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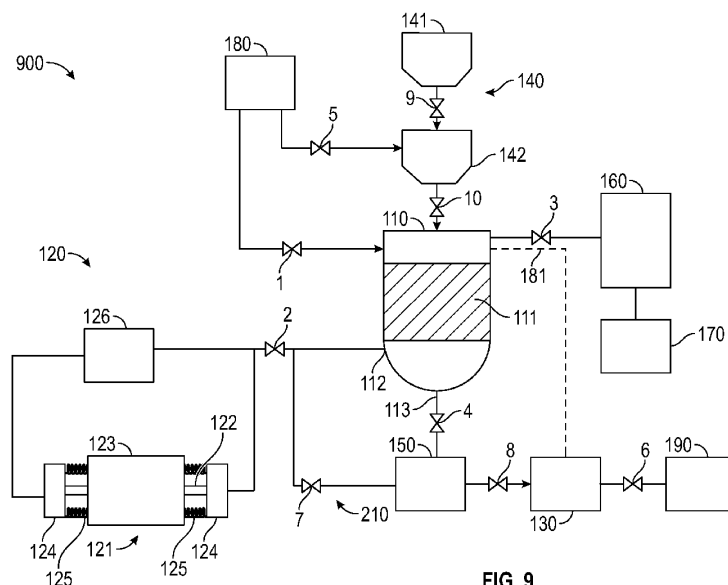


FIG. 9

(57) Abstract: Methods for liquefaction of carbonaceous materials, including methods that use electromagnetic radiation. Systems for liquefaction of carbonaceous materials. The systems may include a circulation conduit for mixing reactants, and/or a heating apparatus that relies on electromagnetic radiation.

[Continued on next page]

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