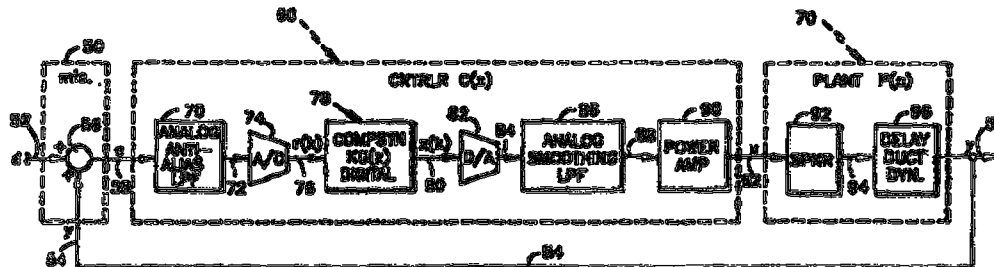


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(54) Title: **NONLINEAR REDUCED-PHASE FILTERS FOR ACTIVE NOISE CONTROL**

(57) Abstract

An active noise (or vibration) control system having an actuator (24) which provides an acoustic anti-noise signal in response to a drive signal (U), an error sensor (16) which senses the acoustic anti-noise signal from the actuator, senses disturbance noise (d), and provides an error signal (e) indicative of a combination thereof, and a controller (20), responsive to the error signal (e), which provides the drive signal (U) to the actuator (24), is provided with controller compensation (78) having energy states (112) and having nonlinear reset logic (130) which temporarily resets the energy states (112) in the filter (78) to zero when the error signal crosses zero, thereby improving the bandwidth of the active noise control system.