

1) Family number: 67443114 (US2019142539A)© PatBase

Title:

MAGNETIC SYSTEM TO PREVENT MIGRATION OF INTRA-LUMINAL MEDICAL STENT AND METHOD THEREOF

Priority:

US20160331571P 20160504US20170098143 20170503WO2017US30824 20170503
WO2017US31045 20170504US20170098920 20170504

Family:

Publication number	Publication date	Application number	Application date
US2019142539 AA	20190516	US20170098143	20170503
US2019176833 AA	20190613	US20170098920	20170504
WO17192710 A1	20171109	WO2017US30824	20170503

Probable Assignee:

OF VIRGINIA PATENT FOUNDATION UNIV

Assignee(s):(std):

BROWN WILLIAM BLAKE ; EKONEN TODD R ; GRIFFITH MATT ; HOLLAND MITECHELL ; UNIV OF VIRGINIA PATENT FOUNDATION ; LINAMAR CORP

Assignee(s):

OF VIRGINIA UNIV ; OF VIRGINIA PATENT FOUNDATION UNIV

Inventor(s):(std):

SAWYER ROBERT G ; AILAWADI GORAV ; EKONEN TODD R ; HOLLAND MITCHELL ; BROWN WILLIAM BLAKE ; GRIFFITH MATT

Agent(s):

DECKER ROBERT J

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 JP KE KG KH KM KN KP KR KW KZ LA LC 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):

A61B17/50 A61B17/52 A61B34/00 A61F2/00 A61F2/04 A61F2/82 A61F2/848 A61L31/00 A61M25/00 B60W10/02 B60W30/18 B60W50/00 (Advanced/Invention)

CPC:

A61B17/52 A61F2/82 A61M25/00 A61L31/022 A61L2300/44 A61B17/50 A61B2034/731 A61F2/848 A61F2002/043 A61F2002/044 A61F2002/045 A61F2002/046 A61F2002/9528 A61F2210/009 A61F2220/0008 B60W10/02 B60W50/0097 B60W2720/403 B60W2550/10 B60W2710/021 B60W2550/40 B60W30/18172 A61B34/73

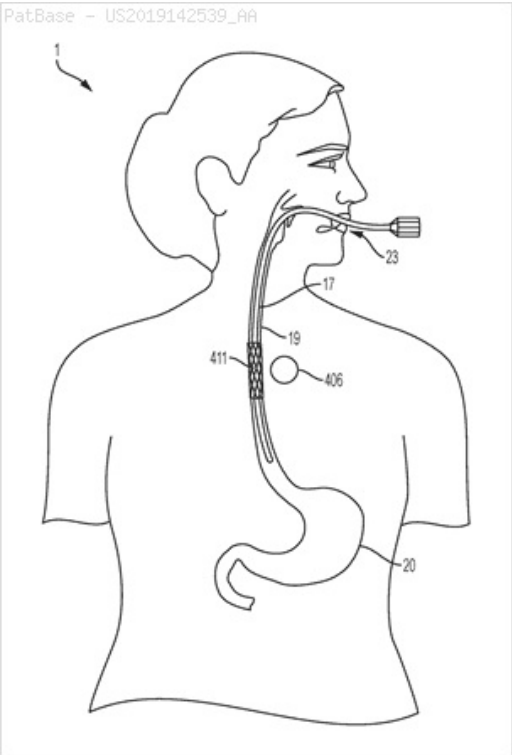
Classification Explorer

Cited documents:

WO11005955 A2, US4809713 A, US2011009690 AA, US2010286791 AA, US2008051823 AA, US2006030865 AA,

Abstract:

Systems and methods for fixing a stent in position in an anatomical lumen. Such systems and methods include an intra-luminal stent and a magnet, implanted, for example, in the subcutaneous layer of the subject. The stent and the magnet are magnetically coupled such that the magnetic forces fix the stent in position. Use of the invention permits fixation of an intra-luminal stent to avoid stent migration while minimizing tissue damage.



2) Family number: 55973163 (US8931792B)

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Title: FOLDING VEHICLE STAIRCASE**Priority:** US20130102599 20131211

Family:	Publication number	Publication date	Application number	Application date
	CA2836378 AA	20140305	CA20132836378	20131212
	CA2836378 C	20150210	CA20132836378	20131212
	US8931792 BA	20150113	US20130102599	20131211

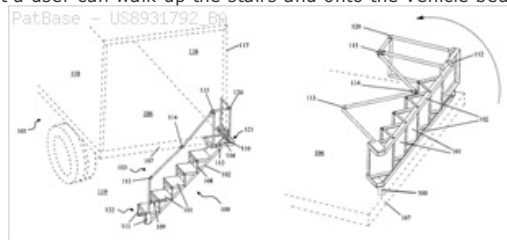
Probable Assignee: KLASSEN FRANK**Assignee(s):(std):** KLASSEN FRANK**Inventor(s):(std):** KLASSEN FRANK**Agent(s):** DEETH WILLIAMS WALL LLP; KAGAN BINDER PLLC**International class (IPC 8-9):** B60P1/00 B60R3/02 (Advanced/Invention)**CPC:** B60R3/02**US class:** 182/65.1 182/67.1 182/67.4 280/166[Classification Explorer](#)

Cited documents: US8668216 BB, US8376084 BB, US8322490 BA, US8186763 BB, US7905324 BB, US7870932 BB, US7753171 BB, US7401798 BB, US7354050 BB, US7080713 BA, US6942271 BA, US6173812 BA, US6173812 B1, US6029775 A, US6003633 A, US5996737 A, US5941342 A, US5397143 A, US5228707 A, US5205603 A, US5199731 A, US5154125 A, US5064023 A, US5046582 A, US5039119 A, US5033582 A, US5026243 A, US4874197 A, US4720116 A, US4669574 A, US4424751 A, US4245716 A, US4139078 A, US3392990 A, US2642217 A, US2013193667 AA, US2013193666 AA, US2013187354 AA, US2011140389 AA, US2010230209 AA, US2010025955 AA, US2009065301 AA, US2009038885 AA, US2006272895 AA, GB2455333 A1, EP0197873 A3, EP0197873 A2, CA2100964 AA,

Forward Citations: US9688204, US2017190293, US10336596, US10100576, US10099623, US10093238, US10005397, CN104494520,

Abstract:

A staircase for a vehicle with a rigid frame attached to a rigid bed connector that is attachable to the bed of a vehicle. The bed connector is pivotably attachable to the bed so that the connector can be rotated between a stowed position in which the connector is above the bed and a deployed position in which the connector extends behind the vehicle bed. The frame is rotatably attached to the bed connector so the frame is rotatable between a deployed position in which an end of the frame rests on the ground and a retracted position in which the frame is parallel to the bed. The bed connector is then rotatable to bring the staircase to stowed position above the vehicle bed. A plurality of steps are attached to the staircase frame so that a user can walk up the stairs and onto the vehicle bed.

**3) Family number: 5117164** (US4615160A)

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Title: ADJUSTABLE STAIRCASE**Priority:** US19850781693 19850930

Family:	Publication number	Publication date	Application number	Application date
	US4615160 A	19861007	US19850781693	19850930

Probable Assignee: LEBLOND MARC**Assignee(s):(std):** LEBLOND MARC**Inventor(s):(std):** LEBLOND MARC**International class (IPC 8-9):** E04F11/025 E04F11/04 E04F11/06 E06C1/54 (Advanced/Invention); E04F11/02 E06C1/00 (Core/Invention)**International class (IPC 1-7):** E02D5/74**CPC:** E04F11/066 E06C1/54 E04F11/0255**European class:** E04F11/025B E04F11/02B2B E04F11/04 E04F11/06 E06C1/54**US class:** 14/71.1 182/1 52/157 52/183[Classification Explorer](#)

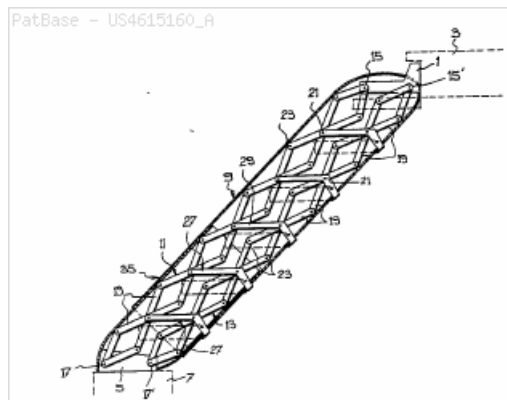
Cited documents: US4527941 A, US3962838 A, US3626438 A, US356523 A, US3265155 A, US2981362 A, US2867855 A, US1912138 A, US188266 A, US1186404 A, GB189716075 A, GB179796 A, GB16075, CA915380 A, CA844261 A, CA324658 A, CA299714 A, CA1151833 A1, CA1044669 A1, CA1040383 A1,

Forward Citations: WO08098110, US8316595, US8091294, US5636483, US2013193667, US2011088341, US2010180525, US2009188444, US2008184502, US2007199258, US2006137266,

Abstract:

Adjustable staircase having a pair of stringers each provided with a pair of pantographs, disposed one above the other, identical in

overall length and having diagonal levers also of equal length, which levers are pivoted at their center and end points. The ends of the pantographs are mounted to connectors that are intended to be fixed to the two different levels that are to be joined. This mounting is such that the ends of the two pantographs, at each level, can pivot about axes that lie in horizontal planes so that if the levels to be connected are moved away or toward one another, corresponding pivot points on the two pantographs move together in parallel horizontal pivot points planes. The threads of the staircase are fixed to the pantographs by means of supports each of which has a tread portion which is secured to one edge of one tread and a pantograph portion which is pivotally connected to corresponding pivot points lying in the same horizontal plane. Each pantograph is enclosed in a casing having open ends through which the connectors extend as well as further openings for the tread connectors.



4) Family number: 34542199 (US2009065301A)

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Title: ACCESS DEVICE

Priority: AU20050906765 20051202 AU20060903004 20060602 AU20060319744 20061129
WO2006AU01807 20061129 JP20080542558 20061129 JP20080542558T 20061129

Family:	Publication number	Publication date	Application number	Application date
	AT466751 E	20100515	AT20060817556T	20061129
	AU2006319744 AA	20070607	AU20060319744	20061129
	AU2006319744 BB	20120308	AU20060319744	20061129
	CA2631691 AA	20080530	CA20062631691	20061129
	CA2631691 C	20150210	CA20062631691	20061129
	CN101321648 A	20081210	CN200680045177	20061129
	CN101321648 B	20110209	CN200680045177	20061129
	DE602006014191 D1	20100617	DE200660014191T	20061129
	EP1954529 A1	20080813	EP20060817556	20061129
	EP1954529 A4	20090107	EP20060817556	20061129
	EP1954529 B1	20100505	EP20060817556	20061129
	ES2350885 T3	20110127	ES20060817556T	20061129
	JP2009517265 T2	20090430	JP20080542558T	20061129
	JP2013032162 A2	20130214	JP20120253040	20121119
	JP5828831 B2	20151209	JP20120253040	20121119
	US2009065301 AA	20090312	US20060095454	20061129
	US9145091 BB	20150929	US20060095454	20061129
	WO07062464 A1	20070607	WO2006AU01807	20061129
	ZA200804437 A	20090325	ZA20080004437	20080522

Probable Assignee: BARJOH PTY LTD

Assignee(s):(std): BARJOH PTY LTD ; ELLEMENT NATHAN JOHN

Inventor(s):(std): ELLEMENT NATHAN JOHN ; JOHN ELLEMENT NATHAN ; ELLEMENT NATHAN

Inventor(s): NATHAN JOHN ELLEMENT

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; GIERCZAK EUGENE J A; HARRISON GODDARD FOOTE; SEKIYA MITSUO; HIRAKI YUSUKE; CRAWFORD MAUNU PLLC

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 GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): B60R3/00 B60R3/02 E02F9/08 E06C5/00 E06C5/02 E06C5/04 E06C5/06 E06C5/40 E06C5/42 E06C7/18 (Advanced/Invention); B60R3/00 E06C5/00 (Core/Invention); B60R E06C (Subclass/Invention)

CPC: B60R3/02 E02F9/0833 E06C5/02 E06C7/181

European class: B60R3/02 E02F9/08B E06C5/02 E06C7/18B

US class: 1/1 182/127 280/166 280/166S

JP class F-Term: 2E044 2E044/AA01 2E044/BA01 2E044/BA14 2E044/BB09 2E044/CB03 2E044/EE00 3D022 3D022/AA01 3D022/AA04 3D022/AC10 3D022/AD01 3D022/AE09 3D022/AE10 3D022/AE15 3D022/AD10

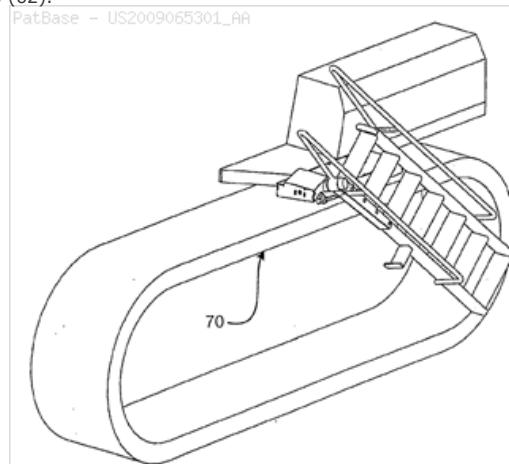
JP class F-Index: B60R3/02 E06C5/06 E06C5/40 E06C5/42 B60R3/00

[Classification Explorer](#)

Cited documents: US8109765 BB, US7231351 BA, US6315078 BA, US6029775 A, US6029775, US5996737 A, US5996737, US5813494 A, US4350358 A, US4243120 A, US4217971 A, US4217971, US3656578 A, US3656578, US3620332 A, US3545567 A, US3190392 A, US2967584 A, US2453937 A, US2010230209 AA, US2010090517 AA, US2006070804 AA, US2005263976 AA, US2005263976, US2002038741 AA, US06029775, US0263976, JPS5737042 U, JP57037042 U1, JP57037042 U, JP57037042 U, JP5056642 U1, JP5056642 U, JP5056642 U, EP1388638 A1, EP1388638,

Forward Citations: WO17106910, WO15053877, WO13156219, WO13054777, US9994159, US9816318, US9222306, US9168873, US8931792, US8881867, US8397869, US8186763, US2017167197, US2014048352, US2013193667, US10017124, JP2016074520, JP2016074323, JP2013216240, JP2013087416, EP3055189, EP2862749, EP2862749, EP2857597, EP2175070, EP2175070, DE202013001302, DE202012003977, DE202008007079, CN107512226, CN104245425, CN104196439, CN104196439, CN102689695, AU2014332448,

Abstract:
An access system (10) for earthmoving equipment to allow a person to move from ground level to an elevated position, said access system having an access means (20) mounted to the earthmoving equipment via a pivot, and a retraction mechanism (50) therefor, said pivot allowing the access means to be retracted through a compound angle from a downwardly and outwardly deployed position to a retracted position generally adjacent and aligned beside the vehicle, the access means may be collapsible, such as with steps (30) pivotably mounted to the sides of the access means via secondary pivots (62).



5) Family number: 58901254 (US2015096817A)

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Title: SELF-DEPLOYING SERVICE STEP
Priority: US20130047781 20131007 EP20140852436 20140829 WO2014US53579 20140829
Family:

Publication number	Publication date	Application number	Application date
AU2014332448 AA	20150416	AU20140332448	20140829
AU2014332448 BB	20160526	AU20140332448	20140829
CA2926422 AA	20160405	CA20142926422	20140829
CA2926422 C	20161122	CA20142926422	20140829
DE602014030633 D1	20180906	DE201460030633T	20140829
EP3055189 A1	20160817	EP20140852436	20140829
EP3055189 A4	20170531	EP20140852436	20140829
EP3055189 B1	20180815	EP20140852436	20140829
MX2016004416 A1	20160726	MX20160004416	20140829
MX348446 B	20170613	MX20160004416	20140829
US2015096817 AA	20150409	US20130047781	20131007
US9168873 BB	20151027	US20130047781	20131007
WO15053877 A1	20150416	WO2014US53579	20140829

Probable Assignee: PACCAR INC
Assignee(s):(std): ANGELO GERALD J ; PACCAR INC
Assignee(s): PACCAR INC BELLEVUE
Inventor(s):(std): ANGELO GERALD J ; GERALD J ANGELO
Inventor(s): ANGELO GERALD J BELLEVUE
Agent(s): GRIFFITH HACK; REGEHR HERBERT B; BULL HOUSSER AND TUPPER LLP; GEVERS PATENTS; CHRISTENSEN OCONNOR JOHNSON KINDNESS PLLC; CRUZ LAURA A
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 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 JP KE KG KM KN KP KR 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): B60R3/02 B62D21/00 B62D33/063 B62D33/067 E06C5/04 (Advanced/Invention); B60R3/00 (Advanced/Non-invention)
CPC: B60R3/02 B60R3/007 E06C5/04 B62D21/00 B62D33/063
US class: 1/1 180/89.16 280/166

[Classification Explorer](#)

Cited documents: WO11116415 A1, WO11116415 A1, USD632224 S1, USD607395 S1, USD570253 S1, USD563281 S1,

USD561647 S1, USD549146 S1, USD539704 S1, USD532731 S1, USD434348 S1, US8157277 BB, US7168722 BA, US6817433 BA, US6736447 BB, US6264222 BA, US6213486 BA, US5538265 A, US5257847 A, US5092617 A, US4982974 A, US4921062 A, US4836568 A, US4813736 A, US4180143 A, US4106790 A, US4021071 A, US3986724 A, US3889997 A, US3853369 A, US3419099 A, US2125085 A, US2118557 A, US2014251711 AA, US2014125017 AA, US2014048352 AA, US2009065301 AA, US2009065301 AA, US2002082752 AA, SU935342 T, SU935342 A1, RU2466884 C2, RU2466884 C2, JP2013087416 A2, JP2003019923 A2, JP2003019923 A2, EP2130979 A2, EP2130979 A2, DE2318614 A1, DE2318614 A1,

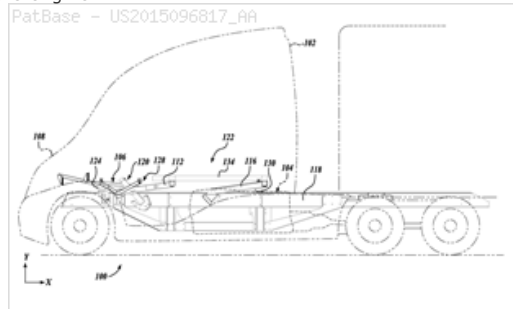
DE102010026256 A1

DE102010026256 A1

Forward Citations: US2015136523, US2014174852, DE102016205047,

Abstract:

A cab-over-engine vehicle is described wherein the cab is supported in a level orientation on the vehicle's chassis. A cab repositioning system raises the cab while maintaining the cab in the level orientation, thus exposing the engine to be worked on. A service step structure that is hidden within the exterior body when the cab is over the engine is deployed when the cab is raised. The service step structure is connected to the underside of the cab such that the service step structure swings down and away from the exterior body to provide access to the raised level cab at the same time allowing access to the engine.



6) Family number: 10121254 (US4720116A)

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Title: Storable stairway and platform apparatus for recreational vehicles

Priority: US19860934260 19861124

Family:

Publication number	Publication date	Application number	Application date
US4720116 A	19880119	US19860934260	19861124

Probable Assignee: WILLIAMS JIM R

Assignee(s):(std): WILLIAMS JIM R ; WILLIAMS MICHAEL G

Inventor(s):(std): WILLIAMS JIM R ; WILLIAMS MICHAEL G

International class (IPC 8-9): B60R3/02 (Advanced/Invention);
B60R3/00 (Core/Invention)

International class (IPC 1-7): B60R3/02

CPC: B60R3/02

European class: B60R3/02

US class: 182/127 182/96 280/166 296/162

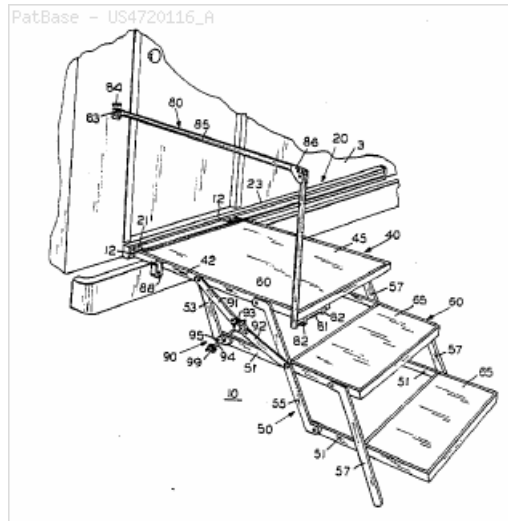
[Classification Explorer](#)

Cited documents: US4623160 A, US4188057 A, US3997211 A, US3912298 A, US3889997 A, US3796456 A, US3708198 A, US3608951 A, US3515406 A, US3392990 A, US2760238 A,

Forward Citations: WO9744233, US9944231, US9701249, US9617788, US9562358, US9561751, US9527448, US9487148, US9346405, US9302626, US8944451, US8936266, US8931792, US8844957, US8827294, US8556283, US8419034, US8413591, US8360455, US8317249, US8251178, US8246063, US8157277, US8028629, US7766357, US7740261, US7637519, US7584975, US7566064, US7487986, US7448637, US7413204, US7410205, US7398985, US7380807, US7367574, US7195232, US7055839, US7025365, US7025004, US7007961, US7007366, US6974134, US6942233, US6938909, US6863000, US6843468, US6834875, US6830257, US6799522, US6641158, US6640728, US6425572, US6213486, US6068277, US5799962, US5584493, US5582376, US5505476, US5397143, US5280934, US5131492, US4976455, US4864939, US2015211234, US2015001005, US2013193667, US2011133426, US2010237581, US2010133874, US2010059962, US2010051387, US2009243249, US2009072508, US2008290626, US2008150251, US2008143072, US2008100025, US2007108720, US2006202441, US2006145514, US2006125204, US2006091638, US2006004971, US2005098264, US2005081743, US2005077697, US2005076804, US2005067610, US2004150184, US2004084868, US2003029974, US10322677, US10195997, US10183624, US10099623, US10077016, US10053017, GB2291013, GB2239633, EP1283129, AU718425,

Abstract:

Storable stairway and platform apparatus for recreational vehicles including a horizontal channel member mounted to the side or end of a vehicle beneath and extending to the side of the door, the channel member reciprocally receiving a pair of slider members; a platform pivotally engaging the slider members; and a stairway pivotally engaging the platform. The stairway is provided with a pair of opposing scissor linkages for folding the steps of the stairway into compact parallel abutment with one another and with the platform. The platform and stairway laterally slide away from the door and are pivotal into a vertical position for storage against the outside wall of the vehicle. The scissor linkages provide for unobstructed steps in addition to superior compact storage. Adjustable levelers are provided on each of the opposing scissor linkages to accommodate for uneven ground support. A novel bannister foldable and attachable to the side of the platform may also be provided.



7) Family number: 5145276 (US4623160A)

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Title: Extensible step assembly for vehicles

Priority: US19850773043 19850906

Family:	Publication number	Publication date	Application number	Application date
	US4623160 A	19861118	US19850773043	19850906

Probable Assignee: TRUDELL JERRY W

Assignee(s):(std): TRUDELL JERRY W

Inventor(s):(std): TRUDELL JERRY W

International class (IPC 8-9): B60R3/02 (Advanced/Invention);
B60R3/00 (Core/Invention)

International class (IPC 1-7): B60R3/02

CPC: B60R3/02

European class: B60R3/02

US class: 182/127 182/96 280/166

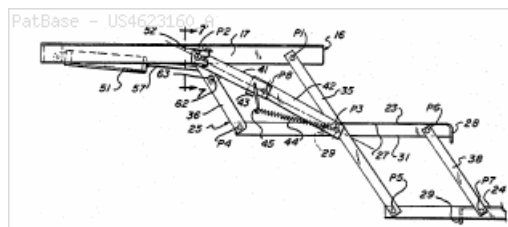
[Classification Explorer](#)

Cited documents: US4185849 A, US4116457 A, US4108457 A, US4073502 A, US4020920 A, US3807757 A, US2682671 A, US2575615 A,

Forward Citations: WO10146600, WO03039910, USD717713, USD713772, USD652776, USD527323, US9994141, US9944231, US9725042, US9701249, US9586655, US9561751, US9527448, US9346405, US9302626, US9242608, US9010473, US8944451, US8936266, US8919796, US8851495, US8844957, US8827294, US8727364, US8696005, US8689939, US8668217, US8419034, US8360455, US8297635, US8251178, US8246063, US8157277, US8091294, US8056913, US8011474, US7823896, US7744106, US7740261, US7637519, US7584975, US7566064, US7494144, US7487986, US7448637, US7441790, US7413204, US7398985, US7380807, US7367574, US7055839, US7025365, US7007961, US6942233, US6938909, US6834875, US6830257, US6659224, US6641158, US6533303, US6325397, US6213486, US6149172, US6082751, US5547040, US5505476, US5228707, US5039119, US5005850, US4948169, US4733752, US4720116, US2014174852, US2013193667, US2013154229, US2013015637, US2010264618, US2010051387, US2009294213, US2009188444, US2009008894, US2008143072, US2008100022, US2008099282, US2008054586, US2007221442, US2006137266, US2005098264, US2005077697, US2004159492, US2004150184, US2004084868, US10322677, US10195997, US10183624, US10077016, US10059268, US10053017, GB2564079, FR2851527, CN103407410, CN103386930, CN103158622, CN103158622,

Abstract:

A step assembly for vehicles has a support frame mounted under the floor of a vehicle, a pair of side linkage assemblies connect upper and lower steps to the frame to support them for movement between retracted and extended positions. An over-center lock holds the side linkage assemblies in the extended position. A reciprocating actuator coupled to a rotary drive shaft which upon rotation releases the lock and moves the linkage between the two positions.



Title: VEHICLE ACCESS SYSTEM

Priority: AU20050903162 20050616 AU20060257721 20060616 EP20060741252 20060616
WO2006AU00846 20060616 US20080917701 20080523 AU20130200159 20130111
AU20130200159 20130129 US20150982279 20151229 AU20160206398 20160722

Family:	Publication number	Publication date	Application number	Application date
	AU2006257721 AA	20061221	AU20060257721	20060616
	AU2013200159 AA	20130131	AU20130200159	20130111
	AU2016206398 AA	20160811	AU20160206398	20160722
	AU2016206398 BB	20180705	AU20160206398	20160722
	CA2613099 AA	20071221	CA20062613099	20060616
	CA2613099 C	20140520	CA20062613099	20060616
	CN101218412 A	20080709	CN200680021558	20060616
	CN101218412 B	20120530	CN200680021558	20060616
	DE602006036031 D1	20130627	DE200660036031T	20060616
	EP1896682 A1	20080312	EP20060741252	20060616
	EP1896682 A4	20101020	EP20060741252	20060616
	EP1896682 B1	20130501	EP20060741252	20060616
	ES2424680 T3	20131007	ES20060741252T	20060616
	JP2008546576 T2	20081225	JP20080516078T	20060616
	JP5081819 B2	20121128	JP20080516078T	20060616
	US2009038885 AA	20090212	US20060917701	20060616
	US2016108672 AA	20160421	US20150982279	20151229
	US9238941 BB	20160119	US20060917701	20060616
	WO06133513 A1	20061221	WO2006AU00846	20060616
	ZA200710876 A	20080730	ZA20070010876	20071214

Probable Assignee: BARJOH PTY LTD

Assignee(s):(std): BARJOH PTY LTD ; ELLEMENT NATHAN JOHN

Assignee(s): BARJOH PTY LTD OAKFORD

Inventor(s):(std): JOHN ELLEMENT NATHAN ; ELLEMENT NATHAN JOHN

Inventor(s): NATHAN JOHN ELLEMENT ; ELLEMENT NATHAN JOHN OAKFORD

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; MILLER THOMSON LLP; SCHUMACHER AND WILLSAU PATENTANWALTSGESELLSCHAFT MBH; HARRISON GODDARD FOOTE; UNGRIA JAVIER; CRAWFORD MAUNU PLLC

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 LI 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 VN VU ZA ZM ZW

International class (IPC 8-9): B60R3/02 B65D25/22 E02F9/00 E06C5/04 E06C5/06 E06C7/02 (Advanced/Invention); B60R3/00 B65D25/22 E02F9/00 E06C5/00 (Core/Invention); B60R B65D E06C (Subclass/Invention)

CPC: B60R3/02 E06C5/04 E06C7/02 E06C5/06

European class: B60R3/02 E06C5/06

US class: 1/1 182/64.1 182/97 182/97P 280/163 280/163S

JP class F-Term: 2D015 3D022 3D022/AA01 3D022/AC10 3D022/AE06 3D022/AE15

JP class F-Index: B60R3/02 E02F9/00/Z

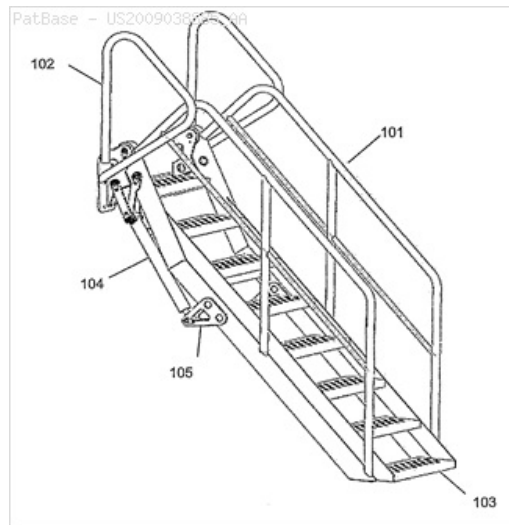
[Classification Explorer](#)

Cited documents: US7905324 BB, US6523221 BA, US6347686 BA, US5996737 A, US5842709 A, US5813494 A, US5518357 A, US5439342 A, US5339919 A, US5201494 A, US5033582 A, US4679653 A, US4643273 A, US4243120 A, US4014486 A, US3891056 A, US3882963 A, US3790981 A, US3528574 A, US3082842 A, JP6298005 A2, JP48083521 U1, GB2274869 A1,

Forward Citations: WO13103456, WO12035848, US9994158, US9816318, US9669765, US9447638, US9194180, US8931792, US8919497, US8672338, US8397869, US8074768, US7866736, US2017190293, US2017167197, US2016101738, US2015246642, US2015136523, US2013193667, US2013118832, US2013008743, US2012267916, US2012181109, US2010116590, US2009102242, US10093238, KR101144922, JP2016205075, JP2013216240, JP2011235863, FR2943012, CN106660618, CN106004685, CN102575452, AU2015392618,

Abstract:

A vehicle access system and method with retractable access means (10) e.g. ladder or stairs and a retracting mechanism (25) therefor. Force applied to the access means is sufficient to retract the access means from a fully deployed position to a partially retracted position but not sufficient to not be physically resisted by a user during at least part of the retraction. With the access means in a fully retracted position, force exerted on the retracted access means can be sufficient to hold the access means in a retracted position without the need for auxiliary restraining means.



9) Family number: 49461345 (US2013008743A)

© PatBase

Title: ACCESS DEVICE
Priority: AU20100900652 20100217 AU20110217736 20110216 WO2011AU00166 20110216
EP20110744191 20110216

Family:	Publication number	Publication date	Application number	Application date
	AU2011217736 AA	20110825	AU20110217736	20110216
	AU2011217736 BB	20161103	AU20110217736	20110216
	BR112012020916 A2	20160503	BR20121120916	20110216
	CA2781575 AA	20110825	CA20112781575	20110216
	CA2781575 C	20170509	CA20112781575	20110216
	CL2012002156 A1	20130111	CL20120002156	20120803
	CL52767 B	20160720	CL20120002156	20120803
	CO6551701 A2	20121031	CO20120084800	20120523
	DE602011020345 D1	20151119	DE201160020345T	20110216
	EP2536912 A1	20121226	EP20110744191	20110216
	EP2536912 A4	20130703	EP20110744191	20110216
	EP2536912 B1	20151007	EP20110744191	20110216
	JP2013519577 T2	20130530	JP20120553149T	20110216
	JP5849055 B2	20160127	JP20120553149T	20110216
	US2013008743 AA	20130110	US20110521020	20110216
	US9447638 BB	20160920	US20110521020	20110216
	WO11100794 A1	20110825	WO2011AU00166	20110216
	ZA201203643 A	20130130	ZA20120003643	20120518

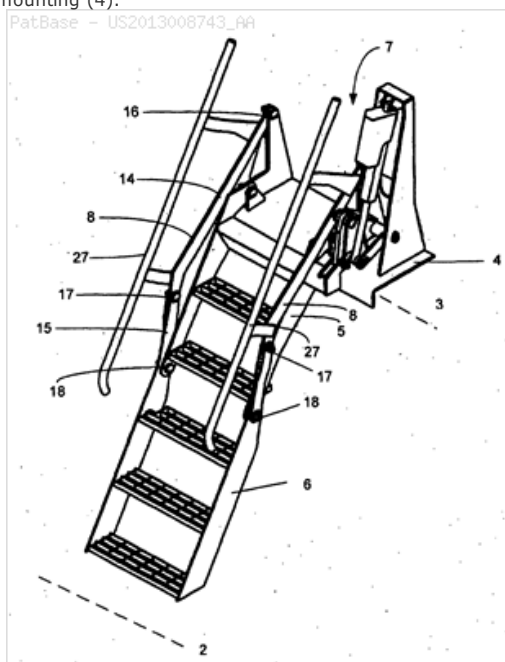
Probable Assignee: JUSTOY PTY LTD
Assignee(s):(std): HEDLEY ROBERT IAN ; JUSTO Y PTY LTD ; JUSTOY PTY LTD
Assignee(s): JUSTOY PTY LTD MT THORLEY VIA SINGLETON
Inventor(s):(std): HEDLEY ROBERT IAN
Inventor(s): ROBERT IAN HEDLEY ; HEDLEY ROBERT IAN BUTTABA
Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; HALFORDS IP; OYEN WIGGS GREEN AND MUTALA LLP; ALESSANDRI AND COMPANIA LIMITADA; SILVANA MARIA LOPEZ DIAZ; WUESTHOFF AND WUESTHOFF PATENTANWAELE PARTG MBB; BEYER ANDREAS; ONDA HIRONORI; ONDA MAKOTO; KILPATRICK TOWNSEND AND STOCKTON LLP; COWLE ANTHONY JOHN ET AL
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR 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 PE PG PH PL PT RO RS RU 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): B60R3/00 B60R3/02 B63B27/14 E02F9/08 E06C E06C1/38 E06C1/393 E06C5/00 E06C5/02 E06C5/04 E06C5/06 E06C7/18 E06C9/08 (Advanced/Invention); B60R3/00 E04F11/06 (Advanced/Non-invention); E06C (Subclass/Invention)
CPC: B60R3/005 B60R3/02 B63B27/14 E02F9/0833 E04F11/06 E06C5/06 E06C7/181 E06C7/183 E06C1/393 E06C5/02 E06C9/08
European class: E06C1/393 E06C5/02 E06C7/18B2 E06C9/08
US class: 1/1 182/95
JP class F-Term: 3D022 3D022/AA01 3D022/AC10 3D022/AE10
JP class F-Index: B60R3/00
[Classification Explorer](#)
Cited documents: US6347686 BA, US6068277 A, US5988316 A, US5584493 A, US4014486 A, US2933149 A, US2531263 A,

US2013118832 AA, US2013092474 AA, US2013048400 AA, US2012205195 AA, US2012145480 AA, US2009038885 AA, US2005092551 AA, US2004159492 AA, US2004159492, US2003173153 AA, US2003173153, US2002189899 AA, US2002189899 AA, US0173153, US0159492, JP2008240278 A2, JP2008240278 A2, EP1387018 A2, EP1387018 A2, AU738307 B2, AU738307 B2, AU738307 A1, AU2003200356 AA, AU2003200356 A1, AU2003200356,

Forward Citations: WO17106910, US9994159, US9903121, US9816318, US9677249, US9500028, US9194180, US2017167197, US2016244947, US2016221510, US2016108671, US2013118832, US2013092474, US10266121, CN107458543, AT514066, AT514066,

Abstract:

An access device (1), adapted to provide access between a substrate surface (2) and an elevated surface (3). The device (1) includes a mounting (4), for securement of said device (1) substantially atop said elevated surface (3), a first ladder member (5), a first end of which is pivotally attached to said mounting (4), a second ladder member (6), a first end (12) of which is pivotally attached to a second end (11) of said first ladder member (5), at an articulation joint, drive means (7), operatively connected between said mounting (4) and said first ladder member (5), to control the movement of said first ladder member (5) between an access position and a storage position, at least one guide arm (8), operatively connected between said mounting (4) and said articulation joint (18), to guide the movement of said second ladder member (6) as said drive means (7) moves said first ladder member (5). User operation of said drive means (7) controls the operation of said access device (1) between an access position and a storage position. In the access position, each of said first (5) and second (6) ladder members are substantially coaligned and extend substantially outwardly and downwardly from said elevated surface (3). In the storage position, each of said first (5) and second (6) ladder members are retracted in a substantially vertically disposed manner substantially atop said mounting (4).



10) Family number: 41778351 (EP1918479A1)

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Title: Stair system
Priority: NL20062000298 20061101 EP20070119113 20071023
Family:

Publication number	Publication date	Application number	Application date
AT513956 E	20110715	AT20070119113T	20071023
DE602007015344 D1	20110811	DE200760015344T	20071023
EP1918479 A1	20080507	EP20070119113	20071023
EP1918479 B1	20110622	EP20070119113	20071023
ES2368263 T3	20111115	ES20070119113T	20071023
NL2000298 C2	20080506	NL20062000298	20061101

Probable Assignee: GORTER BOUWPRODUKTEN B V
Assignee(s):(std): GORTER BOUWPRODUKTEN B V ; GORTER GROUP B V
Assignee(s): GORTER GROUP BV ; GORTER BOUWPRODUKTEN BV
Inventor(s):(std): HOOGERDIJK PETER
Inventor(s): PETER HOOGERDIJK ; HOOGERDIJK PETER 1741 EE
Agent(s): ARNOLD AND SIEDSMA; HOOIVELD ARJEN JAN WINFRIED
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 MT NL PL PT RO RS SE SI SK TR

International class (IPC 8-9): E04F11/06 E06C1/54 (Advanced/Invention)

CPC: E04F11/066 E06C1/54

European class: E04F11/06A2 E06C1/54

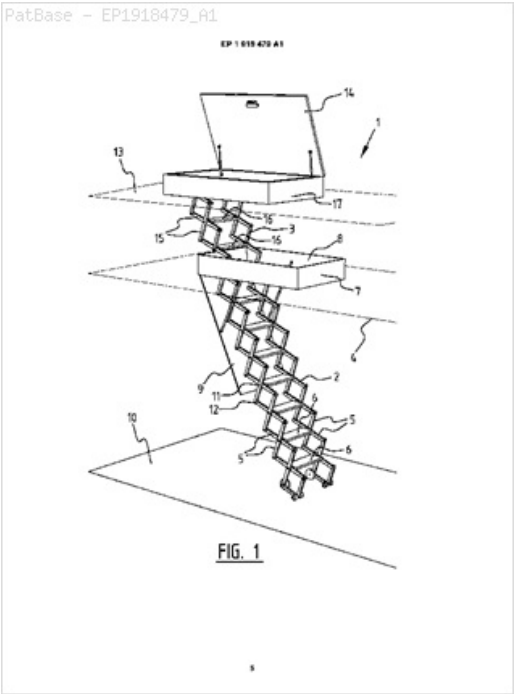
[Classification Explorer](#)

Cited documents: US2567302 A, US2050593 A, FR2770550 A1, EP0918479 A1, EP07119113, EP0633386 A1, DE2610429 A1,

Forward Citations: WO17098286, WO11116415,

Abstract:

A stair system comprising - a scissor stair (2) mounted in a ceiling (4) of a building, comprising two scissors each formed by scissor members, which scissor members are hinged together, which scissor stair further comprises steps (6) mounted between and connected to the two scissors, which two scissors can be extended and retracted between a retracted position, in which the scissor stair is accommodated in an opening in the ceiling, and an extended position, in which the scissor stair is supported on a floor surface in the building; - a stair (3) disposed between the ceiling (4) and a roof (13) of the building, which stair provides access to a hatch on the roof.



11) Family number: 461397 (DE1784311A1)

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Title: AUSZIEHLEITER, TELESKOP- ODER GELENKMAST MIT ARBEITSKORB Extension ladder, TELESCOPIC OR JOINT POLE WITH PLATFORM (Machine translation)

Priority: DE19671784311 19680726 DE19681784311 19680726

Family:	Publication number	Publication date	Application number	Application date
	DE1784311 A1	19710805	DE19681784311	19680726
	DE1784311 B2	19790405	DE19681784311	19680726
	DE1784311 C3	19791115	DE19681784311	19680726

Probable Assignee: KLOECKNER HUMBOLDT DEUTZ AG

Assignee(s):(std): KLOECKNER HUMBOLDT DEUTZ AG ; MAGIRUS DEUTZ AG

Assignee(s): MAGIRUS DEUTZ AG 7900 ULM

Inventor(s):(std): EICKHOFF HANS DIPL ING ; REHM RUDOLF

Inventor(s): REHM RUDOLF 7910 NEU ULM ; EICKHOFF HANS DIPL ING 5216 NIEDERKASSEL

International class (IPC 8-9): E06C5/44 (Advanced/Invention); E06C5/00 (Core/Invention)

International class (IPC 1-7): B66F11/04 E06C5/44

CPC: E06C5/44

European class: E06C5/44

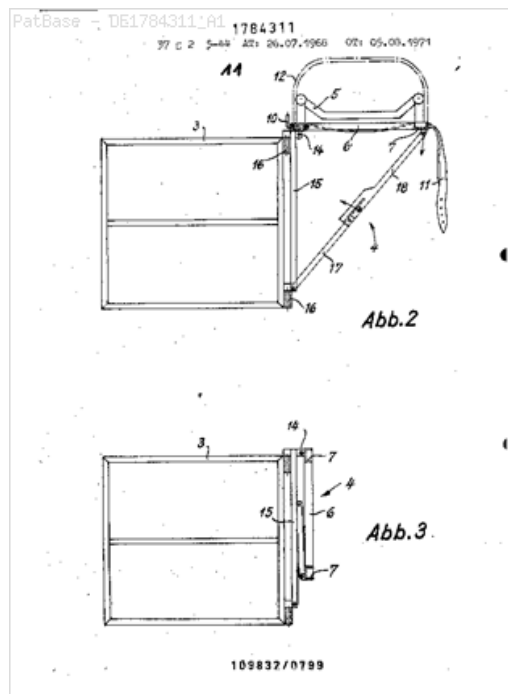
[Classification Explorer](#)

Forward Citations: WO17106910, DE2924820,

Abstract:

Source: DE1784311A1 [DE] (Claim 1) P a t e n t a n s p r u e c h e Ausziehleiter, Teleskop- oder Gelenkmast mit am 'o-b#ere:n...Ende, #. angebrachtem Ar.bei-tskorb, dadurch gekennzeichnet, dass an dem Arbeitskorb (3) eine Konsole (4) zur Aufnahme einer Krankentrage (5) angebracht ist.

Machine translation: (Claim 1) P atentanspr ue surface extension ladder, telescopic or articulated boom with the '# if ere:. N. end, #. Ar.bei tskorb-attached, thereby gekennzeichnet that is attached to the basket (3) a console (4) to accommodate a stretcher (5).



12) Family number: 55758414 (US2015197198A)

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Title: VEHICLE WITH TELESCOPABLE ENTRY LADDER

Priority: DE201210214089 20120808 EP20130745003 20130722 WO2013EP65445 20130722

Family:

Publication number	Publication date	Application number	Application date
DE102012214089 A1	20140213	DE201210214089	20120808
DE502013008726 D1	20171214	DE201350008726T	20130722
DK2867066 T3	20180115	DK20130745003T	20130722
EP2867066 A1	20150506	EP20130745003	20130722
EP2867066 B1	20171101	EP20130745003	20130722
ES2657280 T3	20180302	ES20130745003T	20130722
HU035372 T2	20180502	HU20130745003T	20130722
PL2867066 T3	20180430	PL20130745003T	20130722
PT2867066 T	20171214	PT20130745003T	20130722
RU2015108040 A	20160927	RU20150108040	20130722
RU2633446 C2	20171012	RU20150108040	20130722
US2015197198 AA	20150716	US20130420147	20130722
WO14023566 A1	20140213	WO2013EP65445	20130722

Probable Assignee: SIEMENS AG

Assignee(s):(std): SIEMENS AG

Assignee(s): SIMENS AKTSIENGEZELLSCHAFT

Inventor(s):(std): JUEHLING SVEN ; EGNER FLORIAN ; PROELL GUENTHER ; LANGENBACHER THOMAS ; PRELL GYUNTER ; YULING SVEN ; LANGENBAKHER TOMAS ; SVEN JUEHLING ; GUENTHER PROELL ; FLORIAN EGNER ; THOMAS LANGENBACHER

Agent(s): CARVAJAL Y ISABEL; OOO YURIDICHESKAYA GORODISSKIY I PARTNERY FA

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 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 IS IT JP KE KG KM KN KP KR 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 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): B60R3/02 B61D23/02 E06C1/12 E06C5/04 E06C5/06 (Advanced/Invention)

CPC: E06C1/125 E06C5/04 B60R3/02 B61D23/00 E06C5/06

US class: 182/77

Classification Explorer

Cited documents: WO11116415 A1, US8002298 BB, US7905324 BB, US7699328 BB, US6345691 BA, US5427049 A, US5064022 A, US5064022 A, US4200303 A, US4071260 A, US3951431 A, US3862670 A, US3774720 A, US3774720 A, US3033309 A, US2014190766 AA, US2012181109 AA, US2012181109 AA, US2010012433 AA, US2009008895 AA, US2005016439 AA, SU523821 A1, GB326028 A, EP1619076 A2, EP1619076 A2, DE6933420 U, DE4016620 C2, DE3229533 A1,

DE202008007972 U1

DE10253542 A1,

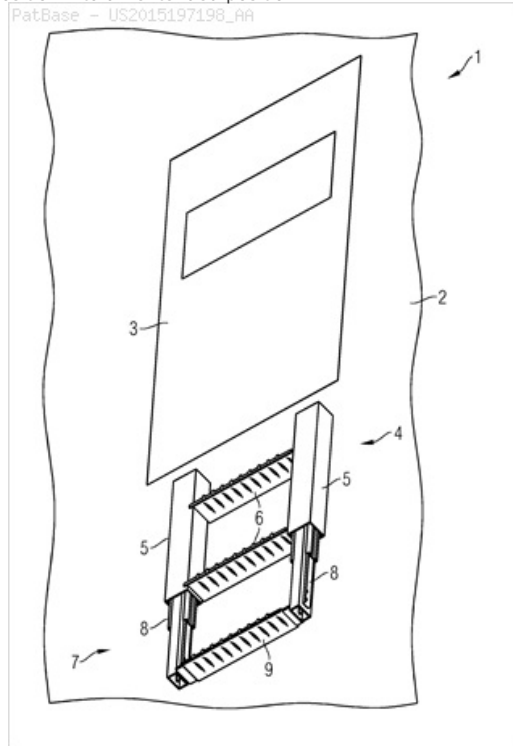
DE102012213181 A1

AU2008202858 AA,

Forward Citations: EP2998182, DE102016114269, DE102016114269, DE102014113423, CN107135744,

Abstract:

A vehicle which can be accessed in a comfortable manner includes an entry door and an entry ladder which is disposed on the vehicle below the entry door and which can be elongated, extended or lengthened at the side of the ladder facing away from the entry door. This is achieved by a drive which converts the entry ladder from a retracted position into an extended position.



13) Family number: 51604429 (EP2481275B1)

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Title: LADDER FOR A WORK MACHINE MONTEES POUR UNE MACHINE DE TRAVAIL

Priority: DE201110003354 20110131 EP20110192078 20111206

Family:	Publication number	Publication date	Application number	Application date
	DE102011003354 A1	20120802	DE201110003354	20110131
	DE502011005379 D1	20150219	DE201150005379T	20111206
	EP2481275 A1	20120801	EP20110192078	20111206
	EP2481275 B1	20141224	EP20110192078	20111206

Probable Assignee: DEERE AND CO

Assignee(s):(std): DEERE AND CO

Assignee(s): DEERE AND CO MOLINE ; DEERE AND COMPANY

Inventor(s):(std): FUCHS VOLKER

Agent(s): HOLST SOENKE

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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR

International class (IPC 8-9): A01D41/02 A01D41/12 B60R3/02 (Advanced/Invention)

CPC: A01D41/1261 B60R3/02

European class: A01D41/12L B60R3/02

[Classification Explorer](#)

Cited documents: US5813494 A, US2006001251 AA, US2003230867 AA, FR2141074 A5, DE2531890 A1, DE19620072 A1, DE1580314 A1,

Forward Citations: WO18209284, WO17106910, DE102012216307, CN104429322, CN104429322,

Abstract:

The working machine comprises a load-bearing structure movable in a forward direction, and a cabin fastened at the supporting structure, which has an operator workstation. A climbing unit (38) is provided, which is moved opposite to the machine-fixed platform (42) between an operating position and an inoperative position. The climbing unit is supported on the bearing structure rotating around a vertical axis of rotation (40).

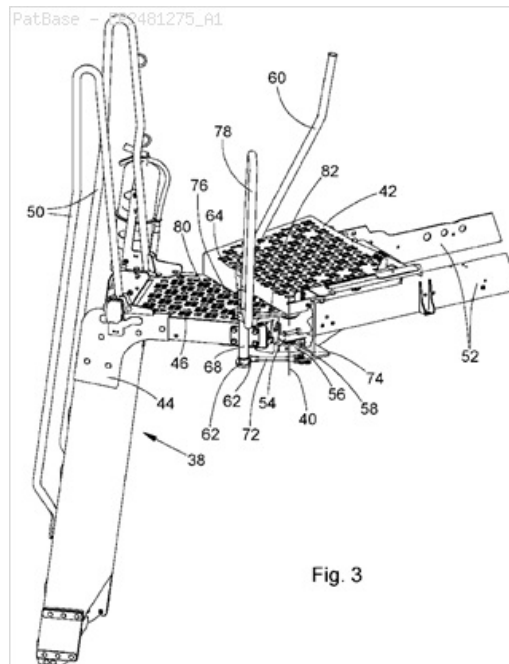


Fig. 3

14) Family number: 50431433 (US2012000024A)

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Title: AUTOMATED CAMERA CLEANING SYSTEM

Priority: US20100827262 20100630

Family:	Publication number	Publication date	Application number	Application date
	US2012000024 AA	20120105	US20100827262	20100630
	WO12003083 A1	20120105	WO2011US39945	20110610

Probable Assignee: RAYTHEON CO

Assignee(s):(std): LAYTON JACOB KYLE ; RAYTHEON CO

Assignee(s): RAYTHEON COMPANY

Inventor(s):(std): LAYTON JACOB KYLE

Agent(s): CARLSON BRETT A

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR KZ LA LC 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 PE PG PH PL PT RO RS RU 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): B08B7/00 B60R1/00 G03B11/00 G03B17/08 G03B17/56 H04N5/225 (Advanced/Invention)

CPC: G03B11/00 G03B17/08 H04N5/225 G03B17/568

European class: G03B11/00 G03B17/08 G03B17/56 H04N5/225

US class: 15/3 15/3S 15/97.1 15/97.100P

[Classification Explorer](#)

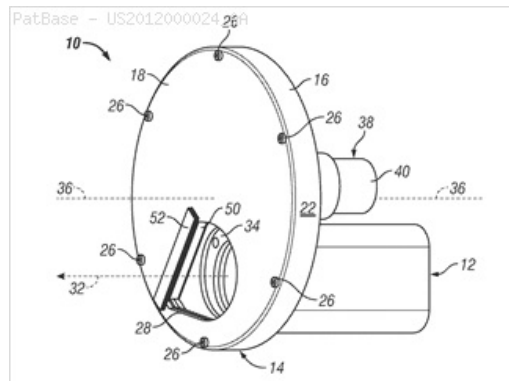
Cited documents: WO08028479 A1, US82726210, US6996338 BB, US5988191 A, US5068770 A, US4167318 A, US3879742 A, US3609450 A, US3145249 A, US3080758 A, US2014163664 AA, US2011205631 AA, US2011181725 AA, US2011141562 AA, US2010292533 AA, US2010265328 AA, US2010259613 AA, US2010228238 AA, US2010228119 AA, US2010174144 AA, US2010132804 AA, US2010071150 AA, US2009295985 AA, US2009240111 AA, US2009024121 AA, US2008266445 AA, US2008154091 AA, US2007280516 AA, US2007188649 AA, US2007109441 AA, US2004232340 AA, US2003202114 AA, US2003138248 AA, US2002139394 AA, JP556169475, JP56169475 A2, JP2005077778 A2, GB2188746 A1,

DE102005021670 A1

Forward Citations: WO18049137, WO18023067, WO18019662, US9994434, US9908760, US9896315, US9880382, US9875503, US9875502, US9801517, US9774768, US9757002, US9666046, US9602703, US9534906, US9436005, US9421946, US9380190, US2017056932, US2015356841, US2014149003, US10358326, US10351400, US10351399, US10346794, US10336592, US10315897, US10287149, US10280054, US10239740, US10239739, US10239738, US10214400, US10189692, US10189691, US10150449, US10138100, US10130232, US10081525, US10071893, US10071892, US10071891, US10017322, JP6327514, JP2015182656, IT201600094294, GB2488420, GB2488420, EP3097755, DE102017111759, DE102016108247, CN106347316, CN103676966, CN102809978, CN102809978,

Abstract:

Embodiments of an automated camera cleaning system are provided. In one embodiment, the automated camera cleaning system includes an optical path, an optically-transmissive lens shield through which the optical path extends, a housing in which the optically-transmissive lens shield is at least partially disposed, and a motor coupled to the lens shield. When energized, the motor moves the optically-transmissive lens shield relative to the housing to vary the region of the optically-transmissive lens shield positioned in the optical path.



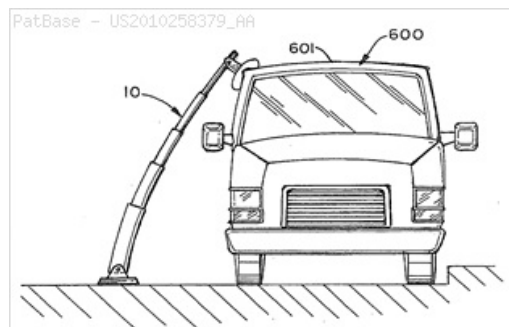
15) Family number: 47097502 (US2010258379A)

© PatBase

Title:	VEHICLE UTILITY LADDER																							
Priority:	US20090384697 20090408		US20120523312 20120614																					
Family:	<table><tr><th>Publication number</th><th>Publication date</th><th>Application number</th><th>Application date</th></tr><tr><td>US2010258379 AA</td><td>20101014</td><td>US20090384697</td><td>20090408</td></tr><tr><td>US2012247871 AA</td><td>20121004</td><td>US20120523312</td><td>20120614</td></tr><tr><td>US8215453 BB</td><td>20120710</td><td>US20090384697</td><td>20090408</td></tr><tr><td>US8708102 BB</td><td>20140429</td><td>US20120523312</td><td>20120614</td></tr></table>				Publication number	Publication date	Application number	Application date	US2010258379 AA	20101014	US20090384697	20090408	US2012247871 AA	20121004	US20120523312	20120614	US8215453 BB	20120710	US20090384697	20090408	US8708102 BB	20140429	US20120523312	20120614
Publication number	Publication date	Application number	Application date																					
US2010258379 AA	20101014	US20090384697	20090408																					
US2012247871 AA	20121004	US20120523312	20120614																					
US8215453 BB	20120710	US20090384697	20090408																					
US8708102 BB	20140429	US20120523312	20120614																					
Probable Assignee:	MICKENS LARRY																							
Assignee(s):(std):	MICKENS LARRY																							
Inventor(s):(std):	MICKENS LARRY																							
Agent(s):	FRANK J BONINI JR 86 COMMONS AT VALLEY FORGE EAST; JOHN F A; FRANK J; HARDING EARLEY FOLLMER AND FRAILEY PC																							
International class (IPC 8-9):	B60R9/00 E06C1/00 E06C1/12 E06C1/38 E06C5/00 E06C5/04 E06C7/14 E06C7/46 (Advanced/Invention)																							
CPC:	B60R3/00 E06C1/125 E06C1/38 E06C7/146 E06C7/44 E06C7/48																							
European class:	B60R3/00 E06C1/12A E06C1/38 E06C7/14B E06C7/44 E06C7/48																							
US class:	182/108 182/111 182/127 182/127S 182/129 182/129S 182/194 182/195 182/195S 182/218 296/37.1 296/37.100S																							
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Cited documents:	US991401 A, US934276 A, US7967110 BB, US6378654 BA, US6328130 BA, US609281 A, US5738186 A, US5645140 A, US5495915 A, US523011 A, US5203427 A, US4651480 A, US4615412 A, US4328880 A, US4002223 A, US3891207 A, US3726361 A, US3653463 A, US3452838 A, US3420331 A, US3061042 A, US3009534 A, US2993561 A, US2874887 A, US2405453 A, US2348136 A, US2194856 A, US2051060 A, US2021494 A, US2009050407 AA, US2007209875 AA, US2006283665 AA, US1712942 A, US152923 A, US1217279 A,																							
Forward Citations:	WO17106910, WO17091728, WO14046902, USD841190, US9863187, US9506292, US9488003, US9151114, US8844675, US8668216, US8622175, US8011475, US2015167384, US2015090530, US2014284140, US2014190766, US2012228059, US2011247897, US2011140389, US2010133041, US10294720, US10233692, EP2898170, CN107178305, CN105649525,																							

Abstract:

A ladder constructed for reaching an elevated surface or object and having a bow-shaped configuration so that the reach may extend further from the base on which the footing of the ladder rests, the ladder being configured to reach areas such as the roof of a vehicle.



16) Family number: 10191507 (US4733752A)

© PatBase

Title:	EXTENSIBLE LADDER FOR BOATS
Priority:	US19870073108 19870714

Family:

Publication number	Publication date	Application number	Application date
US4733752 A	19880329	US19870073108	19870714

Probable Assignee: WESBAR CORP

Assignee(s):(std): SKLAR ROBERT Z

Assignee(s): WESBAR CORP ; WESBAR A WISCONSIN CORP CORP ; NI WEST INC ; NORRIS CYLINDER CO ; NORRIS ENVIRONMENTAL SERVICES INC ; NORRIS IND INC ; PLASTIC FORM INC ; REESE PRODUCTS INC ; RESKA SPLINE PRODUCTS INC ; RICHARDS MICRO TOOL INC ; RIEKE CORP ; RIEKE LEASING CO INC ; RIEKE OF INDIANA INC ; RIEKE OF MEXICO INC ; TOWING HOLDING LLC ; TRIMAS CO LLC ; TRIMAS CORP ; TRIMAS INT HOLDINGS LLC ; AMERICAN LADDER A FLORIDA CORP CORP ; AMERICAN LADDER CORP ; ARROW ENGINE CO ; BEAUMONT BOLT AND GASKET INC ; CEQUENT CONSUMER PRODUCTS INC ; CHASE MANHATTAN BANK AS COLLATERAL AGENT ; CEQUENT PERFORMANCE PRODUCTS INC ; CEQUENT TOWING PRODUCTS INC ; CHASE MANHATTAN BANK COLLATERAL AGENT AS ; COMPAC CORP ; CONSUMER PRODUCTS INC ; CUYAM CORP ; DEW TECHNOLOGIES INC ; DI RITE CO ; DRAW TITE INC ; JPMORGAN CHASE BANK AS COLLATERAL AGENT ; METALDYNE CORP ; MASCOTECH INC ; ENTEGRA FASTENER CORP ; FULTON PERFORMANCE PRODUCTS INC ; HAMMERBLOW ACQUISITION CORP ; HAMMERBLOW CO LLC ; HI VOL PRODUCTS LLC ; INDUSTRIAL BOLT AND GASKET INC ; JPMORGAN CHASE BANK COLLATERAL AGENT AS ; KEO CUTTERS INC ; LAKE ERIE PRODUCTS CORP ; LAMONS GASKET CO ; LAMONS METAL GASKET CO ; LOUISIANA HOSE AND RUBBER CO ; METALDYNE (F K A MASCOTECH INC) CORP ; MONOGRAM AEROSPACE FASTENERS INC ; NETCONG INVESTMENTS INC ; NI IND INC ; METALDYNE F K A MASCOTECH INC CORP

Inventor(s):(std): SKLAR ROBERT Z

International class (IPC 8-9): B60R3/02 B63B27/14 (Advanced/Invention); B60R3/00 B63B27/00 (Core/Invention)

International class (IPC 1-7): B60R3/02

CPC: B63B27/14 B60R3/02 B63B27/146

European class: B60R3/02 B63B27/14

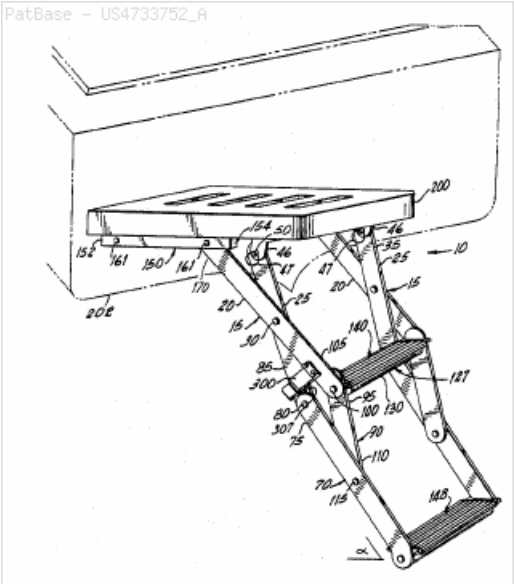
US class: 182/157 182/86 182/91 182/95 280/166 D12/318

[Classification Explorer](#)

Cited documents: US877363 A, US4623160 A, US4462485 A, US4180143 A, US3462170 A, US3172499 A, US2969850 A, US2670968 A, US2575615 A, US2487921 A, US2246986 A, US1178084 A, SE129078 C1,

Forward Citations: WO14029037, WO08154620, US9944231, US9914508, US9701249, US9561751, US9346405, US9302626, US9205896, US9169066, US9120540, US8944451, US8936266, US8844957, US8827294, US8419034, US8360455, US8157277, US8091294, US7766357, US7740261, US7637519, US7584975, US7566064, US7503572, US7487986, US7413204, US7398985, US7380807, US7367574, US7182175, US7055839, US7007961, US6938909, US6834875, US6830257, US6659224, US6457558, US5971106, US5924521, US4943076, US4926965, US4907673, US2013193667, US2012312634, US2010237581, US2010059962, US2010019468, US2009243249, US2009188444, US2009072508, US2009050406, US2008290626, US2008100025, US2008042394, US2007108720, US2006272895, US2006202441, US2006137266, US2006125204, US2006091638, US2005098264, US2005077697, US2003184040, US10322677, US10195997, US10183624, US10099623, US10077016, US10053017, FR2651475, ES2132003, EP2888159, EP1571042, EP0416978, BE1017004, BE1015928,

Abstract:
Contractible and extensible ladder of the lazy-tong type for attachment to the underside of a swim/dive platform of a boat or to a deck of a boat. The ladder and the swim/dive platform or deck include coacting means so constructed for positioning the ladder in the contracted position under the swim/dive platform or deck for stowage thereof.



17) Family number: 49640555 (US2013193667A)					© PatBase	
Title:	ACCESS SYSTEM AND DEVICE FOR EARTHMOVING VEHICLES, AND MODES OF EMPLOYMENT THEREOF					
Priority:	AU20100901216 20100322		AU20110232300 20110322			WO2011AU00323 20110322
Family:						
	Publication number	Publication date	Application number	Application date		

AP201206515 A0	20121031	AP20120006515	20110322
AU2011232300 AA	20110929	AU20110232300	20110322
BR112012024140 A2	20160628	BR20121124140	20110322
CA2793931 AA	20110929	CA20112793931	20110322
CL2012002618 A1	20130111	CL20120002618	20120921
CO6640288 A2	20130322	CO20120172667	20121002
US2013193667 AA	20130801	US20110635908	20110322
WO11116415 A1	20110929	WO2011AU00323	20110322
ZA201207654 A	20130626	ZA20120007654	20121011

Probable Assignee: BARJOH PTY LTD

Assignee(s):(std): BARJOH PTY LTD ; ELLEMENT NATHAN JOHN

Inventor(s):(std): ELLEMENT NATHAN JOHN

Inventor(s): NATHAN JOHN ELLEMENT

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; MILLER THOMSON LLP; PORZIO RIOS AND ASOCIADOS; SILVANA MARIA LOPEZ DIAZ

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR KZ LA LC 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 PE PG PH PL PT RO RS RU 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): B60R3/02 E04F11/06 E06C1/52 E06C1/54 E06C5/28 (Advanced/Invention); B60R E04F E06C (Subclass/Invention)

CPC: B60R3/02 E04F2011/0209 E06C1/54 E06C5/28 E06C7/081 E02F9/0833

European class: B60R3/02 E06C1/54 E06C5/28 E06C7/08A P04F11/02T1D

US class: 280/166

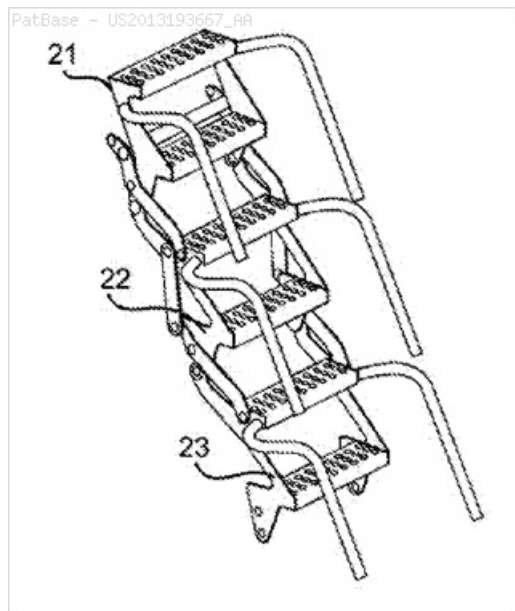
[Classification Explorer](#)

Cited documents: US8397869 BB, US4733752 A, US4720116 A, US4623160 A, US4615160 A, US2009188444 AA, US2009065301 AA, US2009038885 AA, EP1918479 A1, DE9214710 U1, DE19717207 C1, DE1509491 A1, AU749701 B2,

Forward Citations: WO17033651, WO15053877, US9527448, US9168873, US8931792, US10099623, RU2633446, JP6427472, JP2017043112, EP3342646, EP3055189,

Abstract:

An access system for a vehicle (42) has an access device (40) (such as a stair or ladder), an actuation mechanism for extending and retracting the access device, the access device being extendible from a contracted configuration for deployment to permit access to the equipment and retractable to a contracted configuration for normal operation of the equipment by the actuation mechanism. The access device has a multiplicity of treads to support a user thereof during use, the treads being connected such that the access device retracts by contracting with treads closing together, and wherein the actuation mechanism includes an actuation ram (50) (hydraulic, pneumatic) and linkages (52, 64, 66), and at least one pivot (68) with at least one respective pivot axis about which the access device rotates during retraction or deployment effected by operation of the ram. Thus the access device not only retracts and extends but rotates backwards for stowage under a cab or chassis of the vehicle when retracting. A deployment assistor (90), such as a gas strut, can be used to assist gravity actuated deploy of the access device.



18) Family number: 11286562 (US5803208A)

© PatBase

Title: Safety accessory for vehicles

Priority: DE19961003657 19960201

Family:	Publication number	Publication date	Application number	Application date
	AT1197 A	20010415	AT19970000011	19970108
	AT408430 B	20011126	AT19970000011	19970108

DE19603657 A1	19970807	DE19961003657	19960201
DE19603657 B4	20070426	DE19961003657	19960201
US5803208 A	19980908	US19970792110	19970131

Probable Assignee: TRIPUS GMBH KUNSTSTOFF U ELEKTROTECHNIK

Assignee(s):(std): TRIPUS GMBH KUNSTSTOFF UND ELE ; TRIPUS GMBH KUNSTSTOFF U ELE

Assignee(s): TRIPUS GMBH KUNSTSTOFF U ELEKTROTECHNIK ; TRIPUS GMBH KUNSTSTOFF U ; TRIPUS GMBH KUNSTSTOFF UND ELEKTROTECHNIK ; TRIPUS GMBH KUNSTSTOFF UND ELEKTROTECHNIK 89347 BU ; TRIPUS GMBH KUNSTSTOFF UND ELEKTROTECHNIK 89347 BUBESHEIM DE

Inventor(s):(std): BLACH RAINER

International class (IPC 8-9): B60T3/00 (Advanced/Invention);
B60T3/00 (Core/Invention)

International class (IPC 1-7): B60T3/00

CPC: B60T3/00

European class: B60T3/00

US class: 188/32 188/4R

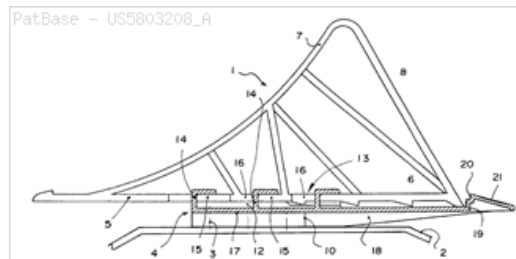
[Classification Explorer](#)

Cited documents: US3993167 A, US3992042 A, US3973651 A, US2372703 A, DE8117254 U, DE7202762 U, DE7005952 U,

Forward Citations: WO9928562, WO17106910, WO11123347, USD830280, USD583745, USD583744, USD583743, USD566029, US9126775, US8590674, US7264092, US7032720, US6863481, US6116062, US6000668, US2015217725, US2011226565, US2006144649, US2004226780, US2004071533, US2003159892, EP2826738, EP2826738, EP2397392, EP2397392, DE10209162, DE10033364, CN102363433,

Abstract:

Vehicles without their own brakes carry wheel chocks, which are releasably fixed in a holder which can be fastened on the vehicle. With an arrangement of this type it is possible to achieve high operational dependability and cost-effective availability by providing, in the area of the lateral edges of the bottom plate of the wheel chock and the lateral cheeks of the base plate of the holder, a holding device with coupling elements, which can be brought into mutual engagement, which are respectively embodied as insertion bolt and receiving pocket and can be brought into mutual engagement by means of an L-shaped movement with an insertion movement extending perpendicularly in respect to the base plate and a push movement extending in the longitudinal direction of the base plate, and that at least one spring arm projects backward from the base plate of the holder, which has at least one protrusion which reaches around the back edge of the wheel chock when the holding device is brought into engagement and can be taken out of engagement against the spring force of the spring arm.



19) Family number: 62738603 (US2018001728A)

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Title: REGENERATIVE HYDRAULIC SHOCK-ABSORBER FOR VEHICLE SUSPENSION

Priority: IT2014TO01077 20141219 WO2015IB58746 20151112

Family:

Publication number	Publication date	Application number	Application date
BR112017013112 A2	20180109	BR20171113112	20151112
CN107208727 A	20170926	CN201580069244	20151112
EP3233543 A1	20171025	EP20150822998	20151112
IN201717019420 A	20170929	IN201717019420	20170602
US2018001728 AA	20180104	US20150537143	20151112
US10052926 BB	20180821	US20150537143	20151112
WO16097898 A1	20160623	WO2015IB58746	20151112
WO16097898 A8	20160901	WO2015IB58746	20151112

Probable Assignee: MAGNETI MARELLI SPA

Assignee(s):(std): MAGNETI MARELLI SPA ; SCUOLA SUPERIORE DI STUDI UNI E PERFEZIONAMENTO SANT ANNA ; SISTEMI SOSPENSIONI SPA

Assignee(s): SISTEMI SOSPENSIONI S P A ; SCUOLA SUPERIORE DI STUDI UNIVERSITARI E PERFEZIONAMENTO SANT ANNA ; MAGNETI MARELLI S P A

Inventor(s):(std): CONTI PIERO ANTONIO ; STEFANINI CESARE ; MILAZZO MARIO ; GRECO GIORDANO ; INGLESE FRANCESCO ; NEPOTE ANDREA ; PIERO ANTONIO CONTI ; GIORDANO GRECO ; ANDREA NEPOTE ; FRANCESCO INGLESE ; MARIO MILAZZO ; CESARE STEFANINI

Agent(s): RONDANO DAVIDE; HOWARD AND HOWARD ATTORNEYS PLLC; RONDANO DAVIDE ET AL

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 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 JP KE KG KM KN KP KR 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): B60G13/14 B60K25/10 F02B63/04 F16F9/18 F16F9/19 F16F9/32 H02K35/02 H02K49/10 H02K7/06 H02K7/18
H02P9/00 (Advanced/Invention);
F16F9/49 (Advanced/Non-invention)

International class (IPC B60G13/14

1-7):

CPC: H02P9/008 H02K7/06 B60K25/10 F16F9/185 F16F9/19 H02K49/102 H02K35/02 H02K7/1876 B60K2025/103 B60G2206/41 H02K2207/00 B60G13/14 B60G2300/60 F16F9/3207 F16F2230/10

Classification Explorer

Cited documents: WO12015488 A1, WO09129363 A1, US9938826 BB, US9938825 BB, US9427905 BB, US9297255 BB, US9217448 BB, US9144929 BB, US9062694 BB, US6817252 BB, US6789458 BB, US6722261 BA, US6722260 BA, US6670805 BA, US6588313 BB, US6142059 A, US6119579 A, US5977778 A, US5901633 A, US5710514 A, US5704268 A, US5464079 A, US5231352 A, US4896584 A, US4821849 A, US4749936 A, US4615512 A, US3425218 A, US3318793 A, US3225541 A, US2934175 A, US2015247514 AA, US2015233399 AA, US2015192152 AA, US2014163664 AA, US2013152572 AA, US2013152571 AA, US2013152568 AA, US2011120300 AA, US2006207247 AA, EP1878598 A1, DE4107290 C1,

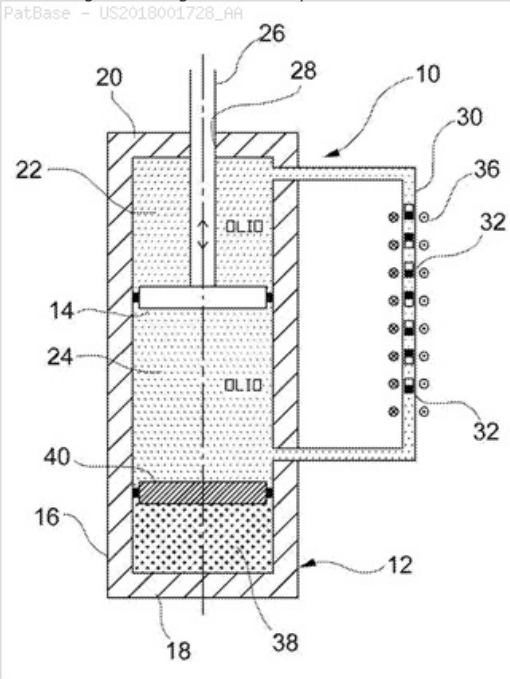
DE102008030577 A1

CN104044426 A, CN103339405 A,

Forward Citations: WO18171827,

Abstract:

The shock-absorber comprises: a cylinder containing a hydraulic working fluid; a piston slidably arranged in the cylinder so as to split the cylinder into two variable-volume working chambers, namely a first working chamber, or extension chamber, and a second working chamber, or compression chamber; an auxiliary conduit in fluid communication on one side with the first working chamber and on the other with the second working chamber; a train of permanent magnets slidably arranged in the auxiliary conduit so as to reciprocally move along the auxiliary conduit, dragged by the working fluid flowing between the first and second working chambers through the auxiliary conduit as a result of the reciprocating motion of the piston in the cylinder; and electric energy generating device for generating electric energy by exploiting the movement of the train of permanent magnets along the auxiliary conduit.



20) Family number: 64488607 (US9527448B)

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Title: RETRACTABLE STAIR SYSTEM WITH PRECISION ELEVATION CONTROL

Priority: US20150246601P 20151026 US20160149138 20160508

Family:	Publication number	Publication date	Application number	Application date
	CA2929532 AA	20170426	CA20162929532	20160510
	US9527448 BA	20161227	US20160149138	20160508

Probable Assignee: TORKLIFT INT INC

Assignee(s):(std): TORKLIFT INT INC

Assignee(s): CRAWFORD JOEL ; KAY JACK

Inventor(s):(std): KAY JACK ; CRAWFORD JOEL

Agent(s): FINLAYSON AND SINGLEHURST; R REAMS

International class (IPC B60R3/00 B60R3/02 (Advanced/Invention)

8-9):

CPC: E06C5/28 E06C9/14 B60R3/02 E04F11/066

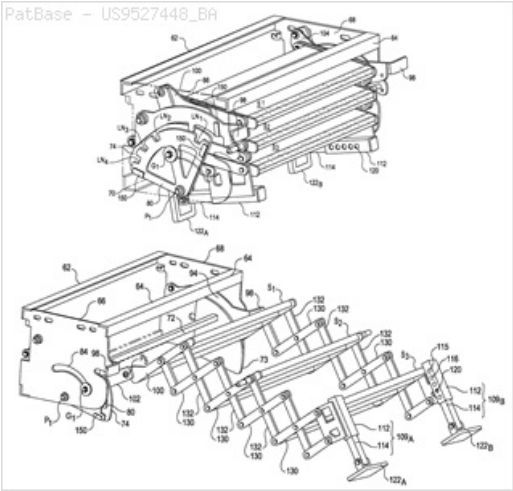
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Cited documents: US9010473 BA, US8678411 BB, US8251178 BB, US8246063 BA, US6659224 BB, US6213486 BA, US6082751 A, US5957237 A, US5941342 A, US5547040 A, US5505476 A, US5311965 A, US5039119 A, US5005850 A, US4720116 A, US4623160 A, US3858905 A, US3807757 A, US3756622 A, US3610658 A, US3462170 A, US3394947 A, US3180451 A, US2487921 A, US2050593 A, US2015097353 AA, US2013193667 AA, US2011140389 AA, US2009189365 AA, US2008157500 AA,

Forward Citations: US9840201, US10099622,

Abstract:

A retractable stair system for vehicles. The apparatus includes stairs which are retractable into a frame, or extendable to provide a set of stairs with relatively uniform height therebetween. Indexing plates with locking notches and companion latches with latch tongues to fit in the notches enable adjustment of the height of a top step S1 in a set of steps in an extensible-retractable stairs assembly. Extensible legs are provided which are individually vertically adjustable to provide secure engagement with an uneven substrate such as rocky ground or a sloping surface. Foot pads are pivotally attached to the extensible legs. The combination of vertical adjustability, the selection of a desired number of stairs, and individual top stair height adjustability, make the unit adaptable for use in a variety of vehicles.



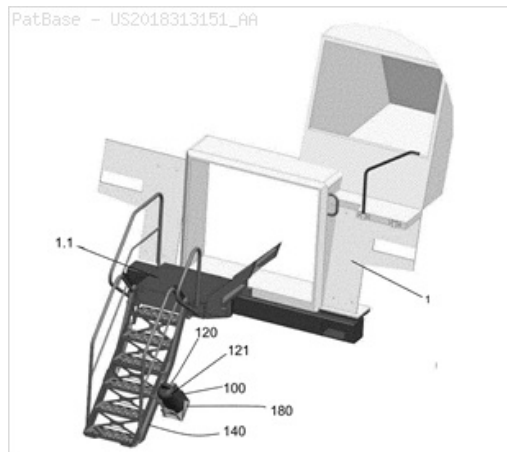
21) Family number: 66213641 (US2018313151A)

© PatBase

Title:	VEHICLE ACCESS DEVICE MOUNTED HOLDER FOR EQUIPMENT																																												
Priority:	AU20150905321 20151222		WO2016AU51261 20161220		US20180016268 20180622																																								
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Publication number	Publication date	Application number	Application date																																										
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CA3009526 AA	20180622	CA20163009526	20161220																																										
CL2018001706 A1	20190503	CL20180001706	20180621																																										
CO20180006592 A2	20180710	CO20180006592	20180626																																										
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PE12822018 A1	20180807	PE20180001188	20161220																																										
US2018313151 AA	20181101	US20180016268	20180622																																										
WO17106910 A1	20170629	WO2016AU51261	20161220																																										
Probable Assignee:	BARJOH PTY LTD																																												
Assignee(s):(std):	BARJOH PTY LTD																																												
Assignee(s):	ELLEMENT NATHAN																																												
Inventor(s):(std):	NATHAN ELLEMENT ; ELLEMENT NATHAN																																												
Agent(s):	WATERMARK INTELLECTUAL PROPERTY PTY LTD; SMITHS IP; MARINO PORZIO; MARGARITA CASTELLANOS ABONDANO																																												
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 JP KE KG KH KM KN KP KR KW KZ LA LC 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 SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW																																												
International class (IPC 8-9):	B60R11/06 B60R3/00 B60R3/02 E06C5/44 E06C7/14 (Advanced/Invention)																																												
International class (IPC 1-7):	B60R11/06 B60R3/02 E06C5/44 E06C7/14																																												
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JP class F-Index:	A62C13/78/A B60R3/00																																												
Classification Explorer																																													
Cited documents:	WO11100794 A1, WO07062464 A1, US5803208 A, US2012247871 AA, EP2481275 A1, DE1784311 A1,																																												

Abstract:

An equipment holder for mounting on an access device of a vehicle, such as on a side rail of a retractable stair or ladder of the vehicle. The holder can be configured to hold one or more wheel chocks and/or one or more fire extinguishers. The holder can be mounted by a unique mounting bracket. Other equipment may be carried in the holder e.g. one or more radio communications handsets, first aid equipment, protective clothing (such as a hard hat, weatherproof jacket) or a tool kit, or combinations of two or more thereof. The holder can include a cradle or rack mounted to the access device by the mounting bracket.



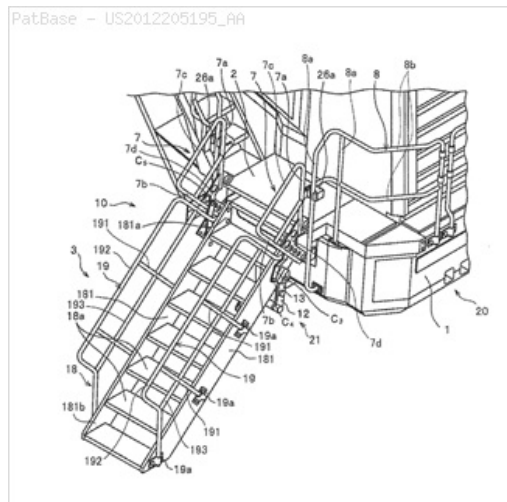
22) Family number: 50816683 (US2012205195A)

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Title:	LADDER DEVICE FOR CONSTRUCTION MACHINE																																							
Priority:	JP20100205352 20100914	JP20120504939 20110630	WO2011JP65000 20110630																																					
Family:	<table><tr><th>Publication number</th><th>Publication date</th><th>Application number</th><th>Application date</th></tr><tr><td>CN102575452 A</td><td>20120711</td><td>CN201180004249</td><td>20110630</td></tr><tr><td>CN102575452 B</td><td>20140507</td><td>CN201180004249</td><td>20110630</td></tr><tr><td>JP2012035848 A1</td><td>20140203</td><td>JP20120504939T</td><td>20110630</td></tr><tr><td>JP4967080 B1</td><td>20120704</td><td>JP20120504939T</td><td>20110630</td></tr><tr><td>JP4967080 B2</td><td>20120704</td><td>JP20120504939</td><td>20110630</td></tr><tr><td>US2012205195 AA</td><td>20120816</td><td>US20110503124</td><td>20110630</td></tr><tr><td>US8397869 BB</td><td>20130319</td><td>US20110503124</td><td>20110630</td></tr><tr><td>WO12035848 A1</td><td>20120322</td><td>WO2011JP65000</td><td>20110630</td></tr></table>				Publication number	Publication date	Application number	Application date	CN102575452 A	20120711	CN201180004249	20110630	CN102575452 B	20140507	CN201180004249	20110630	JP2012035848 A1	20140203	JP20120504939T	20110630	JP4967080 B1	20120704	JP20120504939T	20110630	JP4967080 B2	20120704	JP20120504939	20110630	US2012205195 AA	20120816	US20110503124	20110630	US8397869 BB	20130319	US20110503124	20110630	WO12035848 A1	20120322	WO2011JP65000	20110630
Publication number	Publication date	Application number	Application date																																					
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CN102575452 B	20140507	CN201180004249	20110630																																					
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Probable Assignee:	KOMATSU LTD																																							
Assignee(s):(std):	KOMATSU MFG CO LTD ; SAKON YU ; TSUTSUMI KATSUHIRO																																							
Assignee(s):	KOMATSU LTD ; KOMATSU MFG CO																																							
Inventor(s):(std):	TSUTSUMI KATSUHIRO ; SAKON YU ; KATSUHIRO TSUTSUMI ; YU SAKON																																							
Agent(s):	SHINJYU GLOBAL IP; GLOBAL IP COUNSELORS																																							
Designated states:	AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR KZ LA LC 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 PE PG PH PL PT RO RS RU 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):	B60R3/00 E02F9/00 E06C5/00 E06C5/02 (Advanced/Invention)																																							
CPC:	E02F9/0833 B60R3/02																																							
European class:	B60R3/02 E02F9/08B																																							
US class:	182/106 182/127																																							
JP class F-Term:	2D015 3D022 3D022/AA01 3D022/AC10 3D022/AD01 3D022/AE09																																							
JP class F-Index:	B60R3/00 E02F9/00/Z																																							
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Cited documents:	US6981572 BB, US5397143 A, US5397143, US3912298 A, US3912298, US3047093 A, US2009065301 AA, US2009038885 AA, US2007256893 AA, JP9278364 A2, JP3157415 U, JP2010150835 A2, JP2010116762 A2, JP2010116762, JP2009517265 T2, JP2008546576 T2, JP2008546576, JP2008546576, JP2008240278 A2, JP2006298282 A2, JP2006298282, JP10328239 A2, CN2878644 Y, CN101725320 A, CN101718074 A,																																							
Forward Citations:	WO18123007, WO17002160, WO16136535, US9816318, US9669765, US9447638, US9194180, US2017190293, US2017167197, US2016153171, US2015246642, US2013193667, US2013118832, US2013008743, US10099623, US10093238, US10005397, JP6437565, JP6174914, JP2017002160, JP2014234630, JP2013216240, JP2013216239, EP3366845, EP3366845, EP2862749, EP2862749, DE102014010488, CN107130659, CN105421205, AU2015392618, AU2015200866.																																							

Abstract:

A ladder device includes a ladder main body, a hand railing, a driving mechanism and a coupling member. One end of the coupling member is pivotably supported by the ladder main body, while the other end thereof is pivotably supported by the hand railing. The coupling member is configured to: position the hand railing between the ladder main body and a walkway when the ladder main body takes the deployed posture; pivot the hand railing in conjunction with a pivot action of the ladder main body from the deployed posture to the retracted posture; and position the hand railing further inwards of the vehicle body than the ladder main body is when the ladder main body takes the retracted posture.



23) Family number: 33089775 (US2006137266A)

Title:	FOLDING PET STAIRCASE							
Priority:	US20040639895P 20041222	US20050313135 20051220	US20090421757 20090410					
Family:	<table><tr><th>Publication number</th><th>Publication date</th><th>Application number</th><th>Application date</th></tr></table>				Publication number	Publication date	Application number	Application date
Publication number	Publication date	Application number	Application date					

Publication number	Publication date	Application number	Application date
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US2009188444 AA	20090730	US20090421757	20090410
US8091294 BB	20120110	US20090421757	20090410
WO06069086 A2	20060629	WO2005US46228	20051221
WO06069086 A3	20080124	WO2005US46228	20051221
WO10118417 A2	20101014	WO2010US30720	20100412
WO10118417 A3	20101013	WO2010US30720	20100412

Probable Assignee:	WHALEN ROBERT F
Assignee(s):(std):	WHALEN ROBERT F
Inventor(s):(std):	WHALEN ROBERT F
Inventor(s):	WHALEN ROBERT
Agent(s):	REINHART BOERNER VAN DEUREN LTD; REINHART BOERNER VAN DEUREN PC; PAE SUN Y
Designated states:	AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE 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 IS IT JP KE KG KM KN KP KR KZ LA LC 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 PE PG PH PL PT RO RS RU 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 YU ZA ZM ZW

International class (IPC 8-9): A01K29/00 A61G1/013 E04F11/00 E04F11/06 E04F19/10 E06C1/00 E06C1/383 E06C1/387 (Advanced/Invention); A01K29/00 E04F11/00 E04F11/02 E06C1/00 (Core/Invention)

CPC: A01K1/035 E06C1/52 E06C1/383 E06C1/387 E06C1/54

European class: A01K1/035 E06C1/383 E06C1/387 E06C1/52 E06C1/54

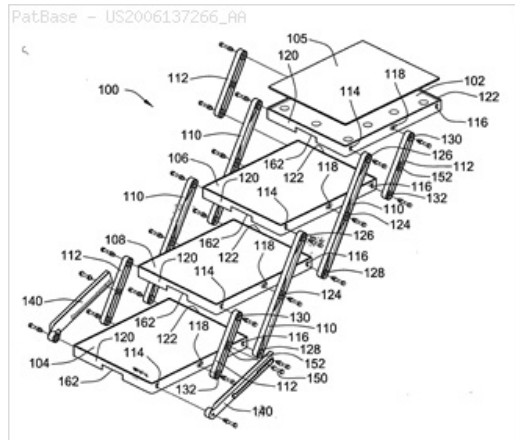
US class: 119/849 182/151 182/151S 182/157 182/157S 182/20 182/20S 52/182 52/183

Classification Explorer

Cited documents: WO06069086 A2, WO05054595 A1, USD555845 S1, USD382676 S1, US7621236 BB, US7185381 BA, US7073297 BB, US6966597 BB, US6895717 BA, US6438909 BB, US6179312 BA, US6179312 B1, US76119634 A, US600281 A, US5957237 A, US5941342 A, US5876051 A, US5870788 A, US5456479 A, US5039119 A, US5005850 A, US4751144 A, US4733752 A, US4623160 A, US4615160 A, US4571144 A, US4527941 A, US4424751 A, US4180143 A, US4108457 A, US3892290 A, US382676 A, US3493077 A, US3462170 A, US2575615 A, US2567302 A, US2236465 A, US2010083913 AA, US2008257280 AA, US2007289556 AA, US2007199258 AA, US2005210775 AA, US2005056233 AA, US2004244724 AA, US20002029532 AA, US1966679 A.

Forward Citations: WO10118417, WO10118417, WO10098539, WO10098539, WO08098110, USD834764, USD831364, USD756574, USD717713, USD664694, US9832968, US9422726, US9381397, US9380760, US9314106, US9091083, US9055824, US8955184, US8833290, US8668216, US8316595, US8091294, US2018228118, US2015141201, US2015122581, US2014296046, US2013239456, US2013193667, US2013111663, US2013047909, US2011140389, US2010031454, US2008184502, US10104864, US10099623, US10098314, KR20160099988, KR101685029, KR101040712, KR100902680, JP2015122959, ITRM20120523, CN106389016, CN106150336, CN106150336, CN103127628.

Abstract: A method and apparatus are provided, for allowing pets to ascend to and descend thereupon, through use of a foldable staircase having a plurality of stair treads operatively connected by articulating links in such a manner that the treads can be pivoted in unison from a stowed position of the staircase, in which the treads are substantially stacked upon one another, to a plurality of extended positions, in which the links position the treads in a spaced and parallel relationship to one another. A latch selectively secures the staircase in a selected one of the extended positions. The latch is configured for preventing further pivoting of the treads in either direction between the stowed and extended positions of the staircase, when the latch is engaged.



24) Family number: 65085789 (US2018093614A)

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Title: WORK VEHICLE

Priority: JP20150164485 20150824 WO2016JP71739 20160725 US20170566752 20171016
US20180110251 20180823 JP20180201577 20181026

Family:	Publication number	Publication date	Application number	Application date
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	EP3342646 A1	20180704	EP20160838998	20160725
	EP3342646 A4	20190220	EP20160838998	20160725
	JP2017043112 A2	20170302	JP20150164485	20150824
	JP2019011064 A2	20190124	JP20180201577	20181026
	JP6427472 B2	20181121	JP20150164485	20150824
	US2018093614 AA	20180405	US20160566752	20160725
	US2018361938 AA	20181220	US20180110251	20180823
	US10099623 BB	20181016	US20160566752	20160725
	WO17033651 A1	20170302	WO2016JP71739	20160725

Probable Assignee: KOMATSU LTD

Assignee(s):(std): KOMATSU LTD ; KOMATSU MFG CO LTD

Inventor(s):(std): SETOGUCHI MASATAKA ; MURAMOTO KENICHI ; ITO JUN ; SHIMASAKI YUUKI ; HAMAGUCHI MASAHIKO ; SHIMAZAKI YUKI ; ITO ATSUSHI

Agent(s): GRUENECKER PATENT U RECHTSANWALTE PARTG MBB; FUKAMI PATENT OFFICE PC; DRINKER BIDDLE AND REATH LLP

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 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 KE KG KM KN KP KR 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): B60R3/00 B60R3/02 E02F9/08 (Advanced/Invention)

CPC: E02F9/0833 B60R3/02

JP class F-Term: 3D022 3D022/AA01 3D022/AC10 3D022/AD01 3D022/AE08 3D022/AE10 3D022/AE11 3D022/AE12 3D022/AE13 3D022/AE15 3D022/AE16 3D022/AE30

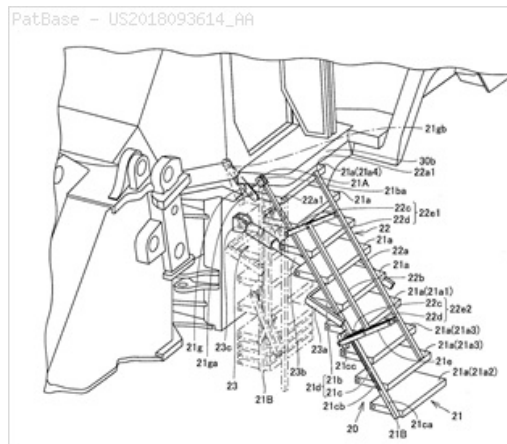
JP class F-Index: B60R3/02

[Classification Explorer](#)

Cited documents: US9725042 BA, US8931792 BA, US6942271 BA, US6401861 BA, US5941342 A, US5624127 A, US5397143 A, US4733752 A, US4720116 A, US3869022 A, US2017246992 AA, US2016244944 AA, US2015211208 AA, US2015136523 AA, US2013193667 AA, US2013193667, US2013048400 AA, US2012205195 AA, US2010181741 AA, US2009188444 AA, JP8301015 A2, JP8301015, JP7008089 U, JP51082168 A2, JP3157415 U, JP3157415 U, JP3115544 U, JP3107354 U1, JP3107354 U, JP2008008183 A2, JP2008008183 A2, JP2006298282 A2, JP2006298282, GB2503733 A1, GB2503733,

Abstract:

A climbing device body can assume by a rotation operation an erect, retracted position allowing a first end portion to be positioned above and a second end portion to be positioned below and a tilted, deployed position allowing the second end portion to be positioned sideways of the vehicular body outer than the first end portion. A handrail is engaged with the rotation operation to be capable of assuming a raised state allowing a gripping portion to assume a first position distant from the climbing device body in a deployed position and a folded state allowing the gripping portion to assume a second position close to the climbing device body in a retracted position.



25) Family number: 59605901 (US2016298970A)

Title: ROBOTIC CLEANING DEVICE

Priority: WO2013EP77377 20131219

Family:

Publication number	Publication date	Application number	Application date
CN105849660 A	20160810	CN201380081328	20131219
EP3084540 A1	20161026	EP20130817911	20131219
JP2017501473 T2	20170112	JP20160526762T	20131219
KR20160100312 A	20160823	KR20167017296	20131219
US2016298970 AA	20161013	US20130100667	20131219
US10209080 BB	20190219	US20130100667	20131219
WO15090397 A1	20150625	WO2013EP77377	20131219

Probable Assignee: ELECTROLUX AB

Assignee(s):(std): AB ELECTROLUX : ELECTROLUX AB

Inventor(s):(std): HAEGERMARCK ANDERS ; FORSBERG PETTER ; LINDHE MAGNUS

Agent(s): SELIN WRETBLAD EVA; RYUKA IP LAW FIRM; RATNERPRESTIA; SAMZELIUS ROGER

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 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 JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY LA 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 SZ SY TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC) A47L11/24 A47L11/40 A47L9/28 B60L11/18 G01C21/20 G05D1/02 (Advanced/Invention)

CPC: G05D2201/0203 G01C21/206 A47L11/24 A47L11/4011 A47L11/4066 A47L11/4041 A47L2201/06
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US class: 701/523

JP class F-Term: 3B057 3B057/DA00 5H301 5H301/AA02 5H301/BB11 5H301/CC03 5H301/CC06 5H301/CC10 5H301/FF01
5H301/FF11 5H301/GG08 5H301/GG09 5H301/QO04

JP class F-Index: A47L9/28/E G05D1/02/H

Classification Explorer

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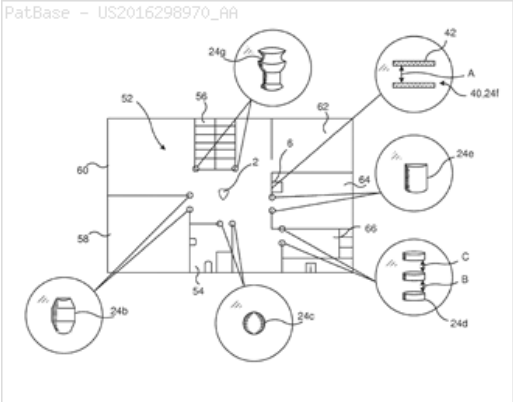
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Forward Citations: US9798957, US2016089783, US10011016, EP3185096, EP3185096, CN106759056, CN106759056, CN105990876, CN105286729,

Abstract:

A robotic cleaning device having a body, and an obstacle detecting device configured to obtain data from a vicinity of the robotic cleaning device. The robotic cleaning device further has a propulsion system configured to drive the robotic cleaning device across a surface to be cleaned, and a cleaning member. The device also has a processing unit arranged to extract at least one feature from

data obtained by the obstacle detecting device, compare the attained feature with stored features and when the attained feature matches one of the stored features, deduce a position of the robotic cleaning device.



26) Family number: 11100931 (US6029775A) © PatBase

Title: Access device
Priority: AU1998PP01751 19980210 AU19990015451 19990208 CA19992261359 19990210
Family:

Publication number	Publication date	Application number	Application date
AU175198 A0	19980305	AU1998PP01751	19980210
AU199915451 A1	19990826	AU19990015451	19990208
AU749701 B2	20020704	AU19990015451	19990208
CA2261359 AA	19990810	CA19992261359	19990210
CA2261359 C	20030729	CA19992261359	19990210
US6029775 A	20000229	US19990246235	19990208
ZA9901025 A	19990810	ZA19990001025	19990209

Probable Assignee: JUSTOY PTY LTD
Assignee(s):(std): JUSTOY PTY LTD
Assignee(s): WHYBIN CHRISTOPHER NASH ; HEDLEY ROBERT IAN
Inventor(s):(std): HEDLEY ROBERT IAN ; WHYBIN CHRISTOPHER NASH
Inventor(s): CHRISTOPHER NASH WHYBIN ; ROBERT IAN HEDLEY
Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; HALFORDS IP; MARKS AND CLERK
International class (IPC 8-9): B60R3/02 B62D25/22 E06C5/02 E06C5/04 E06C5/24 (Advanced/Invention); B60R3/00 B62D25/00 E06C5/00 (Core/Invention)
International class (IPC 1-7): B60R3/02 B62D25/22 E06C5/04 E06C5/22 E06C5/24 E16C
CPC: E02F9/0833 B60R3/02 E06C5/02
European class: B60R3/02 E02F9/08B E06C5/02
US class: 182/127 182/84 280/166

[Classification Explorer](#)

Cited documents: US5813494 A, US4245716 A, GB1027763 A, DE1135326 B,
Forward Citations: WO13156219, WO11116415, WO07062464, WO06036279, USD562352, US9816318, US9222306, US9145091, US8931792, US8881867, US8668216, US8186763, US7870932, US7354050, US6378654, US2017167197, US2015216124, US2014203535, US2014048352, US2013092474, US2011140389, US2010090517, US2009065301, US2006070804, US2005263976, US2003230867, JP5828831, JP2013032162, JP2009517265, DE202012003977, DE202009010035, AU2005290239,

Abstract:
An access device for providing access between a substrate surface and the cabin of a vehicle. The device is attached to a rotating actuator extending outwardly from the side of the cabin for moving of the device between the access position (Fig. 1) and the storage position (Fig. 3). The device includes a substantially triangularly shaped platform. A first side of the platform is attached to the rotating actuator. A second side of the platform has the ladder depending therefrom. The third side of the platform is, in the access position (Fig. 1) located proximal to the cabin. The device is rotated by the rotating actuator to the storage position (Fig. 3) wherein the device is substantially upturned relative to the access position (Fig. 1) of the device and wherein a substantial part of the device is positioned above the rotating actuator.

