

1) Family number: 33125094 (WO06074782 A1)

© PatBase

Title: SLIDING DOOR COMPRISING A MAGNETIC DRIVE SYSTEM AND CONTROL DEVICE**Priority:** DE200510002040 20050114**Family:**

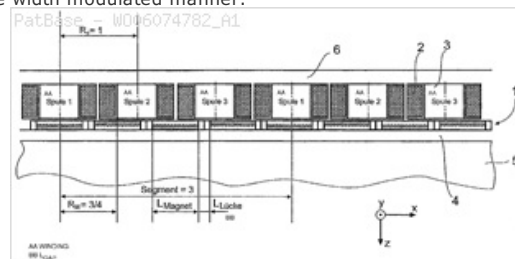
Publication number	Publication date	Application number	Application date
DE102005002040 A1	20060727	DE200510002040	20050114
WO06074782 A1	20060720	WO2005EP13395	20051213

Probable Assignee: DORMA GMBH AND CO KG**Assignee(s):(std):** BUSCH SVEN ; DORMA GMBH AND CO KG**Inventor(s):(std):** BUSCH SVEN

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8-9): E05D15/06 E05F15/00 E05F15/18 E05F15/60 H02K41/02**CPC:** E05D15/0626 E05D2015/0695 E05F15/60 E05Y2900/132[Classification Explorer](#)**Cited documents:** JP8275493, DE4016948 A1, EP0676525 A1, EP0433830 A1, US5712516 A, DE19618518 C1, JP2003214032 A2, JP8232542 A2, EP0676527 A1, DE68910580 T2,**Abstract:**

The invention relates to a sliding door comprising a magnetic drive system for at least one door leaf, comprising a row of magnets which are arranged in the drive direction, whereby the magnetisation thereof changes its polarity in the longitudinal direction thereof at specified intervals, and a support carriage whereon the door leaf can be secured, in addition to a winding assembly which consists of several individual windings and cores, said assembly causing an interaction with the row of magnets (1) that initiates feed forces when the individual windings are controlled in a corresponding manner, and a control element which controls the individual windings or groups of individual windings in a pulse width modulated manner.

**2) Family number: 29585586** (US4698876 A)

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Title: DOOR APPARATUS PARTIALLY SUPPORTED BY A MAGNETIC MECHANISM

Priority: JP19850040421U 19850320 JP19850040422U 19850320 JP19850040423U 19850320
JP19850075382U 19850521

Family:

Publication number	Publication date	Application number	Application date
DE3663376 D1	19890622	DE19863663376T	19860312
EP0195585 A2	19860924	EP19860301768	19860312
EP0195585 A3	19870121	EP19860301768	19860312
EP0195585 B1	19890517	EP19860301768	19860312
JP1999690 Y	19940826	JP19850040421U	19850320
JP5013897 Y2	19930413	JP19850040421U	19850320
JP61157675 U1	19860930	JP19850040421U	19850320
JP1999691 Y	19940826	JP19850040422U	19850320
JP5013898 Y2	19930413	JP19850040422U	19850320
JP61157676 U1	19860930	JP19850040422U	19850320
JP61157677 U1	19860930	JP19850040423U	19850320
JP1999693 Y	19940826	JP19850075382U	19850521
JP5013899 Y2	19930413	JP19850075382U	19850521
JP61189973 U1	19861126	JP19850075382U	19850521
US4698876 A	19871013	US19860841157	19860319
US4876765 A	19891031	US19880214865	19880701

Probable Assignee: SHINKO ELECTRIC CO LTD**Assignee(s):(std):** SHINKO ELECTRIC CO LTD**Assignee(s):** SHINKO ELECTRIC CO ; SHINKO ELECTRIC CO LTD A CORP OF JAPAN ; 神鋼電機株式会社**Inventor(s):(std):** KARITA MITSUJI**Inventor(s):** 苅田 充二**Designated states:** DE FR GB

International class (IPC 8-9): E05D15/06 E05F15/00 E05F15/18 E05F15/60 H02K41/025 H02N15/00

International class (IPC 1-7): E05D15/06 E05F15/18

CPC: E05D15/06 E05D15/063 E05D2015/0695 E05F15/60 E05Y2900/132 H02K41/025 H02N15/00 Y10T16/35 Y10T16/3825

US class: 16/102 16/87.00R 16/87R 49/409

[Classification Explorer](#)

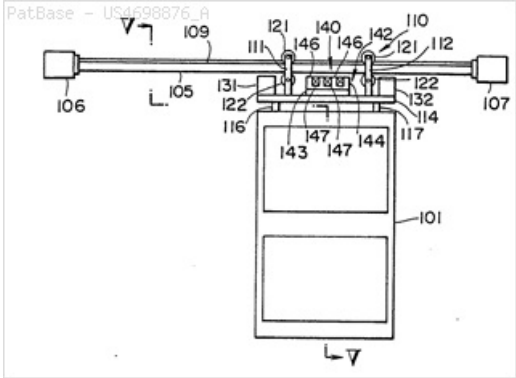
Cited documents: US4698876 A, US3346993 A, US4473259 A, US4452014 A, US4381876 A, US4072110 A, US3741613 A, US3667398 A, US3441331 A, US3346443 A, US1881015 A, AU417134 A1, JP57049194 B4, JP49116512 B4, JP57049194 U1, JP49116512 U1, US3937149 A, US3413759 A, FR1580187 A, FR2141088 A5, EP0121007 A1, DE2925867 A1, DE2336310 A1, AU417134 B1,

Forward Citations: JP2004116283 A2, CN100357562 C, US9249609 BB, US2008202860 AA, US2010126073 AA, US2007119659 AA, US2009211162 AA, US6291037 BA, US2005235567 AA, US2005205362 AA, US2004074046 AA, US2004055829 AA, US2014090301 AA, US8707626 BB, US6098341 A, US5503248 A, DE10257582 A1, US8132653 BB, US8109040 BB, US6943508 BB, US7202615 BB, US7537091 BB, US5668355 A, US10597920 BA, US10577844 BB, US2016340952 AA, CN1087270 C, CN1087267 C, EP1794398 B1, EP0402091 B1, EP1217161 A3, WO11129918 A2, US9938116 BB, US9879458 BB, US2017051549 AA, EP1217160 A3, JP2667128 B2, US9433306 BB, US2015211276 AA, US2008209813 AA, US2010307189 AA, US2009044916 AA, WO06032157 A1, US2006242908 AA, US2006150518 AA, US9101239 BB, US9062911 BB, US2014318408 AA, US2013160955 AA, US2012048657 AA, US2013008090 AA, US8407941 BB, US2011265382 AA, US4876765 A, US5862887 A, US5841082 A, US5756946 A, US5736693 A, EP0841290 A1, EP0841287 A1, US6640388 BB, US2012233926 AA, US8274188 BB, US5970578 A, US5594316 A, EP0402091 A1, US8020346 BB, JP7285762 A2, EP1217160 A2, EP1217161 A2, US6832449 BB, US7752810 BB, US7013605 BB, US5808246 A, US5682023 A, US5495918 A, US5373120 A, JP2006509487 T2, JP4451544 B2, JP2001349044 A2,

DE102004050334 C5

DE4016948 A1, EP0676359 A3, EP1988245 A1, WO15074732 A1, NL8600609 A1, EP0241063 A1, US5696417 A, EP0755110 A1, NL8600609 A, EP0676359 A2, EP0761354 A1, US5612518 A,

Abstract:
A door apparatus includes a door movable between a closed position and an open position with respect to a stationary structure, and a support device for supporting the door. The support device includes a magnet mounted on one of the door and the stationary structure, and a member of a magnetic material mounted on the other of the door and the stationary structure. The magnet and said magnetic member cooperates with each other to produce a magnetic force therebetween to support at least part of the weight of the door.



3) Family number: 32835966 (EP1647655 A2) © PatBase

Title: SLIDING DOOR WITH A DRIVE SYSTEM WITH A MAGNET ARRAY

Priority: DE200410050337 20041017 EP20050019301 20050906

Family:

Publication number	Publication date	Application number	Application date
DE102004050337 B3	20060202	DE200410050337	20041017
DE502005014629 D1	20150226	DE200550014629T	20050906
EP1647655 A2	20060419	EP20050019301	20050906
EP1647655 A3	20100818	EP20050019301	20050906
EP1647655 B1	20141224	EP20050019301	20050906
ES2533454 T3	20150410	ES20050019301T	20050906

Probable Assignee: DORMA DEUTSCHLAND GMBH

Assignee(s):(std): DORMA GMBH AND CO KG

Assignee(s): DORMA DEUTSCHLAND GMBH

Inventor(s):(std): BUSCH SVEN

Agent(s): BALDER IP LAW SL; VALLEJO JUAN PEDRO

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

International class (IPC 8-9): E05D15/06 E05F15/00 E05F15/18 E05F15/60 H02K1/27 H02K15/00 H02K16/00 H02K3/18 H02K3/28 H02K41/03 H02K7/09 H02N15/00

CPC: E05D15/0626 E05F15/60 E05Y2900/132 H02K1/276 H02K16/00 H02K2213/12 H02K3/18 H02K3/28 H02K41/031 H02K7/09 H02N15/00

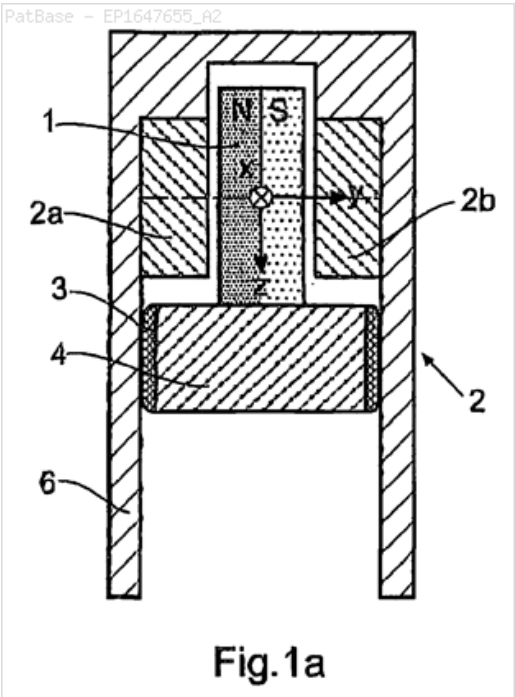
[Classification Explorer](#)

Cited documents: WO04093301 A1, WO9413055 A1, US2004256919 AA, DE19725525 A1, WO0050719 A1, DE4111853 C2, DE4016948 A1, DE19618518 C1, DE19547686 A1, DE10257583 B3,

Forward Citations: CN105041095 A, US10181780 BB, US10177640 BB, US9997985 BB, US9689712 BB,

DE102012204916 A1

Abstract:
Sliding door comprises a magnetic drive system for a door leaf (5), a linear drive unit hanging a row of magnets (1e, 1f) arranged in the drive direction and a coil arrangement with cores (12). Each second core is provided with a winding (7). The row of magnets changes the polarity in the longitudinal direction at determined distances. Preferred Features: The coil arrangement is controlled in a three-phase manner. The winding fills the space between the coil cores. At least one of the rows of magnets consists of high performance magnets of the NeFeB or Sm 2Co type.



Family number: 32856528 (DE102004050316 A1)

Title:

SLIDING DOOR FOR DOOR WINGS HAS MAGNETIC LINING, WITH SOFT AND HARD MAGNETIC SUPPORT ELEMENT, MAGNETIZED TRANSVERSE TO SUPPORTING DIRECTION WHEREBY MAGNETIZATION IN DIRECTION OF MOTION IS SUCH THAT SIGNS OF MAGNETIC LINES ARE CHANGED

Priority:

DE200410050316 20041017

Family:

Publication number	Publication date	Application number	Application date
 DE102004050316 A1	20060427	DE200410050316	20041017

Probable Assignee:

DORMA GMBH AND CO KG

Assignee(s):(std):

DORMA GMBH AND CO KG

Inventor(s):(std):

BUSCH SVEN

International class

E05D15/06

IPC 8-9):

CPC:

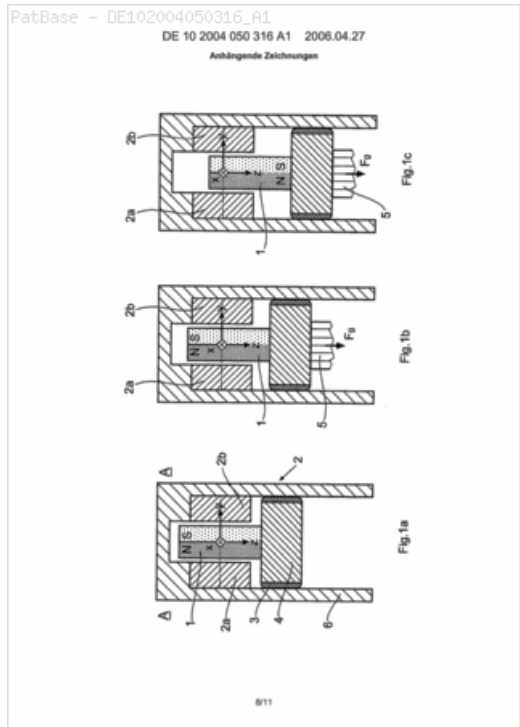
E05D15/0626 E05F15/60 E05Y2900/132 H02K41/03 H02N15/00

[Classification Explorer](#)

Forward Citations:

AT520731 B1, AT520731 A4,

Abstract:
The sliding door has magnetic lining (1) having magnetic force action with soft and hard magnetic support elements (2a,2b). Guide element (3) is provided which ensures an opening between magnetic lining and support element. Magnetic lining is magnetized transverse to supporting direction. Magnetization in the direction of motion is such that the signs of magnetic lines are changed.



5) Family number: 32838881 (WO06039972 A1)

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Title: SLIDING DOOR COMPRISING A MAGNETIC SUPPORT AND DRIVE SYSTEM

Priority: DE200410050340 20041017 WO2005EP09772 20050912

Family:	Publication number	Publication date	Application number	Application date
	DE102004050340 A1	20060420	DE200410050340	20041017
	DE102004050340 B4	20071220	DE200410050340	20041017
	EP1805384 A1	20070711	EP20050784391	20050912
	EP1805384 B1	20160720	EP20050784391	20050912
	WO06039972 A1	20060420	WO2005EP09772	20050912

Probable Assignee: DORMA DEUTSCHLAND GMBH

Assignee(s):(std): BUSCH SVEN ; DORMA DEUTSCHLAND GMBH ; DORMA GMBH AND CO KG

Inventor(s):(std): BUSCH SVEN

Agent(s): BALDER IP LAW SL

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class (IPC 8-9): E05D15/06 E05F15/00 E05F15/18 E05F15/60 H02K41/03

CPC: E05D2015/0695 E05F15/60 E05Y2201/46 E05Y2201/462 E05Y2201/696 E05Y2600/12 E05Y2600/20 E05Y2600/314 E05Y2600/634 E05Y2900/132

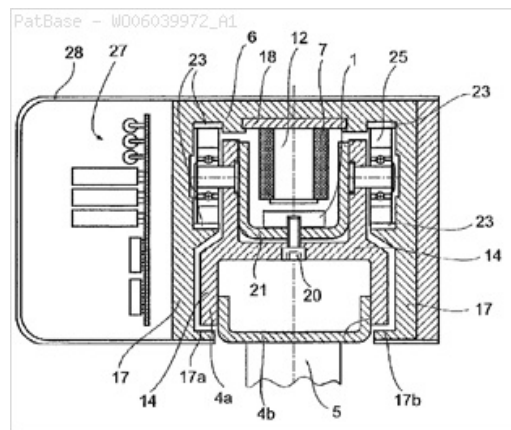
[Classification Explorer](#)

Cited documents: EP1122391 A2, US2003110696 AA, DE4425053 A1, EP1122391, WO0050719 A1, DE4016948 A1, DE19618518 C1, WO9413055 A1,

Forward Citations: ES2401861 AA, RU198241 U1, US9879458 BB,

Abstract:

The invention relates to a sliding door comprising a magnetic support and drive system for at least one door leaf (5). Said system comprises a row of magnets (1), which is arranged in the drive direction and whose magnetisation changes its polarity in the longitudinal direction at specified intervals and a winding assembly consisting of several individual windings (7) and cores (12), said assembly causing an interaction with the row of magnets (1) that initiates feed forces when the individual windings (7a-c) are controlled in a corresponding manner. According to the invention, the cores (12) or pole shoes lying against said cores interact by force of attraction with the row of magnets (1). The system also comprises a guide element (25), which safeguards a specific gap interval (a) between the row of magnets (1) and the cores (12) or the pole shoes, a support carriage (4), to which the door leaf can be fixed (5) and an adjusting unit for the load capacity (19, 20), which is used to set the specific gap interval (a).



6) Family number: 44560024 (KR200424933 Y1)

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Title: MAGNETIC LEVITATION SLIDING DOOR

Priority: KR20060011877U 20060503

Publication number	Publication date	Application number	Application date
KR200424933 Y1	20060829	KR20060011877U	20060503

Probable Assignee: CHOI YONGHWAN

Assignee(s): CHOI YONGHWAN ; 최용환

Inventor(s): 최용환

International class
(IPC 8-9): E05F15/00 E05F15/06 E05F15/56

CPC: E05D15/06 E05D15/565 E05F15/635 E05F15/641 E05F7/02 E05Y2201/46

[Classification Explorer](#)

Forward Citations: CN107288478 B, CN107288478 A, KR200472079 Y1, KR100894563 B1, KR101054730 B1,

Abstract:

Source: KR200424933 Y1 **Machine translation:** The idea which it sees [sul] [ting] travelling method of the door of existing own extra prize which uses magnetism about under using the enemy in order to travel with a force softly, description below with the fact that for the door [enc] the tongue in order about under installing to diminish the friction force which by repelling power of the magnet is caused by meaning of a passage load, the magnet in upper glide department of the lower part rail which falls and the door and in order to prevent the disconnection of upper glide department and the lower part rail the wheel in upper glide department it installs and to the lower part rail the disconnection prevention chin own extra prize which minimizes rubbing about under composing [sul] [ting] is the door. Own extra prize, [sul] [ting], [sul] [ting] the door and automatic it bit, the clutch, the magnet and magnetism

7) Family number: 43704966 (DE102008012854 A1)

© PatBase

Title: SLIDING DOOR ARRANGEMENT FOR E.G. VAN, HAS GUIDANCE MAGNETIC UNIT ATTACHED TO GUIDE AND CARRIER ELEMENTS, SO THAT SLIDING DOOR IS MAGNETICALLY GUIDED BETWEEN ENCLOSED AND OPENING POSITIONS BY MAGNETIC INTERACTION OF LEVITATION MAGNETIC UNIT

Priority: DE200810012854 20080306

Publication number	Publication date	Application number	Application date
DE102008012854 A1	20090910	DE200810012854	20080306

Probable Assignee: GM GLOBAL TECH OPERATIONS INC

Assignee(s):(std): GM GLOBAL TECH OPERATIONS INC

Assignee(s): GM GLOBAL TECHNOLOGY OPERATIONS INC

Inventor(s):(std): DAMM KARSTEN

International class
(IPC 8-9): B60J5/06 E05D15/06 E05F15/00 E05F15/18 E05F15/60 H02K41/02

CPC: E05D15/1047 E05D2015/0695 E05F15/60 E05F15/632 E05Y2900/531 H02N15/00

[Classification Explorer](#)

Cited documents: EP0741224 B1,

DE102006040070 A1

DE102005009714 A1

Forward Citations: WO20156637 A1,

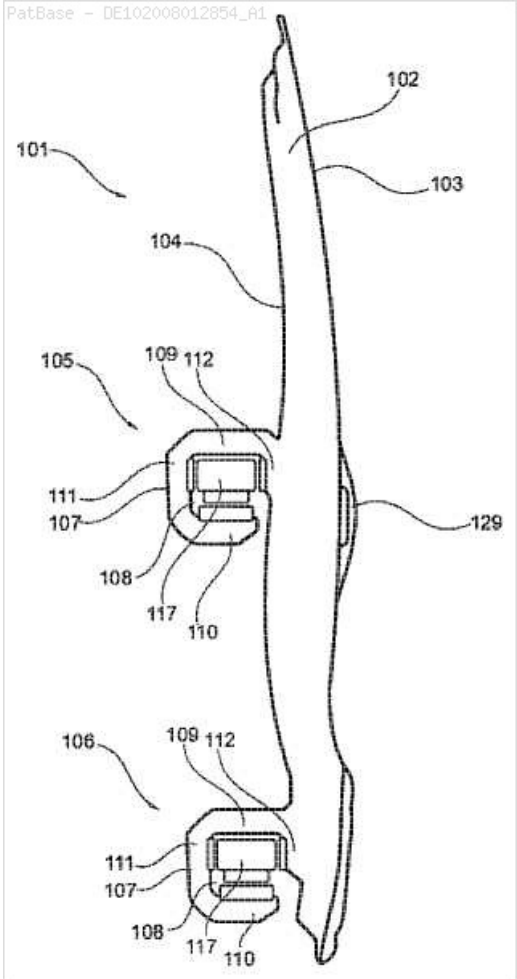
DE102018115798 A1

DE202010004307 U1

Abstract:

The arrangement (101) has levitation magnetic unit attached at an element selected from a guide element (117) and a carrier element (107), so that a sliding door (102) is managed by a magnetic interaction of the levitation magnetic unit with another element for free floating of the door. A set of guidance magnetic units is attached with each other and is attached to the guide element and the carrier element, so that the sliding door is magnetically guided between an enclosed position and an opening

position by the magnetic interaction of the levitation magnetic unit with the latter element.



8) Family number: 32841278 (EP1647656 A2)

© PatBase

Title:

Priority:

Family:

Probable Assignee:

Assignee(s):(std):

Inventor(s):(std):

Designated states:

International class (IPC 8-9):

CPC:

[Classification Explorer](#)

Cited documents:

Forward Citations:

SLIDING DOOR WITH SUPPORTING MECHANISM MOUNTED ON ROLLERS

DE200410050323 20041017

	Publication number	Publication date	Application number	Application date
	DE102004050323 A1	20060420	DE200410050323	20041017
	EP1647656 A2	20060419	EP20050019273	20050906
	EP1647656 A3	20120711	EP20050019273	20050906

DORMA GMBH AND CO KG

DORMA GMBH AND CO KG

BUSCH SVEN

AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

E05D15/06 E05F15/18 E05F15/60

E05D15/063 E05D15/0652 E05D2015/0695 E05F15/60 E05Y2900/132

WO04053265 A1, FR2704993 A1, WO9413055 A1, DE19618518 C1, WO0050719 A1, DE4016948 A1, EP3094801 B1, WO15107463 A1,

Abstract:
Sliding door with door knob (5) has rolling device in which rolling procedure is brought about by a permanent magnet. The permanent magnet rolling mechanism has magnetic row (1,1e,1f) of permanently charged magnets, The attracting force is brought about by at least one soft or hard magnetic row and at least one carrying element (2a,2b,2k,2l,2f).

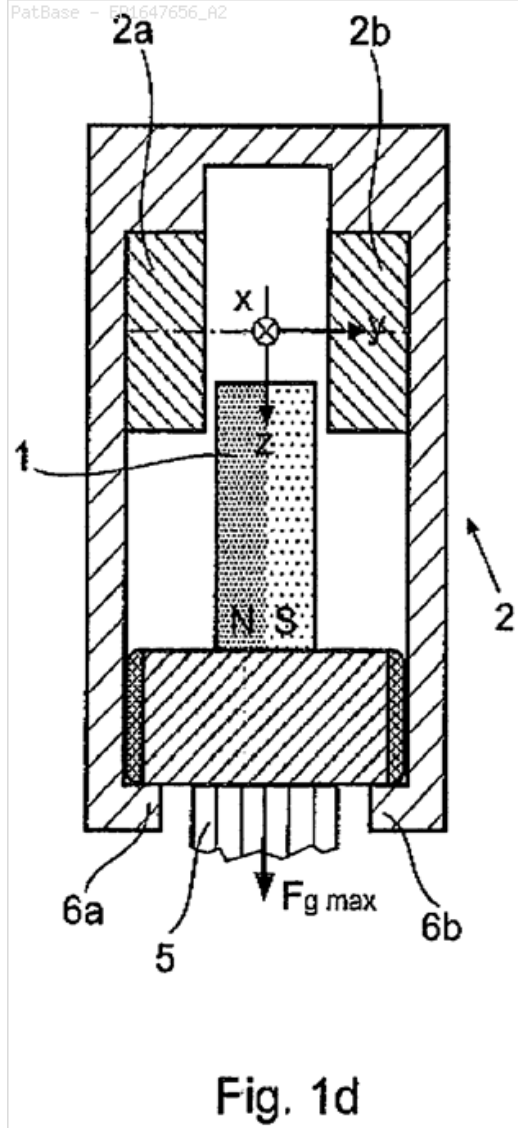


Fig. 1d

9) Family number: 32838882 (WO06039973 A1)

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Title: SLIDING DOOR WITH A DRIVE SYSTEM COMPRISING A SERIES OF MAGNETS
Priority: DE200410050326 20041017 WO2005EP09773 20050912 EP20050787395 20050912
Family:

Publication number	Publication date	Application number	Application date
AT519912 E	20110815	AT20050787395T	20050912
DE102004050326 A1	20060420	DE200410050326	20041017
DE102004050326 B4	20090402	DE200410050326	20041017
DE502005011749 D1	20111006	DE200550011749T	20050912
DK1805385 T3	20111121	DK20050787395T	20050912
EP1805385 A1	20070711	EP20050787395	20050912
EP1805385 B1	20110810	EP20050787395	20050912
ES2370938 T3	20111223	ES20050787395T	20050912
WO06039973 A1	20060420	WO2005EP09773	20050912

Probable Assignee: DORMA GMBH AND CO KG
Assignee(s):(std): BUSCH SVEN ; DORMA GMBH AND CO KG
Assignee(s): DORMA DEUTSCHLAND GMBH
Inventor(s):(std): BUSCH SVEN
Agent(s): BALDER IP LAW SL
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

International class
 (IPC 8-9): E05F15/00 E05F15/18 E05F15/60

International class
 (IPC 1-7): E05F15/18

CPC: E05F15/60 E05Y2900/132 H02K16/00 H02K3/28 H02K41/031 H02K7/09 H02N15/00

[Classification Explorer](#)

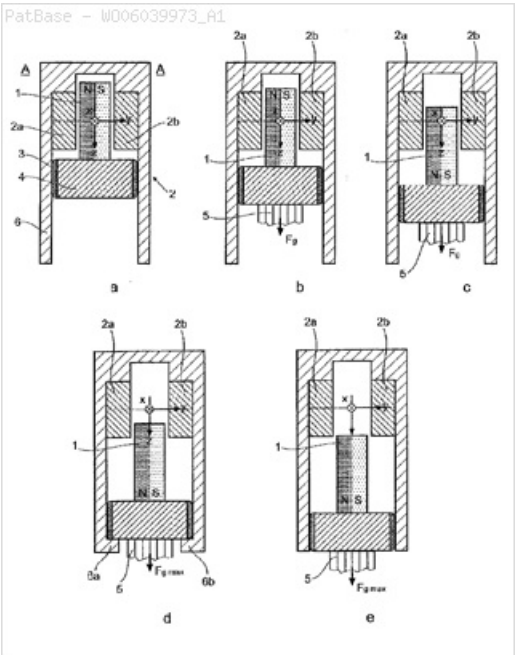
Cited documents: JP5231068, JP2003244928 A2, US4870306 A, WO9413055 A1, DE19618518 C1, WO0050719 A1,

Forward Citations:

DE4016948 A1, DE19547686 A1, DE10257583 B3, DE4111853 C2,
EP3623563 A1, AT521012 A4, AT521012 B1,
DE202013000244 U1
DE202012008675 U1
DE202011103379 U1
DE202011001539 U1
DE202011001540 U1
DE202011001538 U1
DE202011001537 U1
DE202011001535 U1
DE202011001534 U1
DE202011001533 U1
DE102017130881 A1

Abstract:

The invention relates to a sliding door with a magnetic drive system for at least one door leaf (5), with a linear drive unit, comprising at least one series of magnets (1, 1e, 1f), displaceable in the drive direction, the magnetization of which alternates in the longitudinal direction thereof, changing sign at given separations and at least one fixed coil arrangement (13, 13a-c), made up of several individual coils (7). With corresponding control of the individual coils (7), an interaction with the at least one series of magnets (1, 1e, 1f) is generated, which causes the driving force. The fixed coil arrangement (13, 13a-c) is arranged over less than 90 percent of a length of the displacement path (L) of the sliding door.



10) Family number: 9940974 (US5373120 A)

PatBase

Title: LINEAR DOOR MOTOR SYSTEM FOR ELEVATORS
Priority: US19930029203 19930310
Family:

Publication number	Publication date	Application number	Application date
■ CN1101889 A	19950426	CN19941004257	19940310
■ EP0614844 A2	19940914	EP19940301697	19940310
■ EP0614844 A3	19950125	EP19940301697	19940310
■ FI941123 A	19940911	FI19940001123	19940309
■ FI941123 A0	19940309	FI19940001123	19940309
■ JP6321470 A2	19941122	JP19940040189	19940310
■ KR19940021407 A	19941017	KR19940004686	19940310
■ KR940021407 A	19941017	KR19940004686	19940310
■ RU2124469 C1	19990110	RU19940007643	19940310
■ RU94007643 A	19960827	RU19940007643	19940310
■ SG48881 A1	19980518	SG19960003343	19940310
■ TH19470 A	19960702	TH19941000450	19940310
■ US5373120 A	19941213	US19930029203	19930310

Probable Assignee: OTIS ELEVATOR CO
Assignee(s):(std): OTIS ELEVATOR CO ; OTIS ILIVEJTOR KOMPANI
Assignee(s): OTIS ELEVATOR COMPANY ; ОТИС ИЛИВЕЙТОР КОМПАНИ ; Отис Иливейтор Компани (US) ; □□□□□□□□□□ □□□□□□ ; オーチスエレベータカンパニー ; 奥蒂斯电梯公司 ; 오티스 엘리베이터 캄파니
Inventor(s):(std): AANESUTO PII GIYAGUNON ; BARRETT DAVID W ; BIALY LOUIS ; DEHVID V BEHRRETT ; DEIBUITSUDO DABURIYUU BAARETSU ; EHRNEST P GEHGNON ; GAGNON ERNEST P ; L JUIS BAJEHLI ; PERUGGI RICHARD E ; RICHARD E PERUGGI ; RICHYAADO II PERATSUJI ; RUISU BAIARII

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

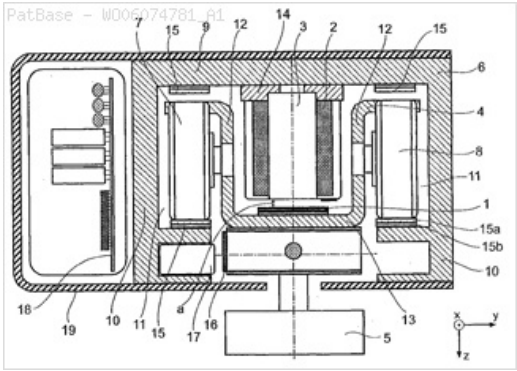
International class
(IPC 8-9): E05D15/06 E05F15/00 E05F15/18 E05F15/60

CPC: E05D15/0626 E05D2015/0695 E05F15/60 E05Y2900/132

[Classification Explorer](#)

Cited documents: JP2003244928, DE19618518 C1, WO9413055 A1, EP0433830 A1, JP2003214032 A2, JP8232542 A2, DE69003365 T2, DE10257583 B3, DE10300877 B3,

Abstract:
The invention relates to a sliding door comprising a magnetic drive system for at least one door leaf. Said system comprises a row of magnets which are arranged in the drive direction, whereby the magnetisation thereof changes the polarity in the longitudinal direction thereof at specified intervals, and a winding assembly consisting of several individual windings, cores and winding wires, said assembly causing an interaction with the row of magnets that initiates feed forces when the individual windings are controlled in a corresponding manner. The power conducting parts comprise an electromagnetic housing which protects against waves, fields and radiation.



12) Family number: 48652861 (DE202011001534 U1) © PatBase

Title: PLINTH WITH INTEGRATED LINEAR DRIVE (Machine translation)

Priority: DE201120001534U 20110116

Family:

Publication number	Publication date	Application number	Application date
DE202011001534 U1	20110428	DE201120001534U	20110116

Probable Assignee: GINZEL LOTHAR

Assignee(s):(std): GINZEL LOTHAR

International class
(IPC 8-9): E05F15/18 E05F15/60 E06B1/14 E06B1/52 E06B3/46

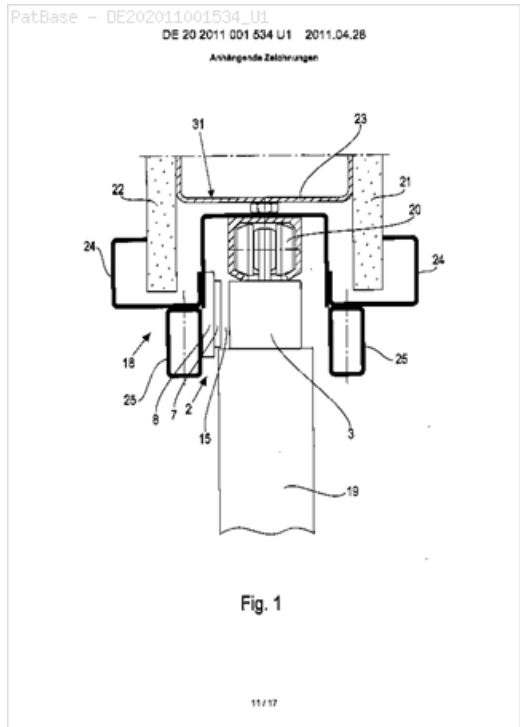
CPC: E05F15/60 E05Y2900/14 E06B3/4654

[Classification Explorer](#)

Cited documents: DE29900134 U, DE29912367 U, US2008224557 AA, DE102004050326 B4, WO9413055 A1, DE3635258 C1,

Forward Citations: ITMI20130116 A1,

Abstract:
Source: DE202011001534 U1 **Machine translation:** (Claim 1) 1 frame (18) with a horizontally movable Schiebefluegel (19) for mounting in a Gebaeudeoeffnung, characterized by the integration of a linear electric actuator (1) in the frame (18) for the Schiebefluegel (19).



13) Family number: 69900092 (US2018148965 AA)

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Title: MAGNETIC LEVITATING DOOR

Priority: US20160427024P 20161128 US20170525118P 20170626 US20170723045 20171002
WO2017US62633 20171120 US20180032455 20180711 US20190392347 20190423
US20190541640 20190815 US20200749895 20200122

Family:	Publication number	Publication date	Application number	Application date
	AU2017363580 AA	20190523	AU20170363580	20171120
	BR112019010078 A2	20191203	BR20191110078	20171120
	CA3044430 AA	20190517	CA20173044430	20171120
	CL2019001347 A1	20190726	CL20190001347	20190517
	CN109790733 A	20190521	CN201780050876	20171120
	CO20190005097 A2	20190619	CO20190005097	20190517
	DOP2019000125 A	20190930	DO20190000125	20190517
	EP3545155 A1	20191002	EP20170874212	20171120
	ID201906963 A	20190920	ID2019PID01509	20171120
	IL266684 A0	20190630	IL20170266684	20171120
	IN201927006746 A	20190802	IN201927006746	20190220
	JP2020513490 T2	20200514	JP20190548864T	20171120
	KR20190087399 A	20190724	KR20197005097	20171120
	MX2019005807 A1	20190829	MX20190005807	20171120
	PE20191000 A1	20190711	PE20190001023	20171120
	PH2019500364 A	20190603	PH20190500364	20190220
	SG11201901349Q A1	20190328	SG20191101349	20171120
	US10113348 BB	20181030	US20170723045	20171002
	US2018148965 AA	20180531	US20170723045	20171002
	US10316562 BB	20190611	US20180032455	20180711
	US2018320427 AA	20181108	US20180032455	20180711
	US2019330895 AA	20191031	US20190392347	20190423
	US10577844 BB	20200303	US20190541640	20190815
	US2019368252 AA	20191205	US20190541640	20190815
	US2020157866 AA	20200521	US20200749895	20200122
	WO18098088 A1	20180531	WO2017US62633	20171120

Probable Assignee: LAM TONY

Assignee(s):(std): LAM TONY ; TONY LAM

Assignee(s): T 林 ; T·林 ; 램 톤니 ; 램, 톤니-LAM, TONY ; 램 톤니

Inventor(s):(std): LAM TONY ; TONY LAM

Inventor(s): T 林 ; T·林 ; 램 톤니 ; 램, 톤니 ; 램 톤니

Agent(s): ALEX RODRIGO SEVERIN SAAVEDRA; ESTUDIO TRANSGLOBO LTDA; HUGO ARTURO RUBIO GONZALEZ; KLEIN O NEILL AND SINGH LLP; MAROLITA SETIATI; R WILLIAM WRAY AND ASSOCIATES; SPRUSON AND FERGUSON; STETINA BRUNDA GARRED AND BRUCKER; TOMKINS AND CO; WRAY DAVID M; YANG JAMES C; 北京纪凯知识产权代理有限公司 11245; 张凯; 恩田 博宣; 恩田 誠; 本田 淳; 赵志刚; 특허법인 남앤남

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA

ZM ZW

International class (IPC 8-9): A47K3/34 E05D15/06 E05F E05F1/00 E05F15/00 E06B3/46

International class (IPC 1-7): E05F1/00 E05F15/00

CPC: A47K3/34 E05D15/0626 E05D15/0656 E05D15/0691 E05D2015/0695 E05Y2900/114 E06B3/4681 E05Y2201/688

US class: 1/1 49/409

[Classification Explorer](#)

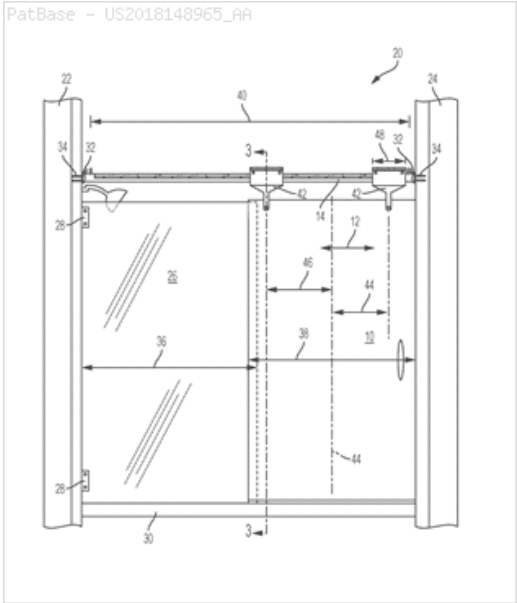
Cited documents: US2018148965 AA, US2016340952 AA, US2004163354 AA, US10316562 BB, US10113348 BB, US9879458 BB, US8646211 BB, US8132653 BB, US6832449 BB, US4698876 A, US4606081 A, US4090265 A, WOWO2011142780, WO11016114 A1, CN105484592 A, WO11142780 A1, JP2004204483 A2, JP2002220179 A2, EP0241063 A1, US2014016885 AA, US2012255229 AA, US9719282 BB, US9433306 BB, US8707626 BB, US8020346 BB, US7752810 BB, US7608949 BB, US7592720 BB, US5134324 A, US4575966 A, US3346993 A, US3334442 A, CN205638021 U, CN205531884 U, JP2014234615 A2,

DE102012015708 A1

CN201687320 U,

Forward Citations: US10206542 BB, USD833263 S1, US2019254486 AA, US10597920 BA, US10577844 BB,

Abstract:
A magnetically levitating door is disclosed herein. The door may have a magnet that is repelled from a magnet of a track. The track may be disposed adjacent to a door opening. The track may have a stabilizing roller to maintain vertical alignment of the magnets used to levitate the door off of the track.



14) Family number: 78022222 (US10597920 BA)

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Title: MAGNETIC LEVITATING DOOR

Priority: US20190846131P 20190510 US20190861196P 20190613 US20190861262P 20190613
US20190892325P 20190827 US20190554084 20190828

Family:

Publication number	Publication date	Application number	Application date
US10597920 BA	20200324	US20190554084	20190828

Probable Assignee: LAM TONY

Assignee(s):(std): LAM TONY

Inventor(s):(std): LAM TONY

Agent(s): KLEIN O NEILL AND SINGH LLP

International class (IPC 8-9): A47K3/34 E05D15/06

CPC: A47K3/34 E05D15/0626 E05D15/0652 E05D2015/0695 E05Y2900/114 E05Y2900/132

[Classification Explorer](#)

Cited documents: WO11142780 A1, US9879458 BB, US9719282 BB, US9433306 BB, US8707626 BB, US8646211 BB, US8132653 BB, US8020346 BB, US7752810 BB, US7608949 BB, US7592720 BB, US6832449 BB, US5134324 A, US4698876 A, US4606081 A, US4575966 A, US4090265 A, US2018148965 AA, US2016340952 AA, US2014016885 AA, US2012255229 AA, US2004163354 AA, US10316562 BB, US3346993 A, US3334442 A, JP2004204483 A2, JP2002220179 A2, EP0241063 A1, US10113348 BB, CN201687320 U, CN105484592 A,

Abstract:
A magnetically levitating door is disclosed herein. The door may have a magnet that is repelled from a magnet of a track. The track may be disposed adjacent to a door opening. The track may have ball bearings to maintain vertical alignment of the magnets used to levitate the door off of the track.

