

[54] AUTOMATIC OPENING AND CLOSING DEVICE FOR A WINDOW

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[51] Int. Cl.<sup>4</sup> ..... H02P 1/22

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[58] Field of Search ..... 318/256, 265, 266, 466, 318/467, 468, 469, 470, 603, 280, 286; 29/26, 28, 199

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[57] ABSTRACT

An automatic opening and closing device for a window which has a forwardly and reversely rotatable motor for opening and closing the window, 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 disclosed, 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

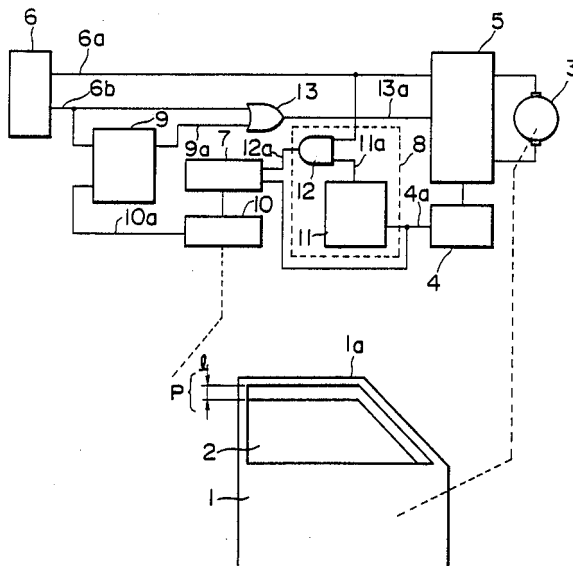


FIG. 1

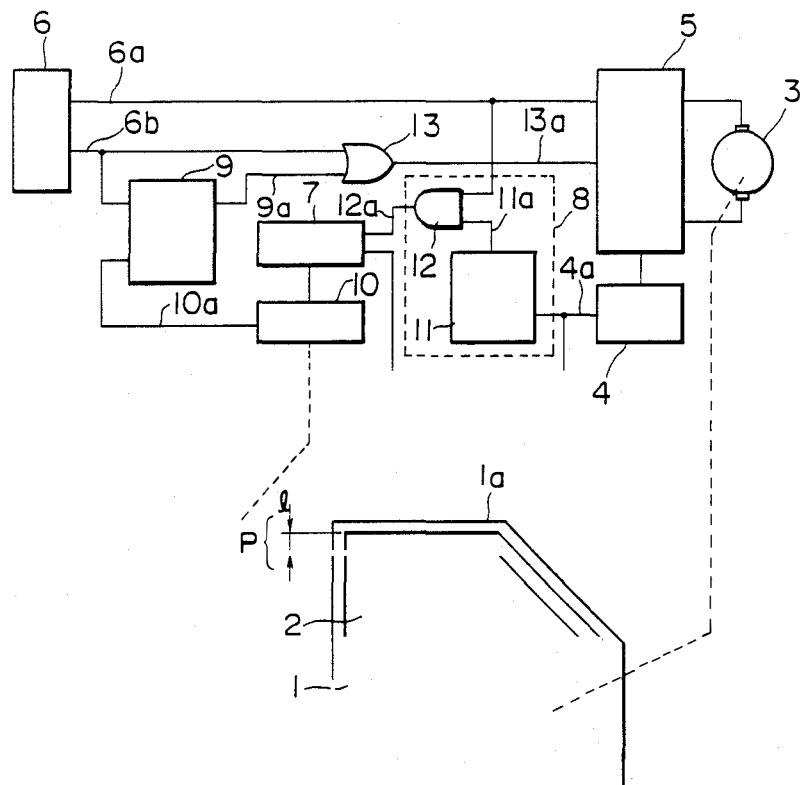


FIG.2 (a)

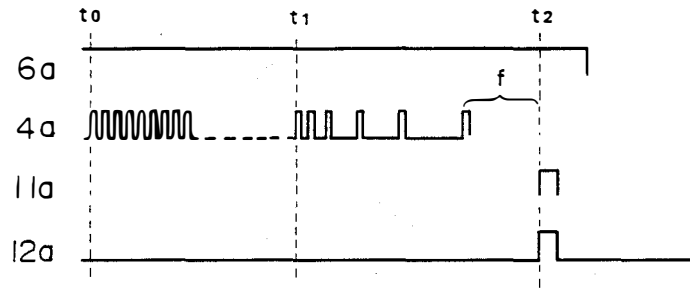


FIG.2 (b)

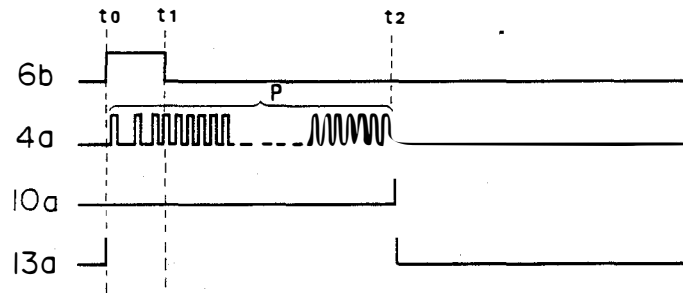


FIG.2 (c)

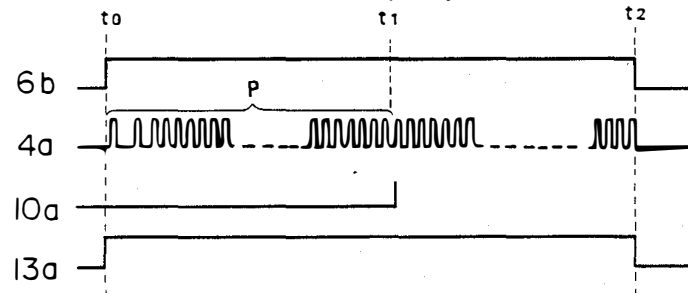


FIG. 3

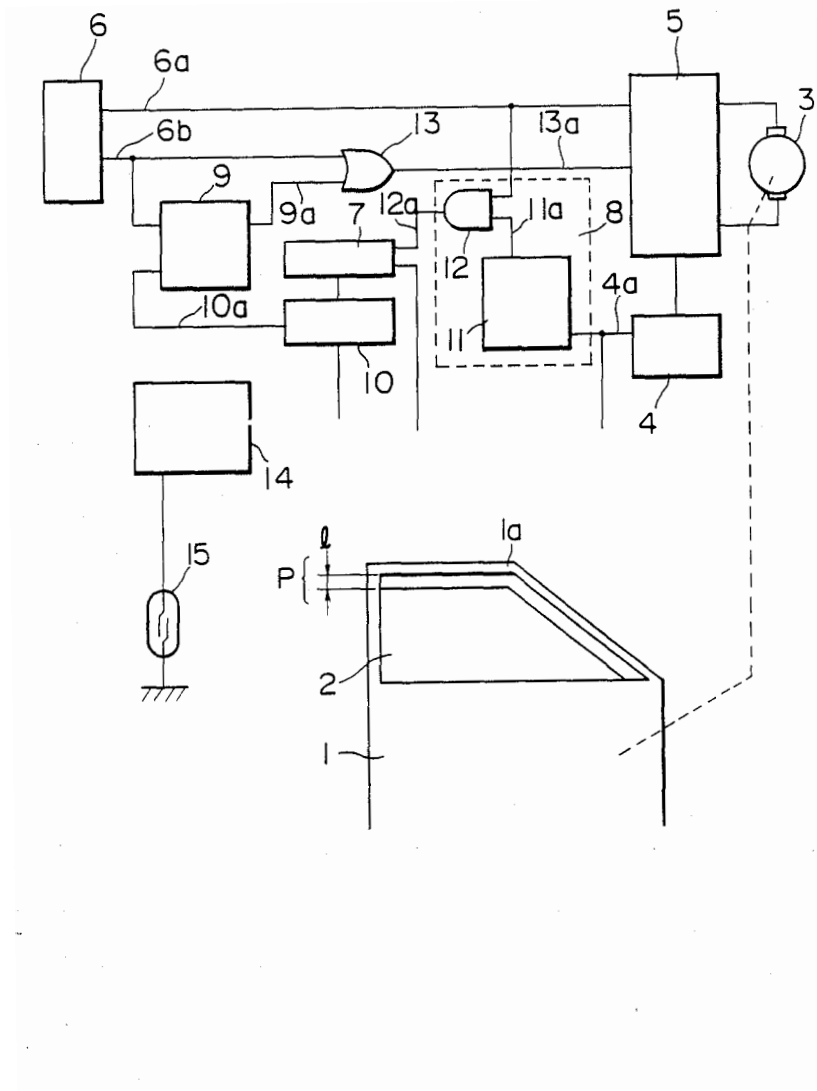
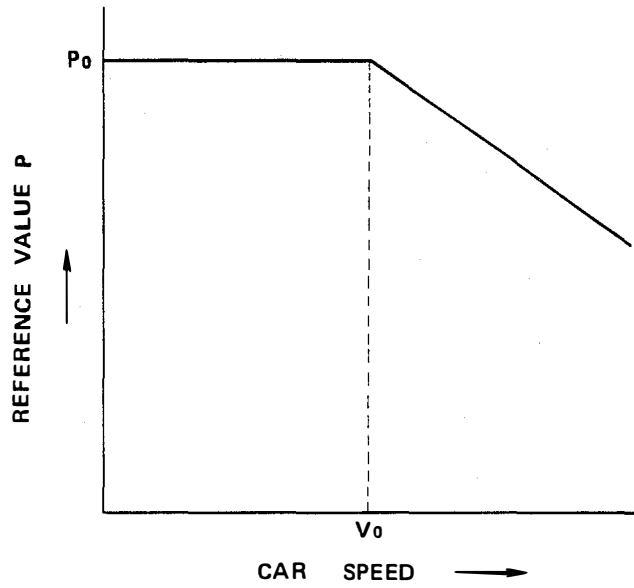


FIG. 4



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