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(54) **Title:** SYSTEMS AND METHODS FOR ENHANCING EFFICACY OF ULTRASOUND TREATMENT

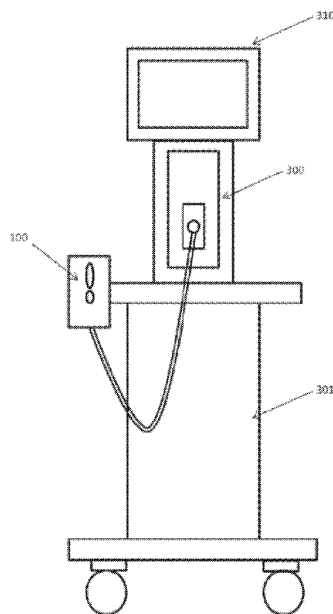


FIG. 1A

(57) **Abstract:** Embodiments are provided that enhance ultrasound efficacy by for example, high efficiency, signal measurement, calibration, and assurance systems with a control system radio-frequency (RE) driver configured to drive one or more focused ultrasound transducers. The RE driver can comprise one or more power amplifiers including one or more III-V semiconductors, (e.g., gallium nitride GaN, GaAs, GaSb, InP, InAs, InSb, InGaAs, AlSb, AlGaAs, and/or AlGaN) field-effect transistors to efficiently provide high power with distinct narrow-band RE signals over a wide frequency range. The RE driver can include a power measurement and/or calibration system to monitor the amplitude and phase of the RE signal output from the power amplifier and estimate the amount of RE power delivered to the ultrasound transducers.

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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