

Title (en)
METHOD AND APPARATUS TO CONTROL THE IDLING SPEED OF A COMBUSTION ENGINE

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EP 0077996 B1 19880601 (DE)

Application
EP 82109643 A 19821019

Priority
DE 3142409 A 19811026

Abstract (en)
[origin: US4474154A] Regulation of idling speed involves the production of a first error signal by comparing engine speed with a reference idling speed, and then deriving from the first error signal in an amplifying PI controller, proportional and integral components that are added together, for use of the PI sum signal as a reference value signal for the displaceable stop position. The latter is compared to the actual stop position to provide a second error signal for control of electro-pneumatic valves of a positioning device that displaces the stop. Both the proportional and integral components produced in the controller vary assymetrically about the reference idling speed, so that regulation operates more strongly when the engine speed is too low than when it is too high, except for a dead zone on either side of the reference idling speed. When the driver actuates the throttle, a switch signal designates that the idling condition is no longer present and a lower engine speed threshold defines a starting mode of operation at lower speeds and a higher engine speed threshold distinguishes the "drive" mode from the partial load mode. Suitable operations of the displaceable stop during mode transitions and during operations in non-idling modes are provided. The controller output at the end of the last idling interval is stored for use when the engine returns to the idling mode.

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