United States Patent [19]

Itoh et al.

[56]

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[54]	AUTOMATIC OPENING AND CLOSING DEVICE FOR A WINDOW		
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Oct. 9, 1986 [JP] Japan 61-240378			
[51]	Int. Cl.4	H02P 1/22	
• •		318/466	
[58]	Field of Sea	arch 318/256, 265, 266, 466,	
	318/46	7, 468, 469, 470, 603, 280, 286; 29/26,	
		28, 199	

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Primary Examiner—Bentsu Ro Attorney, Agent, or Firm—Sughrue, Mion, Zinn, Macpeak & Seas			

[57] ABSTRACT

An automatic opening and closing device for a window which has a forwardly and reversely rotatable motor for opening and closing the widow, switching means which instructs said motor to rotate, pulse-detecting means which detects a pulse generated along with a rotation of said motor, counting means which counts a pulse number detected by said pulse-detecting means and rotation-controlling means which performs rotation-control to said motor on basis of a count number counted by said counting means and a predetermined count number is dislosed, by which it is possible to stop the opening or closing action of the window at a halfway, or possible to convert the action of the window in the reverse direction.

5 Claims, 12 Drawing Sheets

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FIG. 1

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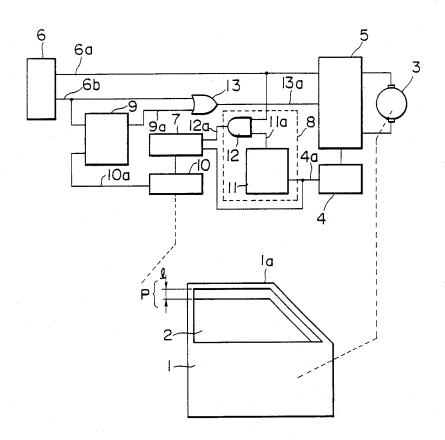
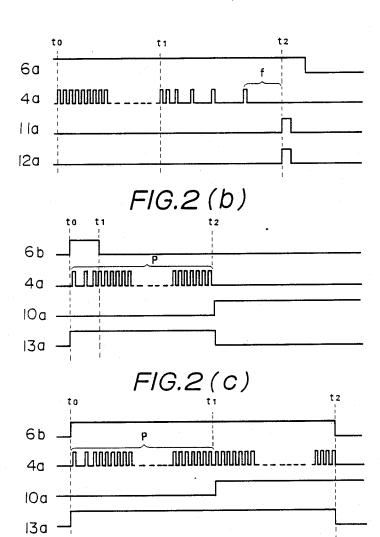
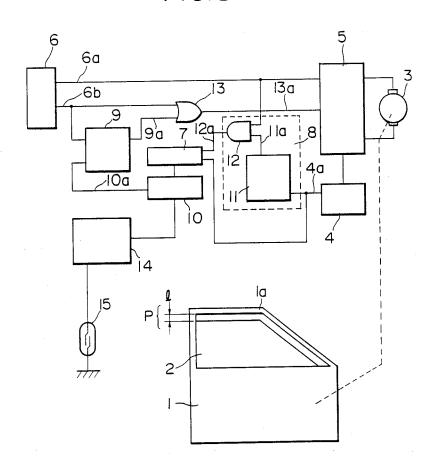


FIG.2 (a)

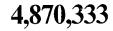


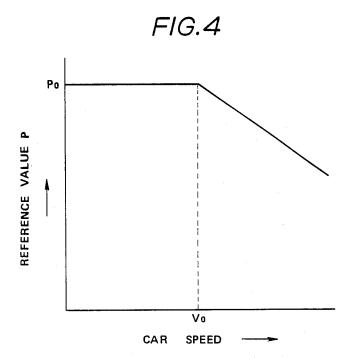
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FIG.3



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