mobile vehicle comprises four identical sensing coils each responsive to the frequency of the magnetic field of the marker device and each having a major axis. These sensor coils are supported in two pairs with the major axes of the sensor coils of each pair disposed on either side of a common central plane and extending parallel thereto, this common central plane extending transversely to the longitudinal axis of the marker device coil. Each pair of sensor coils is arranged in an X pattern in which their major axes cross each other medially and perpendicularly to define a center for the coil pair. The two pairs of coils are mounted with their centers spaced apart a fixed distance on a base line which the major axes of the coils cross at a 45 degree angle. Position signals from the sensor coils are processed to produce X and Y coordinate values indicating the relative position of the sensor unit to the marker device. The marker device may be inductively excited from an antenna on the mobile vehicle.