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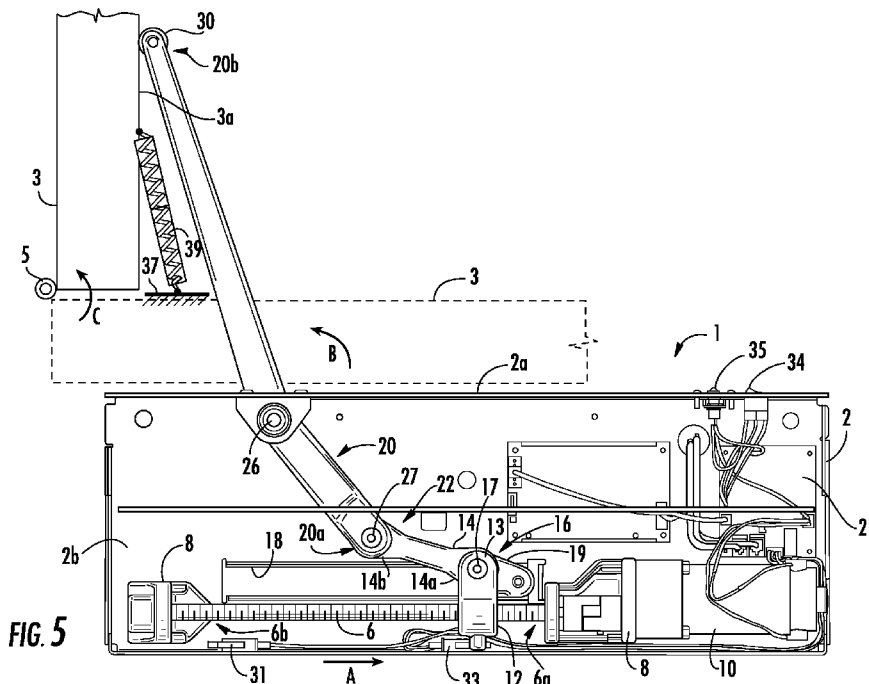
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(54) Title: AUTOMATIC DOOR OPENER



(57) Abstract: A door opener for opening a door having an external surface comprises a screw mounted for rotary motion and a carriage mounted on the screw such that rotation of the screw causes motion of the carriage along the screw. A motor rotates the screw. An actuator arm has a first end and a second end, where the actuator arm is operatively connected to the carriage such that movement of the carriage causes the actuator arm to move between a retracted position where the door is closed and an extended position where the door is open. The first end of the actuator arm is in contact with but not connected to the external surface of the door such that the first end of the actuator arm rides over the external surface of the door.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2011/045829

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - E05F 11/24 (2011.01)

USPC - 49/346

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - E05F 11/00, 11/24, 11/26, 11/28, 11/54 (2011.01)

USPC - 16/50, 63, 65, 67-68, 71, 78, 80; 49/28, 139-140, 324-325, 333-337, 339-342, 345-346, 357-359

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent, Google Patents, Google Scholar

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7,373,756 B2 (OKULOV et al) 20 May 2008 (20.05.2008) entire document	1-2, 4-13, 15-20
Y		3, 14
Y	US 5,507,120 A (CURRENT) 16 April 1996 (16.04.1996) entire document	3, 14
A	US 6,754,990 B2 (PEDEMONTE) 29 June 2004 (29.06.2004) entire document	1-20
A	US 6,138,412 A (RIECKMANN et al) 31 October 2000 (31.10.2000) entire document	1-20
A	US 5,243,784 A (WHITAKER et al) 14 September 1993 (14.09.1993) entire document	1-20

 Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search

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