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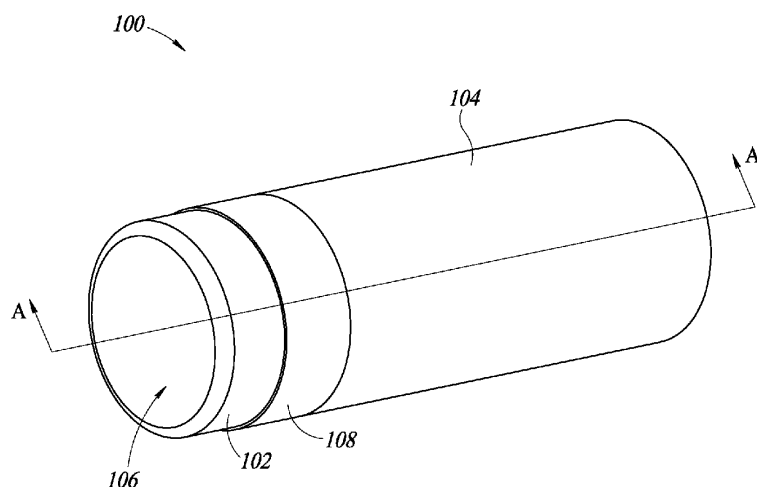


FIG. 3

(57) Abstract: An induction heating system and method includes a work piece that may be a multi-layer pipe. The multi-layer pipe includes an inner layer for conveying effluent and an outer layer surrounding at least a portion of the inner layer. The outer layer has a higher Curie temperature than the inner layer such that the outer layer remains magnetic at or above a reaction temperature of the effluent to maximize hysteresis losses in the pipe up to and beyond the reaction temperature of the effluent. The inner layer may have desirable mechanical, thermal, and chemical properties such that the combination of the outer layer and the inner layer results in a multi-layer pipe that is efficient for induction heating up to and beyond the reaction temperature, while also being mechanically and thermally suitable for hydrocarbon processing applications.

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