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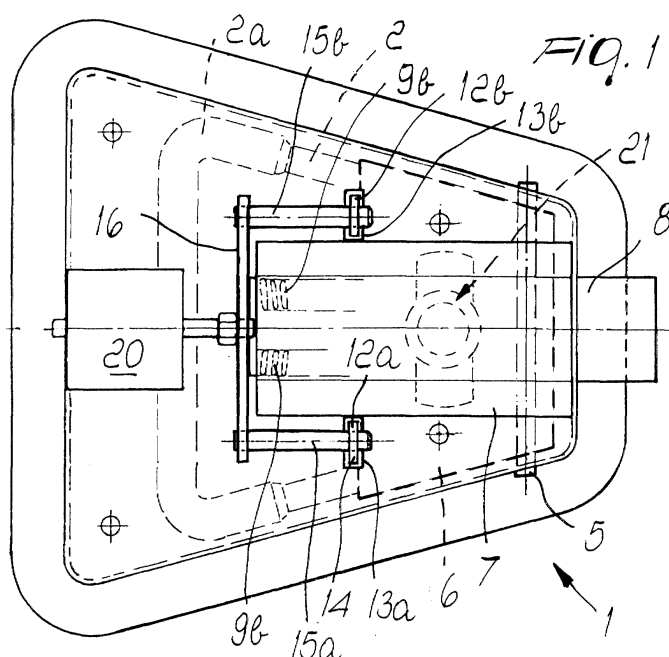
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(54) **Locking system with electromagnetic deactivation of a handle for doors of trucks, trailers or the like**

(57) A locking system (1) with electromagnetic deactivation of a handle (2) for doors of trucks, trailers or the like, comprising a fixed box-like element where to the end of a handle (2) is articulated about an axis which is parallel and proximate to the door; the handle (2) is associated with a latch-type closure lug (8) which is mounted so that it can slide parallel to the door, and the locking

system (1) comprises at least one plate (12a,12b) which is rigidly coupled to the handle (2), passes through a slot of the bottom of the box-like element and has an end crossed by a notch (14) for the passage of a sliding locking member (15a,15b) connected to an electromagnet (20) which is mounted behind the bottom of the box-like element and is provided with actuation means which are adapted to be activated by a remote control.



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Description

[0001] The present invention relates to a locking system with electromagnetic deactivation of a handle for doors of trucks, trailers or the like.

[0002] Conventional actuation handles for closing and opening doors of trucks, trailers or the like act on respective sliding lugs; in particular, handles are known which are articulated to the doors about axes parallel to the planes of the doors, so that the door is opened by moving frontally away from the plane of the door the part of the handle that is gripped. This type of handle has elastic return means which return the grip portion of the handle into a position in which it is adjacent to the door, while the lug has an inclined end profile, is partially disengaged from the handle and is provided with elastic elements which return it to a closure configuration in order to obtain a latch-type closure in interaction with a fixed selva profile.

[0003] It is also known to use key-operated locks assemblies which are mounted in the body of the handle and allow to open the handle only after release by means of the key.

[0004] Moreover, small remote controls for actuating the locks of vehicle doors are becoming widespread, and it has been devised to operate by means of a remote control the locking and release of the handle of doors of trucks, trailers or the like, but it is necessary to provide a device which constantly allows the free operation of the lug during latch-type closure (even if the remote-control actuation system fails).

[0005] The aim of the present invention is to meet such needs by providing a locking system with electromagnetic deactivation of a handle for doors of trucks, trailers or the like which allows the lug to operate the closure in case of failure of the electromagnetic apparatus for releasing the handle.

[0006] This aim is achieved by the present locking system with electromagnetic deactivation of a handle for doors of trucks, trailers or the like, comprising a fixed box-like element whereto the end of a handle is articulated about an axis which is parallel and proximate to the door, the handle being associated with a latch-type closure lug which is mounted so that it can slide parallel to the door, characterized in that it comprises at least one plate which is rigidly coupled to the handle and passes through a slot of the bottom of said box-like element and has an end crossed by a notch for the passage of a sliding locking member connected to an electromagnet which is mounted behind the bottom of the box-like element and is provided with actuation means adapted to be activated by a remote control.

[0007] Further characteristics and advantages of the present invention will become better apparent from the detailed description of a preferred but not exclusive embodiment of a locking system with electromagnetic deactivation of a handle for doors of trucks, trailers or the like, illustrated only by way of non-limitative example in

the accompanying drawings, wherein:

Figure 1 is a front view of the locking system according to the invention;

Figure 2 is a partially sectional side view of the locking system.

[0008] With reference to the figures, 1 generally designates a locking system with electromagnetic deactivation of a handle 2 for doors of trucks, trailers or the like according to the invention.

[0009] The locking system 1 comprises a fixed box-like element 3 which is substantially shaped like an isosceles trapezium, is open toward the front of the door P and is peripherally provided with an outer perimetric rim 4 which is folded at 90°.

[0010] An end 6, configured as a complementarily shaped box, of the handle 2 is articulated to the element 3 by means of a pivot 5 which is vertical and substantially parallel to the plane of the door. The handle 2 has an enlarged grip region 2a which is joined, at its sides, by means of two slightly converging portions, to the complementarily shaped box-like portion.

[0011] A structure 7 which defines a tubular seat for the horizontal guiding, see arrow A, of a lug 8 which ends with an inclined profile 8a of a latch-operated closure is mounted below the box-like element 3.

[0012] Two helical compression springs 9a, 9b are mounted between the bottom of the tubular structure 7 and the corresponding end of the lug and push the lug into the closure configuration, in the direction of arrow A.

[0013] A protrusion 11 is rigidly coupled to the lug 8 and a plate 11 rests against such protrusion; plate 10 is welded to the front part of the complementarily shaped box 6. The actuation of the handle 2 in the direction of arrow B causes the movement (by means of the plate 11 and the block 10) of the lug 8 in the opposite direction with respect to arrow A in contrast with the springs 9a and 9b.

[0014] The locking system according to the invention comprises two plates 12a and 12b which are rigidly coupled, by way of one of their respective ends, to the complementarily shaped box 6 of the handle and pass through respective slots 13a and 13b of the bottom 3a of the element 3.

[0015] The ends of the plates 12a and 12b are crossed by respective notches 14 for the passage of corresponding sliding locking members 15a and 15b joined by a cross-member 16 which is connected, by way of a threaded portion 17 and a locking nut 18, to the movable stem 19 of an electromagnet 20 which is mounted behind the bottom of the box-like element 3; the electromagnet 20 is provided with actuation means which are adapted to be activated by a remote control.

[0016] It is noted that the lug can close in a latch-like manner even without having to activate the electromagnet, and that a lock assembly 21 for key-operated closure can also be provided; such assembly must be in

the open configuration when one wishes to intervene with the remote control.

[0017] It has thus been found that the invention achieves the intended aim and objects.

[0018] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept. 5

[0019] All the details may furthermore be replaced with other technically equivalent ones.

[0020] In practice, the materials used, as well as the shapes and the dimensions, may be any according to requirements without thereby abandoning the scope of the protection of the appended claims. 10

[0021] The disclosures in Italian Utility Model Application No. BO2000U000091 from which this application claims priority are incorporated herein by reference. 15

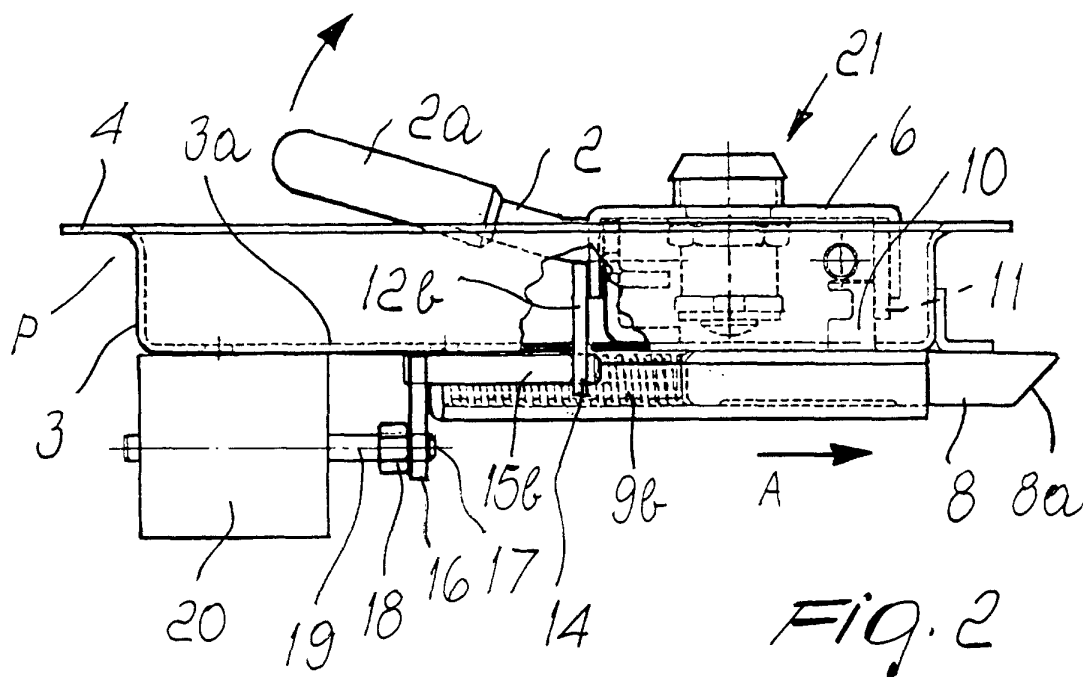
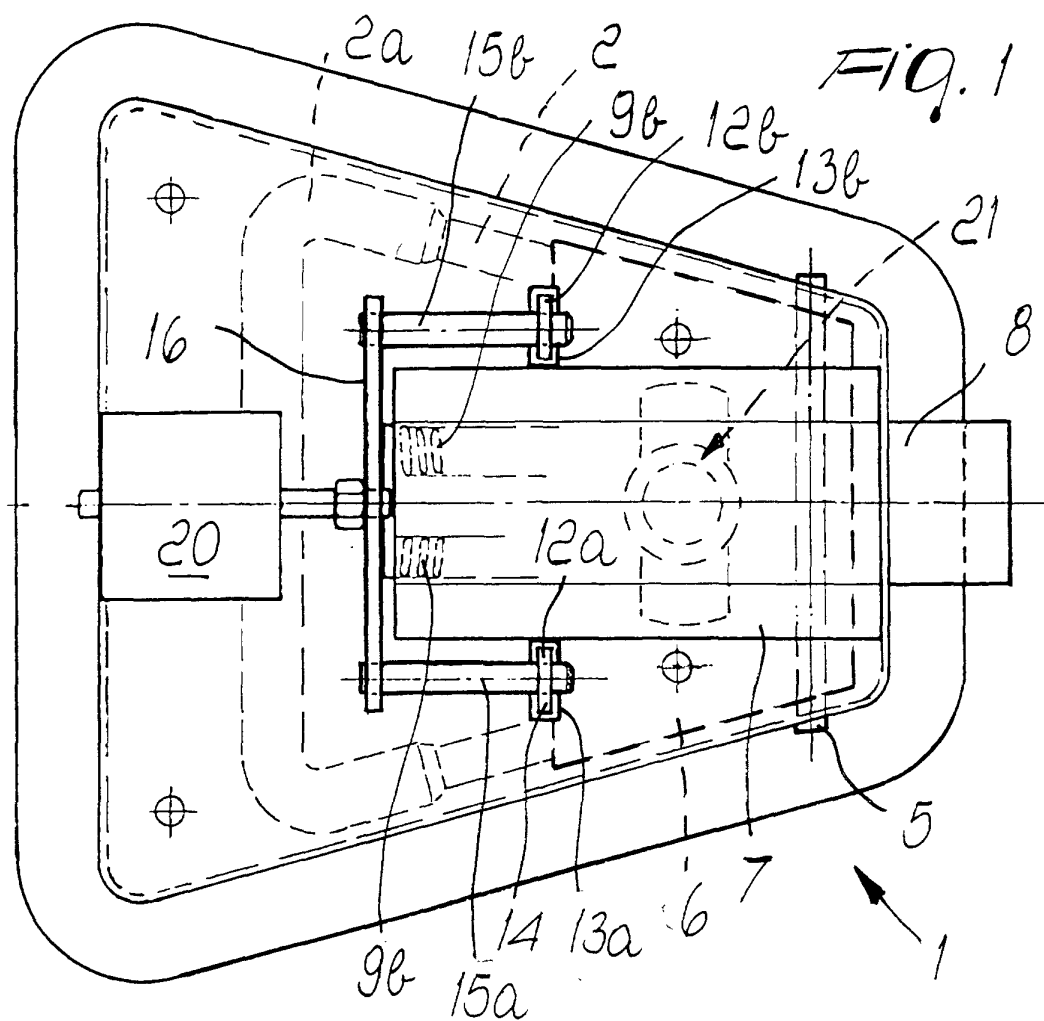
[0022] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs. 20

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Claims

1. A locking system (1) with electromagnetic deactivation of a handle (2) for doors of trucks, trailers or the like, comprising a fixed box-like element (3) whereto the end of a handle (2) is articulated about an axis which is parallel and proximate to the door, the handle being associated with a latch-type closure lug (8) which is mounted so that it can slide parallel to the door, **characterized in that** it comprises at least one plate (12a,12b) which is rigidly coupled to the handle (2) and passes through at least one slot (13a,13b) of the bottom of said box-like element and has an end crossed by a notch (14) for the passage of a sliding locking member (15a,15b) connected to an electromagnet (20) which is mounted behind the bottom of the box-like element and is provided with actuation means adapted to be activated by a remote control. 30 35 40
2. The locking system according to claim 1, **characterized in that** it comprises two plates (12a,12b) rigidly coupled to the handle and two sliding locking members (15a,15b). 45 50

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 2955

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	EP 0 839 977 A (PASTORE & LOMBARDI S.R.L.) 6 May 1998 (1998-05-06) * figures *	1	E05B65/14 E05B47/06
A	US 4 321 812 A (PELCIN) 30 March 1982 (1982-03-30) * figures *	1	
A	US 4 309 884 A (DAVIS) 12 January 1982 (1982-01-12) * figures *	1	
A	US 5 755 126 A (LANIGAN ET AL.) 26 May 1998 (1998-05-26) * figures *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E05B
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 28 September 2001	Examiner Vacca, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 01 11 2955

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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28-09-2001

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82