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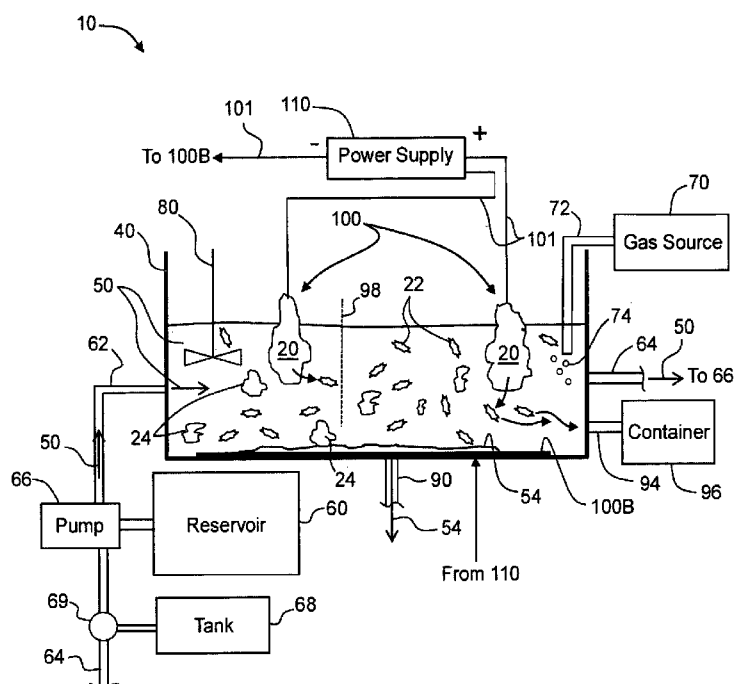
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[Continued on next page]

(54) **Title:** PROCESS FOR FORMING EXPANDED HEXAGONAL LAYERED MINERALS AND DERIVATIVES USING ELECTROCHEMICAL CHARGING



(57) **Abstract:** Processes for forming expanded hexagonal layered minerals (HLMs) and derivatives thereof using electrochemical charging are disclosed. The process includes employing HLM rocks (20) as electrodes (100) immersed in an electrolytic slurry (50) that includes an organic solvent, metal ions and expanded HLM (24). The electrolysis introduces organic solvent and ions from the metal salt from the slurry into the interlayer spacings that separate the atomic interlayers of the HLM rock, thereby forming 1st-stage charged HLM that exfoliates from the HLM rock. The process includes expanding the electrochemically 1st-stage charged HLM by applying an expanding force.



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