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(54) Title: RISERS DESIGNED TO ACCOMMODATE THERMAL EXPANSION

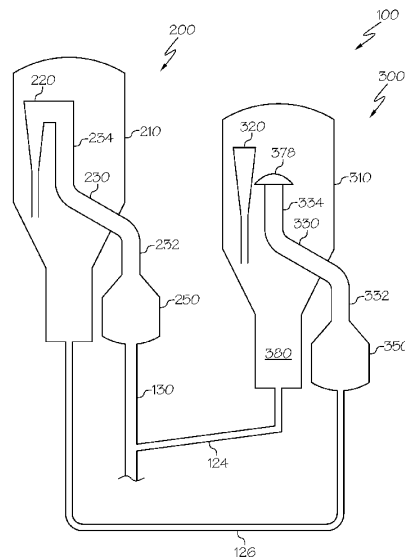


FIG. 1

(57) Abstract: According to one or more embodiments of the present disclosure, a riser may include a lower riser portion, where the lower riser portion terminates at an upper end of the vertical riser segment, and an upper riser portion including a lower end, where the lower end of the upper riser portion may be positioned around the upper end of the vertical riser segment of the lower riser portion. The riser may also include a first guide and a second guide each positioned on opposite sides of the interior of the lower end of the upper riser portion. The vertical riser segment of the lower riser portion may be guided in a direction substantially parallel with the outer surface of the first guide and the outer surface of the second guide when the lower riser portion expands or contracts due to changes in temperature.

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