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ABSTRACT

A sustained controllable gas flame. The hydrogen generator utilized provides gasses from water having impurities and other gasses entrapped therein. The hydrogen generator has a chamber for holding a quantity of water and a pair of non-oxidizing electrodes are located in the chamber. A rippling wave form electric potential is applied across the electrodes without any change of polarity and the current flow is limited. The gasses separated from the water comprise combustible gasses such as hydrogen and oxygen and non-combustible gasses, such as nitrogen. The nitrogen, oxygen and hydrogen are mixed as they are released in the process and collected as a mixture of gasses in a collection chamber of the generator. A nozzle having one or more ports of a given configuration is connected through a line to the uppermost region of the gas collection chamber of the hydrogen generator. The nitrogen reduces the velocity and temperature of the burning flame from that of the hydrogen/oxygen mixture. To further control the temperature and velocity of the burning gas mixture there ^{are} ~~is~~ added to the collection chamber other non-burnable gasses. The configuration of the nozzle and its port opening for sustaining a flame is dependent on the mixture of gasses utilized and restricted thereby. An increase in the size of the flame requires additional port openings to prevent blowout.