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(54) **PREPROCESSING APPARATUS FOR GAS ANALYSIS**

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See application file for complete search history.

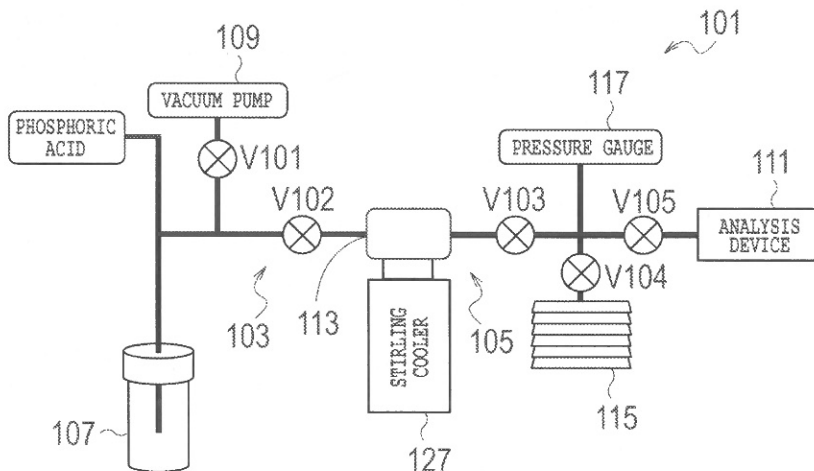
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(57) **ABSTRACT**  
Provided herein is a preprocessing apparatus for gas analysis that enables preprocessing for gas analysis to be performed without requiring a cryogen. A preprocessing apparatus for gas analysis **101** mainly includes a gas flow path **103**, a cooling portion **105**, and a plurality of valves **V101** to **V105** that serve as gas flow path connection changing means for changing the gas flow path. The cooling portion **105** is operable to cool the collecting portion **113**, and is constituted from a heat conductor **121**, a cooling device **127**, and a sealed structure **129**. The cooling device **127** can be cooled a contact cooling section **131** to an extremely low temperature by utilizing electrical energy. The cooling device **127** is used to bring the collecting portion **113** to a first temperature at which the target gas to be analyzed is solidified, and to thereafter bring the collecting portion **113** to a second  
(Continued)



temperature at which only the target gas to be analyzed is gasified. By performing such processes, the target gas to be analyzed can be extracted by removing gases of impurities from a mixed gas.

**19 Claims, 10 Drawing Sheets**

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