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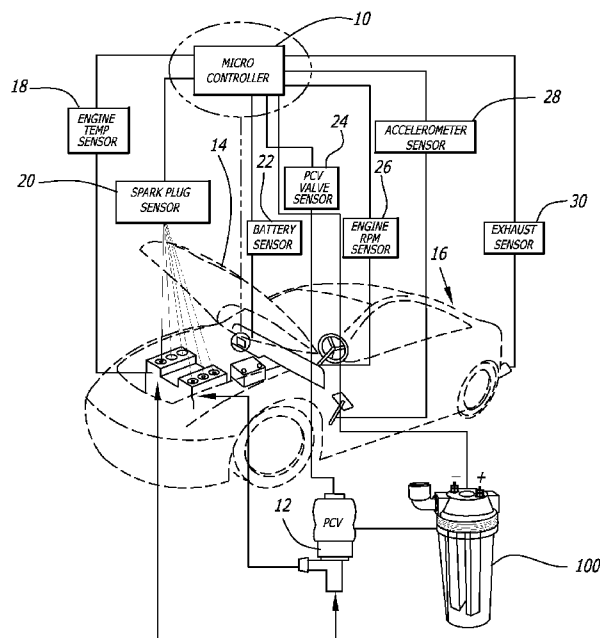


FIG. 1

(57) Abstract: An on-demand oxy-hydrogen fuel system includes a oxy-hydrogen generator which is incorporated into a standard internal combustion engine. A microcontroller activates the oxy-hydrogen generator when oxy-hydrogen is needed. The oxy-hydrogen is then mixed with blow-by gases from a PCV valve which are recycled through the intake manifold. The addition of the oxy-hydrogen provides a very efficient fuel source which can dramatically increase fuel efficiency and reduce emissions.