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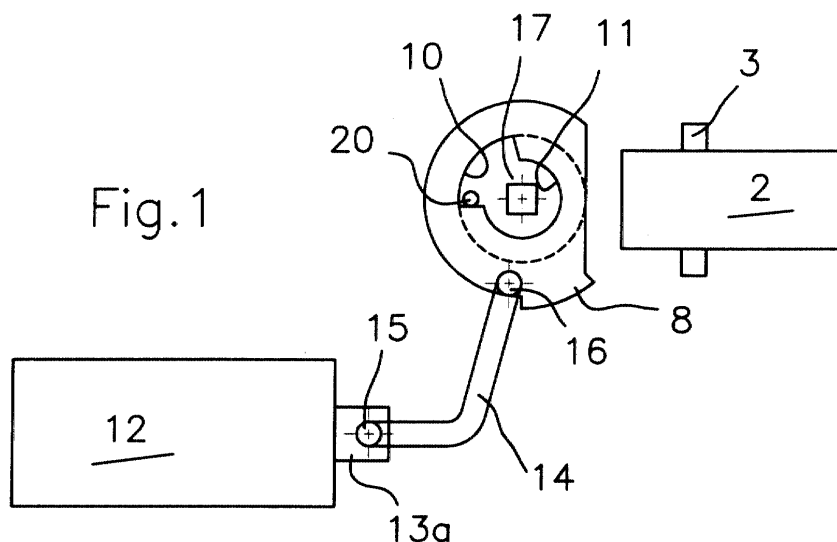
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(54) **Key-operated lock assembly for emergency actuation of the button of a handle for doors of trucks, trailers or the like**

(57) A key-operated lock assembly for emergency actuation of the button (2) of a handle for doors of trucks, trailers or the like, in which the actuation key can be extracted in three positions which lie at 90 degrees to each other and comprises: an outer ring, which is fitted so that it can rotate coaxially with the plug of the key-operated lock in the casing of the handle proximate to the handle locking button, the ring having a perimetric profile which forms a lip (8) which is suitable to block the rotation of the button (2) and a recess which allows the rotation of the button in order to release the handle and an arc-like slot (10) extending substantially through 90 degrees; an

electromagnet (12), in which the fixed part is rigidly coupled to the handle casing and the moving element is connected to the outer ring by means of a transmission stem (14); and a circular inner ring (17), which is rigidly coupled to the rotating plug of the lock and is provided with a pin (20) which is rigidly coupled thereto, protrudes from its surface and is suitable to enter the arc-like slot (10) of the outer ring (7); the rotation of the plug being suitable to produce the rotation of the outer ring if the electromagnet fails to operate, the electromagnet being able to move the outer ring to a configuration for locking or releasing the button when the key is extracted in an intermediate position.



Description

[0001] The present invention relates to a key-operated lock assembly for emergency actuation of the button of a handle for doors of trucks, trailers or the like.

[0002] Actuation handles and corresponding upper and lower rotary bolt ends for closing wings of doors of trucks, trailers or the like are known; it is also known to use key-operated lock assemblies arranged in the handle body which allow to operate a button for releasing the handle only after inserting the key.

[0003] It is also known that small remote controls for actuating the locks of vehicle doors are becoming widespread.

[0004] It has been envisaged to actuate, by means of a remote control, the locking and release of the button of the handle of doors of trucks, trailers or the like, but it is necessary to provide a key-operated safety system which allows manual locking and release of the locking button of the actuation handle if the remote-control opening system fails.

[0005] The aim of the present invention is to meet these requirements, by providing a key-operated lock assembly for emergency actuation of the button of a handle for doors of trucks, trailers or the like which allows to actuate the button in case of malfunction of the electromechanical apparatus for locking the handle locking button.

[0006] This aim and these and other objects which will become better apparent hereinafter are achieved by a key-operated lock assembly for emergency actuation of the button of a handle for doors of trucks, trailers or the like, characterized in that the actuation key can be extracted in three positions which lie at 90 degrees to each other and comprises: an outer ring, which is fitted so that it can rotate coaxially with the plug of the key-operated lock in the casing of the handle proximate to the handle locking button, said ring having a perimetric profile which forms a lip which is suitable to block the rotation of said button and a recess which allows the rotation of said button in order to release the handle and an arc-like slot which covers substantially 90 degrees; an electromagnet, in which the fixed part is rigidly coupled to said handle casing and the moving element is connected to said outer ring by means of a transmission stem; and a circular inner ring, which is rigidly coupled to said rotating plug of said lock and is provided with a pin which is rigidly coupled thereto, protrudes from its surface and is suitable to enter said arc-like slot of the outer ring; the rotation of the plug being suitable to produce the rotation of the outer ring if the electromagnet fails to operate, the electromagnet being able to move said outer ring to a configuration for locking or releasing said button when the key is extracted in an intermediate position.

[0007] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a key-operated lock assembly for emergency

actuation of the button of a handle for doors of trucks, trailers or the like, according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figures 1 and 2 are front views of a key-operated lock assembly for emergency actuation of the button of a handle for doors of trucks, trailers or the like, respectively in the button release configuration and in the button locking configuration;

Figure 3 is a partially sectional side view of the block according to the invention.

[0008] With reference to the figures, the reference numeral 1 generally designates a key-operated lock assembly for emergency actuation of the button 2 of a handle for doors of trucks, trailers or the like according to the invention.

[0009] The button 2 is articulated to the casing that contains the functional elements of the handle by means of a pivot 3 which is orientated frontally; the button 2 has a notch 4 in which it is possible to insert a protrusion 5 of the actuation handle; in order to allow to open the handle (which is opened by turning in the direction of the arrow A), the button 2 must be pressed in the direction of the arrow B.

[0010] First of all, it is noted that the actuation key of the lock assembly 1 must be extractable in three positions which lie substantially at 90 degrees to each other.

[0011] The invention comprises an outer ring 7, which is fitted so that it can rotate coaxially with the plug of the key-operated lock in the casing of the handle proximate to the handle locking button: the ring 7 has a perimetric profile which is circular over substantially 180 degrees and then forms an outer lip 8 of a certain thickness, which is meant to arrange itself between an upper lug 2a of the button and the handle 6 in order to lock the rotation of the button and a recess 9 which, when located at the lug 2a of the button 2, allows the rotation of the button 2 in order to release the handle.

[0012] The outer ring 7 has an arc-like slot 10 extending substantially through 90 degrees and connected to a central circular hole 11 which is centered with the plug of the lock assembly.

[0013] The reference numeral 12 designates an electromagnet in which the fixed part is rigidly coupled to the casing of the handle and the moving element 13 can move from a condition 13a for releasing the button 2 to a condition 13b for locking the button.

[0014] The moving element 13 is connected to the outer ring 7 by means of a transmission stem 14 which is articulated at its ends by means of pivots 15 and 16: upon actuation from the configuration 13a to the configuration 13b, the ring moves from a condition in which the button 2 is released to a condition in which said button is locked.

[0015] The reference numeral 17 designates a circular inner ring which is rigidly coupled, through a tang 18

having a square cross-section and a nut 19, to the rotating plug of the lock and has a pin 20 which is rigidly coupled thereto, protrudes from its surface and enters the arc-like slot 10 of the outer ring in order to rotationally actuate it.

[0016] The operation of the device according to the invention is as follows: in the normal operating condition, the electromagnet 12 is actuated by the remote control for opening and closure, and the outer ring 7 is moved by the stem 14 from the configurations for locking and releasing the button 2.

[0017] In case of malfunction of the remote control (due to failure of the remote control, of the electromagnet 12 or of the electrical system of the truck), the actuation key of the key-operated lock assembly is used.

[0018] The rotation of the plug associated with the key turns the outer ring 7 through the pin 20.

[0019] By extracting the key in an intermediate position, the arc-like slot 10 allows the outer ring to turn freely with respect to the inner ring and the electromagnet can move the outer ring into the configuration for locking or releasing the button 2.

[0020] It has thus been shown that the invention achieves the intended aim.

[0021] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0022] All the details may furthermore be replaced with other technically equivalent ones.

[0023] 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.

[0024] The disclosures in Italian Utility Model Application No. BO2000U000086 from which this application claims priority are incorporated herein by reference.

[0025] 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.

allows the rotation of said button in order to release the handle and an arc-like slot (10) extending substantially through 90 degrees; an electromagnet (12), in which the fixed part is rigidly coupled to said handle casing and the moving element (13) is connected to said outer ring (7) by means of a transmission stem (14); and a circular inner ring (17), which is rigidly coupled to said rotating plug of said lock and is provided with a pin (20) which is rigidly coupled thereto, protrudes from its surface and is suitable to enter said arc-like slot (10) of the outer ring (7); the rotation of the plug producing the rotation of the outer ring if the electromagnet fails to operate, the electromagnet being able to move said outer ring to a configuration for locking or releasing said button when the key is extracted in an intermediate position.

Claims

1. A key-operated lock assembly (1) for emergency actuation of the button (2) of a handle for doors of trucks, trailers or the like, **characterized in that** the actuation key can be extracted in three positions which lie at 90 degrees to each other and comprises: an outer ring (7), which is fitted so that it can rotate coaxially with the plug of the key-operated lock in the casing of the handle proximate to the handle locking button, said ring having a perimetric profile which forms a lip (8) which is suitable to block the rotation of said button (2) and a recess (9) which

Fig.3

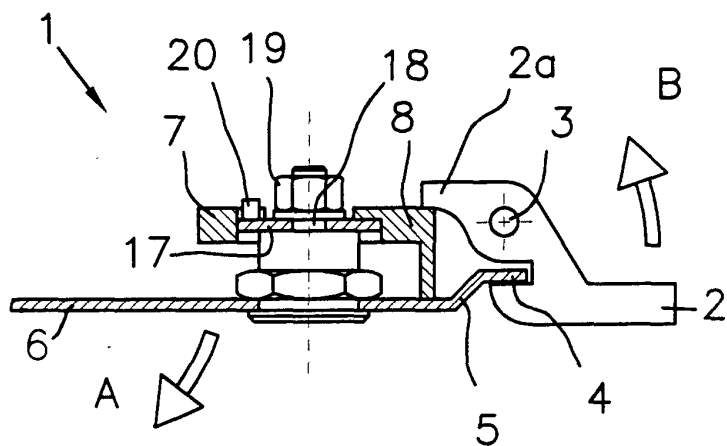


Fig.2

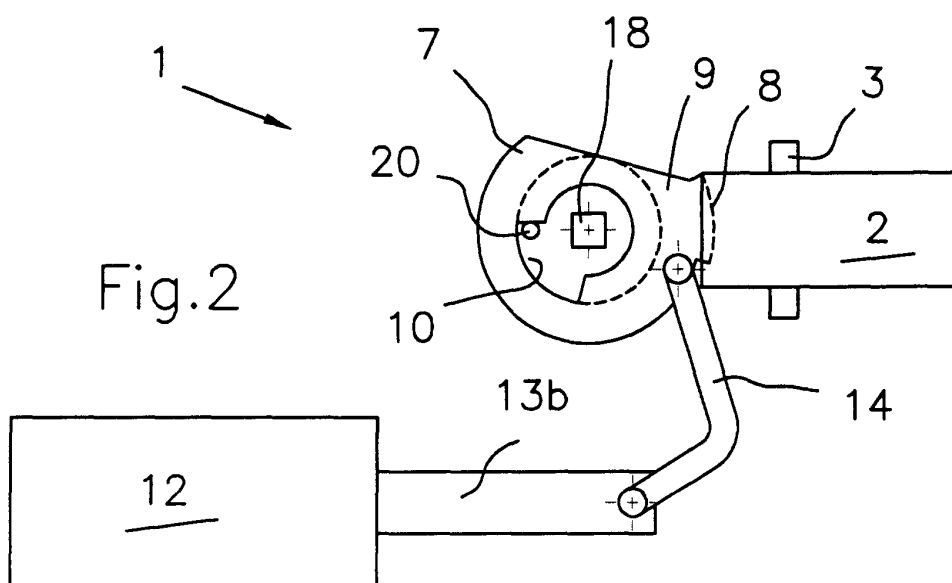


Fig.1

