

(12)

**EUROPEAN PATENT APPLICATION**

(21) Application number: 82100089.0

(51) Int. Cl.<sup>3</sup>: E 05 F 3/10

(22) Date of filing: 08.01.82

(30) Priority: 14.01.81 IT 330781

(43) Date of publication of application:  
21.07.82 Bulletin 82/29

(88) Date of deferred publication of search report: 23.02.83

(84) Designated Contracting States:  
AT BE CH DE FR GB LI LU NL SE

(71) Applicant: MAB MASELLIS S.p.A.  
Via del Tuscolano 6  
I-40128 Bologna(IT)

(72) Inventor: Masellis, Domenico  
Via Laura Bassi 14  
I-40137 Bologna(IT)

(74) Representative: Porsia, Dino, Dr. et al,  
c/o Succ. Ing. Fischetti & Weber Via Caffaro 3  
I-16124 Genova(IT)

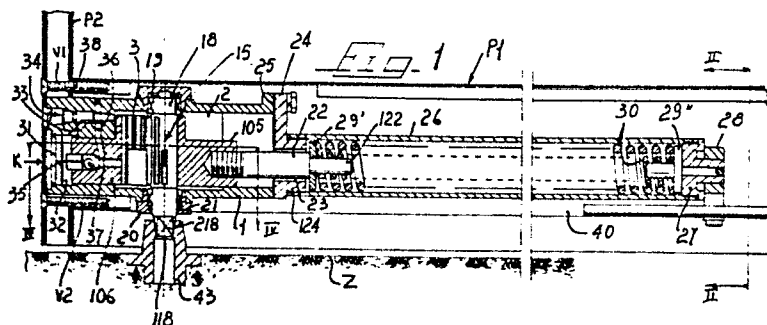
(54) A door closer.

(57) The door closer comprises:

- a toothed sector or pinion (15) having a shaft (18) which is rotatably supported by the body of said door closer, said shaft extending with an end portion so as to be keyed to a seat member (43) secured to the floor and to be used as one of the hinge pins upon which the door rotates; wherein the toothing of said pinion is comprised within an angle equal or less than 180°, and wherein the first tooth and the last tooth (16, 17) of said pinion are of shorter length than the other teeth and are located preferably at the same level;

- a body of annular configuration formed by a pair of similar racks (3, 4) in parallel and opposite relationship receiving said pinion (15) therebetween, the pinion being of such a size as to mesh with either rack with no sliding

movement; said annular body being guided longitudinally in the door closer and being urged longitudinally, in a predetermined direction, by suitable adjustable resilient means (30), the arrangement being such that, with the door closer at rest, the first and the last tooth (16, 17) of the pinion engage the first recesses (44, 45) at one end of each rack, so that the door will be kept firmly and with no backlash in the closed position (so-called 0° position); the teeth of both racks, excepted the last tooth of each rack which is of full length, being of reduced length and being located at a staggered level with respect to the teeth of reduced length of said pinion, so that during the opening of the door, when one rack rolls around the pinion (15) the teeth of the said pinion will not interfere with the teeth of the other rack.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Y	--- GB-A- 684 207 (ELLISON BRONZE)  *Page 1, lines 71-98; page 2, lines 1-34; figures 1-3*	1, 2, 3, 4	E 05 F 3/10
Y	--- GB-A- 663 592 (S.B & N. LTD SHELDON) *Page 2, lines 57-79, 125-130; page 3, lines 1-13; figures 2, 3, 5, 6*  -----	1, 2, 3	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			E 05 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 24-11-1982	Examiner NEYS B.G.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons  & : member of the same patent family, corresponding document	