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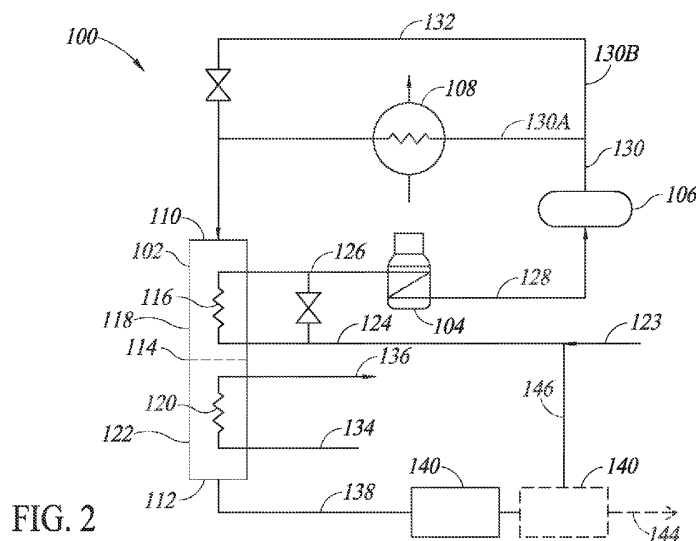
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(54) Title: REACTOR EFFLUENT HEAT RECOVERY SYSTEM



(57) Abstract: A heat exchanger includes a shell with a longitudinal axis with a first portion of the shell on a first side of a plane through the shell and a second portion on a second side of the plane opposite to the first side. A first heat transfer surface is arranged in the first portion of the shell and a second heat transfer surface is arranged in the second portion of the shell. The first and second heat transfer surfaces may be coiled tube bundles with one of the coolant streams interfacing with the heat transfer surfaces being the reactor feed stream. The tubes in the bundle have a radial spacing between tubes that is considerably larger than an axial spacing between tubes. A reactor effluent flows through the shell without a substantial change in direction while the first and second heat transfer surfaces cool the effluent.

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