

Title (en)
DOOR CLOSER

Publication
EP 0409445 B1 19930512 (EN)

Application
EP 90307271 A 19900703

Priority
JP 18958989 A 19890721

Abstract (en)
[origin: EP0409445A1] A door closer has a main shaft (2) connected to a door, a piston (11) reciprocally moved in a case (1) in response to the movement of the door, a first and a second pressure chamber (A, B) operated by the piston (11), and four hydraulic oil passages (P1, P2 --- P4) for communicating and stopping communicating the two pressure chambers (A, B) with each other. A door stop releasing angle adjusting mechanism (15) for adjusting an angle at which the door is kept open is provided between the piston (11) and the end postion (14) of the case (1).

IPC 1-7
E05F 3/10; **E05F 3/12**; **E05F 3/22**

IPC 8 full level
E05F 3/20 (2006.01); **E05F 3/10** (2006.01); **E05F 3/12** (2006.01); **E05F 3/22** (2006.01)

CPC (source: EP)
E05F 3/104 (2013.01); **E05F 3/12** (2013.01); **E05F 3/223** (2013.01); **E05Y 2900/132** (2013.01)

Cited by
EP0545624A3; CN105392952A; CN102220823A; CN110630130A; EP2508702A3; GB2573376A; CN103658582A; GB2525444A; EP0684360A1; CN104989208A; CN105370127A; EP0663503A1; US2013160238A1; US8720005B2; US6976289B1; EP0606168A1; AU666058B2; CN110965886A; CN112554694A; WO2011160785A1; WO0042282A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
EP 0409445 A1 19910123; **EP 0409445 B1 19930512**; DE 69001591 D1 19930617; DE 69001591 T2 19931216; JP 2854614 B2 19990203; JP H0355376 A 19910311

DOCDB simple family (application)
EP 90307271 A 19900703; DE 69001591 T 19900703; JP 18958989 A 19890721