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(54) Title: MICROWAVE INDUCED PLASMA CLEANING DEVICE AND METHOD FOR PRODUCER GAS

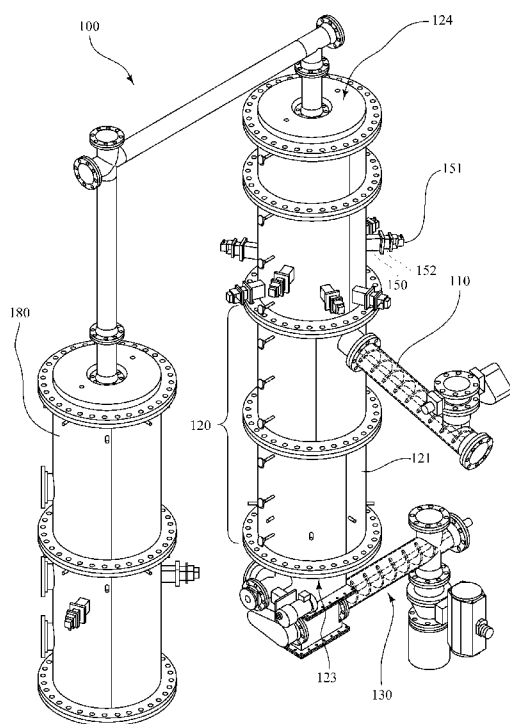


FIG. 1

(57) Abstract: A device and method for cleaning producer gas includes a filter bed chamber, a microwave chamber, a first catalytic chamber and a second catalytic chamber. The filter bed chamber comprises an inlet for carbon-based material and a spent carbon outlet. The microwave chamber comprises a permeable top and wave guides around the perimeter through which microwaves can be introduced into the device using magnetrons. The first catalytic chamber is connected to the microwave chamber, and the second catalytic chamber is connected to the first catalytic chamber. The method comprises using the device by filling the filter bed chamber with carbon-based material, introducing microwaves into the microwave chamber using the magnetrons and wave guides, dissociating heavy carbons entrained within the gas by passing the gas through carbon-based material in the filter bed chamber, the microwave chamber, the first catalytic chamber and the second catalytic chamber.



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