

[54] AUTOMATIC OPENING AND CLOSING DEVICE FOR A WINDOW

4,563,625 1/1986 Kornbrekke et al. 318/603
4,608,637 8/1986 Okuyama et al. 318/466

[75] Inventors: Takeshi Itoh, Katsuta; Akihiko Tsukahara, Fujisawa, both of Japan

FOREIGN PATENT DOCUMENTS

2580717 10/1986 France 49/199

[73] Assignee: Jidosha Denki Kogyo Kabushiki Kaisha, Kanagawa, Japan

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

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[57] ABSTRACT

[30] Foreign Application Priority Data

Oct. 3, 1986 [JP] Japan 61-234658
Oct. 9, 1986 [JP] Japan 61-240378

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.

[51] Int. Cl.⁴ H02P 1/22

[52] U.S. Cl. 318/286; 318/266; 318/466

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

[56] References Cited

U.S. PATENT DOCUMENTS

4,035,702 7/1977 Pettersen et al. 318/467 X
4,234,833 11/1980 Barrett 318/468 X
4,514,670 4/1985 Fassel et al. 318/266 X
4,529,920 7/1985 Yoshida et al. 318/466

5 Claims, 12 Drawing Sheets

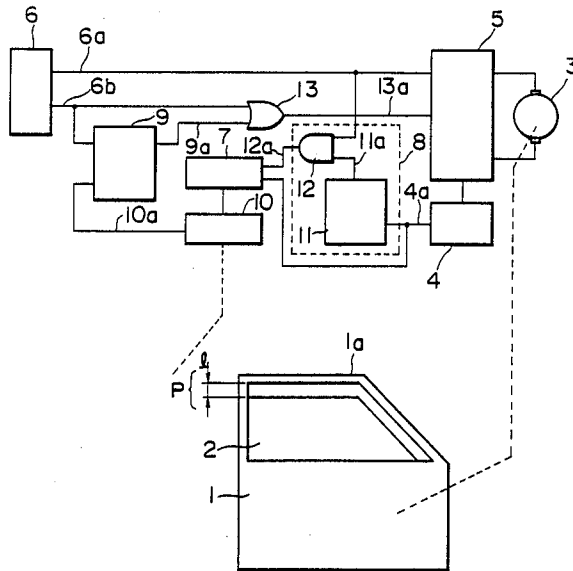


FIG. 1

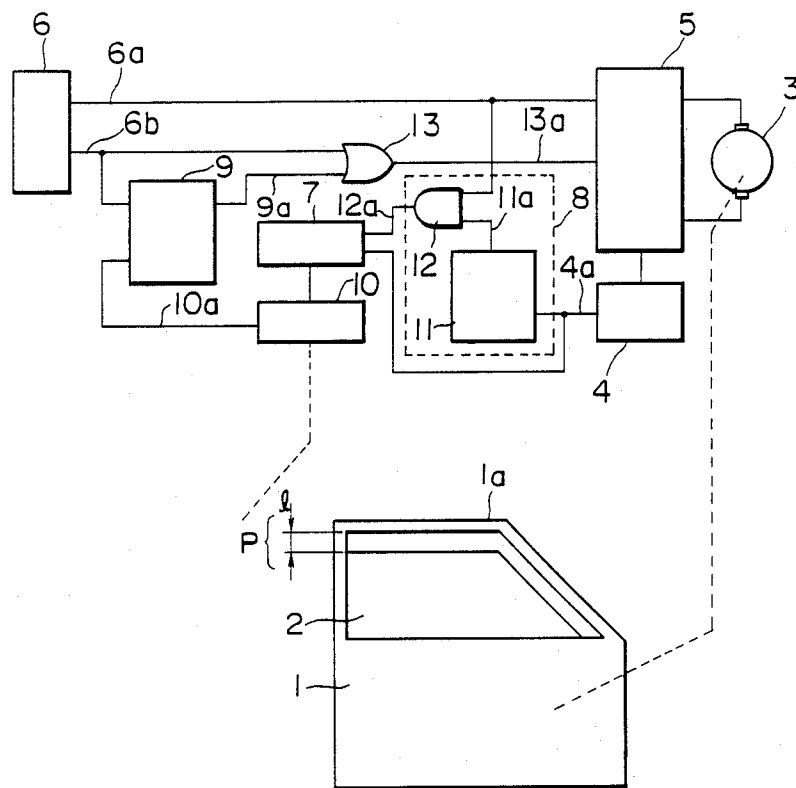


FIG. 2 (a)

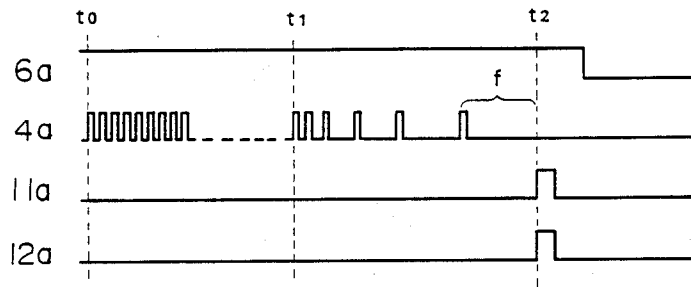


FIG. 2 (b)

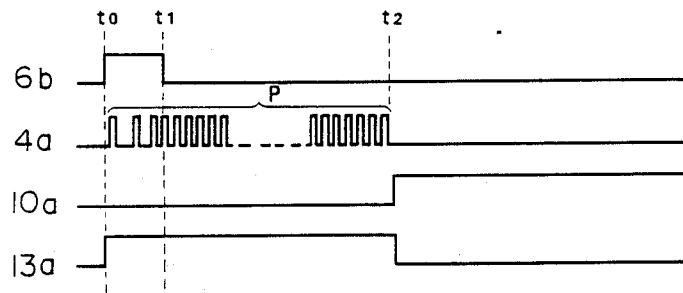


FIG. 2 (c)

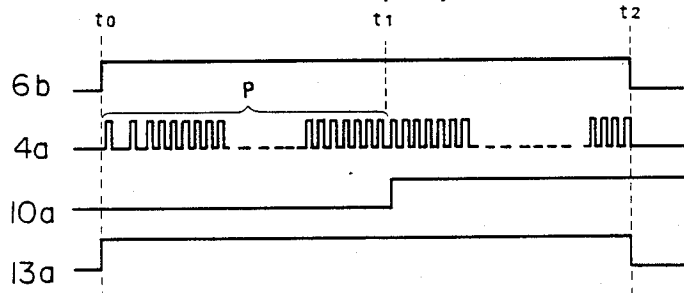


FIG. 3

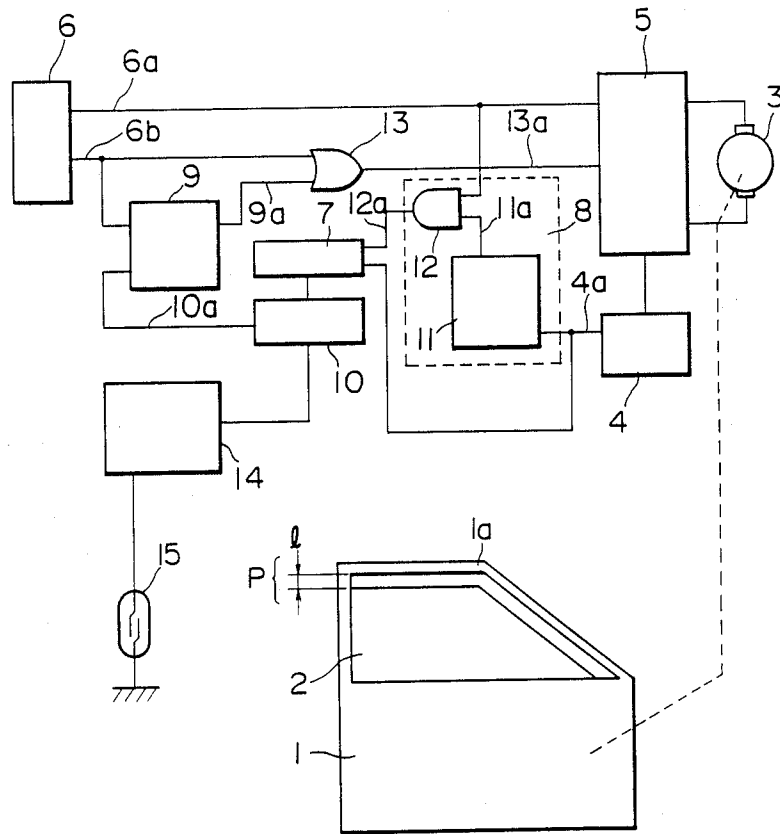
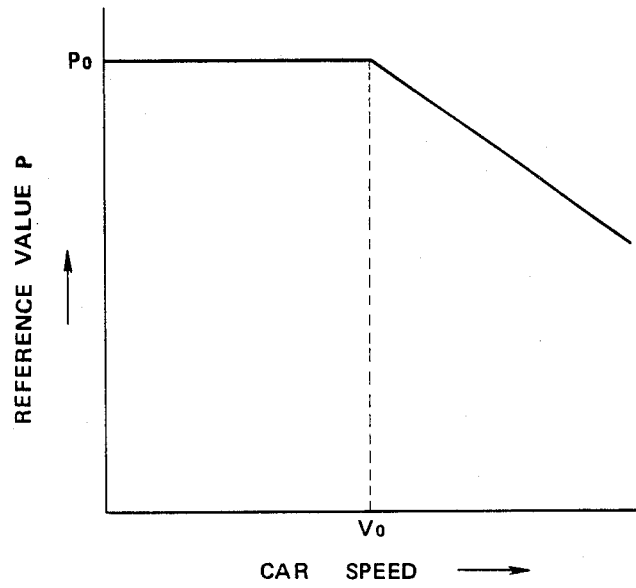


FIG. 4



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