

Description

The present invention relates to an article carrier adapted to be mounted on an exterior body surface of an automotive vehicle, including at least one article securing member mounted for longitudinal movement on an elongated rail, said rail composing a plurality of longitudinally spaced apertures, said article securing member including a latching member cooperable with said apertures in said rail for locking and longitudinally adjusting said article securing member at predetermined positions along said rail, a spring means biasing one end of the latching member into engagement with the aperture, the securing member carrying an operating mechanism comprising a member movable from an undepressed latching position to a depressed unlatching position.

Racks for carrying luggage and other articles on an exterior surface of automobile vehicles and the like have become quite popular. Typically, such racks and carriers are mounted on the vehicle roof or rear trunk lid, although other surfaces are sometimes used, such as the upper surface of a cap or canopy for a pick-up truck.

There are many prior art patents on such luggage racks and article carriers. One general type rack employs raised side rails mounted substantially above the surface of the vehicle on fixed stanchions with relatively flat intermediate skid strips or load supporting slats therebetween. Bott Re. 26,538 and Re. 26,539 are examples of expired patents of this kind. Ingram U.S. patent 4,225,068; Kowalski U.S. patents 4,239,138 and 4,279,368 and Mareydt U.S. patent 4,616,772 are more recent examples disclosing luggage racks and carriers of this general type. Because the side rails are elevated above the roof surface, they create undesirable wind resistance and noise and because they are unsupported between the stanchions, their load carrying capacity is somewhat limited.

Another general type of rack or carrier that has met with some commercial acceptance employs relatively flat, low-profile slats along the sides on which stanchions connected to cross bars or article tie down members are mounted. Bott U.S. patent 4,516,710 and Re. 32,706 along with their issued parent patents and many of the numerous references cited therein are illustrative of this style rack. Other U.S. patents disclosing racks and carriers of this type are : Ingram 4,132,335 and 4,244,501; Kowalski et al. 4,372,469; Rasor et al. 4,406,386; Cronce 4,448,337; Stapleton et al. 4,469,261 and many of the references cited in these patents. The side slats disclosed in these patents are generally characterized as being substantially wider than they are high and have a substantially flat, horizontal upper article carrying surface.

For use with vehicles having roof surfaces with a more rounded contour, Bott U.S. patents 4,684,048 and 4,754,905 disclose carriers having supporting side slats with non-horizontal lower mounting surfaces and upwardly opening channels for receiving generally horizontally disposed liners with flat inwardly directed flanges for supporting articles and movable stanchions connected to cross bars.

More recently, luggage racks have been designed wherein the side rails are supported on the exterior surface of the vehicle. But the rails are higher than they are wide and are provided with a decorative trim strip on the outboard side of the rail to present a streamlined aerodynamic and aesthetically pleasing appearance. Such a luggage rack is disclosed in the copending Mandarino et al. U.S. patent application Serial No. 250,705 and the corresponding PCT application WO 90/03288 which discloses an article carrier corresponding to the preamble of claim 1 and comprising article securing members in the form of crossbar stanchions or tie down elements that are longitudinally movable along the side rails and selectively locked in place at predetermined intermittent locations by a push-button lock pin mechanism that engages spaced apart apertures formed along the length of the rails. As disclosed in said application, the push button is formed with a sloping cam surface that engages a complementally angled cam follower that lifts a spring biased locking pin out of engagement with one of the apertures in the side rail. While this arrangement is generally satisfactory, the friction caused by the angled cam faces as well as foreign material such as dirt, ice and water on the cam surfaces sometimes causes the button to bind making it difficult to depress in order to lift the lock pin or to properly release the button under the bias of the spring to reinsert the lock pin in another aperture in the side rail.

Accordingly, it is the primary aim of the present invention to provide an improved lock pin lifting mechanism for push button actuated article securing device that is easy to operate, reliable in use and substantially free from adverse effects of dirt, other foreign material and inclement weather conditions.

It is a more detailed object to provide such a lock pin lifting mechanism that is mechanically simple and yet positive in operation. Another and related object is to provide a mechanism which is relatively inexpensive to manufacture and assemble but is essentially trouble-free and long lasting in use.

In order to achieve these aims the article carrier according to the invention is characterized in that a lever link operatively connects said latching member and said actuating member for disengag-

ing said latching member from said apertures incident to said actuating member being depressed.

These and other features and advantages of the invention will be more readily apparent upon reading the following description of a preferred exemplified embodiment of the invention and upon reference to the accompanying drawings wherein :

FIGURE 1 is a perspective view of an article carrier showing the article securing members of the present invention installed on the upper exterior body surface of an automobile vehicle or the like;

FIG. 1A is a partial perspective view of a section of an exemplary rail showing several of the intermittent apertures therein;

FIG. 2 is a plan view of the article securing member of the present invention as mounted on a side rail of the article carrier of FIG. 1;

FIG. 3 is a side elevational view of the article securing member of FIG. 2;

FIG. 4 is a cross sectional view of the article securing member of FIG. 2 substantially as seen along line 4-4 and showing the article securing member mounted on a side rail with the retractable locking pin in a locked position;

FIG. 4A is a cross sectional view of the article securing member of FIG. 4 substantially as seen along line 4A-4A showing the guide grooves for the pushbutton;

FIG. 5 is a section similar to FIG. 4 substantially as seen along line 5-5 of FIG. 2 with the retractable pin in an unlocked position;

FIG. 5A is a fragmentary bottom view of the article securing member of FIG. 5 showing the drainage slot of the present invention;

FIG. 6 is a front elevational view of the push button of the present invention;

FIG. 7 is a top view, i.e., a view looking down, of the push button shown in FIG. 6;

FIG. 8 is a side elevational view of the pushbutton shown in FIGS. 6 and 7;

FIG. 9 is a plan view of the actuating lever of the present invention;

FIG. 10 is a side elevational view of the actuating lever shown in FIG. 9; and

FIG. 11 is a view of the locking pin of the present invention.

While the invention will be described and disclosed in connection with certain preferred embodiments and procedures, it is not intended to limit the invention to those specific embodiments. Rather it is intended to cover all such alternative embodiments and modifications as fall within the spirit and scope of the appended claims.

Turning now to the drawings, there is shown in FIG. 1 an article carrier or luggage rack 20 of the present invention mounted on the exterior body surface 21 of an automobile vehicle or the like. In

the embodiment illustrated in FIG. 1, the carrier 20 is shown mounted on the roof portion of the vehicle, but it should be understood that the carrier 20 of the present invention can also be mounted on other suitable exterior vehicle surfaces such as a trunk lid, for example.

The article carrier 20 includes a pair of elongated side rails 22 which are adapted to be mounted on the vehicle body surface 21 in spaced-apart parallel relation with respect to the longitudinal center line of the surface 21. As shown in FIG. 1, a plurality of elongated skid strips 23 are adapted to be mounted in spaced-apart parallel relation intermediate the side rails 22. It will be understood that the skid strips 23 are adapted to provide not only direct support for articles or luggage placed within the carrier 20, but also to protect the exterior vehicle surface 21 from being marred or scratched by such articles, luggage and the like.

Mounted on each of the side rails 22 are at least one and preferably a plurality of article securing members 24 and 25. In the preferred embodiment, the article securing members 24 are in the form of stanchions mounted on each of the side rails 22, supporting raised cross bars 26 extending bridgely between them. As will be described in more detail hereinafter, the article securing members 25 are in the form of tie down members mounted on each of the side rails 22.

As more particularly shown in FIGS. 1A and 3-5, each of the side rails 22 is formed with an upper supporting surface 30, a lower mounting surface 31 and inboard and outboard sides 35 and 36 with respect to the center line of the vehicle surface 21. It will be understood that each elongated side rail 22 also has a substantially longitudinally extending z axis which is intersected at right angles thereto by a substantially horizontally extending x axis and a substantially vertically extending y axis.

In accordance with the preferred embodiment and as shown in the Figures and described herein, each of the side rails 22, similar to those disclosed in the above-mentioned copending application Serial No. 250,705, is formed with a transverse cross-section having a height greater than its width and the upper surface 30 is formed with a substantial portion thereof sloping downwardly and outwardly with respect to the center line of the vehicle surface 21 and the longitudinal axis z of the side rail 22. Thus, as seen in FIGS. 1A and 3, each side rail 22 is formed with an asymmetrical transverse cross-sectional shape and it will be understood that the inboard sides 35 of the respective side rails are adapted to be mounted on the vehicle surface 21 in facing relationship with respect to the center line. It will be appreciated that by making the side rails 22 higher than they are wide, they have greater resistance to vertical bending and, therefore, great-

er load carrying capacity as compared to the relatively wide and flat slat-like side elements of the prior art such as disclosed in the aforementioned Bott U.S. patent 4,516,710 and other similar prior art slat-like structures.

To secure the side rails 22 and an elongated combination trim molding 40 and gasket portion 42 (as shown in Figs. 3-5) to the vehicle surface 21 (see Fig. 1), various fastening means and/or adhesive systems may be employed. Thus, for example, various contact adhesives may be directly applied to the mating surfaces of these parts for securing them together. Alternatively, in the preferred embodiment, fastening means (not shown) in the form of Torx-head screws inserted through appropriate openings 43 in the lower mounting surface 31 of the side rail 22, and the gasket portion 42 of the trim strip 40, respectively, may be threaded into Wel-Nuts or Riv-Nuts which pass through and are captured in openings in the surface of the vehicle as has become common in the automotive industry and is known to those skilled in this art.

Also in keeping with the disclosure of copending application Serial No. 250,705 and as shown herein, the side rails 22 and article securing members 24, 25 are formed with complementally shaped engaging means for resisting rotation of the article securing members with respect to the x , y and z axes of the side rails 22 while permitting longitudinal movement thereon. In the preferred exemplary embodiment, and as illustrated in the drawings, the side rails 22 are each formed with a longitudinally extending open jaw portion 52 including a downwardly depending tongue 53 and an upwardly extending groove 54 on the inboard side 35 thereof. Similarly, the article securing members 24, 25 are preferably formed with open jaw portions 55 including upwardly extending tongue portions 56 and downwardly extending grooves 57 which interfit with the complementally-shaped jaws 52 of the side rails 22.

To lock the article securing members 24, 25 at selected positions along the side rails 22, manually operated locking means 60 are provided. In the preferred embodiment, each article securing member 24, 25 carries a retractable locking pin 62 which is biased by a spring 63 into locking position wherein the tip 65 of the pin 62 projects into one of a series of oblong apertures 67 formed in and spaced along the length of the inboard side 35 of side rail 22. For retracting the pins 62 from the apertures 67, a manual actuating mechanism in the form of a push button 70 is mounted in an opening 72 in the outboard surface 73 of each of the article securing members 24, 25.

Pursuant to the present invention, a toggle-like lever link 74 operatively connects the lock pin 62 and the push button 70 for disengaging the tip of

the lock pin from the apertures 67 in the side rails 22 incident to the push button being depressed relative to the outer surface 73 of the article securing members 24, 25. In the illustrated embodiment, the push button 70 is formed with a back 76 and a foot 77 interconnected by two downwardly and inwardly inclined surfaces 78, which form side walls to constrain the longitudinal movement of the actuating lever 74 placed therebetween. As the button 70 is pushed in from the position shown in FIG. 4, for example, the push button foot 77 slides on the floor or lower deck 80 of the buttonslide opening 72 and pivots the actuating lever 74 to raise the lock pin 62 against the bias of the spring 63 to the position shown in FIG. 5. It will be understood, of course, that when the button is released, the spring 63 urges the pin 62 toward its locked position with its tip 65 inserted into one of the oblong apertures 67, provided the pin 62 and aperture 67 are in alignment. The spring 63 also biases the actuating lever 74 downwardly which urges the push button 70 back to its normal position with its generally flat outer face substantially flush with the outboard surface of the article securing member 24, 25.

Preferably, the article securing members 24, 25 are gently curved and inclined upwardly and inwardly with respect to the z axis of the side rails and have substantially smooth outer surfaces, at least in the longitudinal central portion thereof where the outer ends of the push buttons 70 are located. Thus, not only are the outer surfaces of the article securing members substantially smooth and flush to the effects of wind, snow and rain, but the internal parts of the locking means including the actuating levers 74 and locking pins 62 are essentially shielded and protected from the elements. This substantially prevents icing and freezing up of the locking means and also substantially prevents the entry of dust and dirt therein which may cause the pins 62 and push buttons 70 to stick. Preferably, the push buttons 70 are made of substantially non-sticking plastic materials such as Nylon, for example. In the illustrated embodiment the outer face of the push button 70 is provided with a shallow concave recess 79 for engagement by an operator's finger or thumb.

Additionally, in the preferred embodiment, a drainage slot 85 is provided in the underside 81 of the article securing member 24 to facilitate the draining of liquid from within button slide opening 72. This drainage slot substantially prevents the retaining of liquid within the button slide opening adjacent the locking pin 62 and actuating lever 74 which could possibly freeze up to prohibit the working of the locking means.

To guide the sliding movement of the push buttons 70 and also prevent the accidental with-

drawal thereof, the underside of the push button is formed with a pair of integral triangular detents 82 that project into a pair of spaced apart guide grooves 84 formed in the lower deck 80 of the button slide opening 72 formed in the article securing members 24, 25 as seen in FIG. 4A. Similarly, a tab 86 is formed integral with the top portion of the push button 70 and projects into a guide groove 88 formed in the upper surface 89 of the push button opening 72 to prevent the accidental withdrawal of the pushbutton therefrom. To assemble the locking means 60, the following sequence is preferred. The spring 63 is mounted on the upper end of the lock pin 62 and the lower end of the pin is inserted into the lower pin receiving hole 110 in the stanchion. The spring is compressed and inserted into the upper socket 111. Thus the pin is lifted to expose the reduced diameter portion 99 and the key-hole end 95 of the lever link 74 is slipped over it and up to abut the annular shoulder 96. The radiused end 94 of the lever is lifted so the foot 77 of the button can be slid beneath it. The button 70 is then further inserted into the recess 72 with the lower lugs 82 first entering the lower slots 84 in the recess floor. The upper end of the button 70 is finally pushed in so that the upper tab 86 snaps into the upper groove 88 in the stanchion. The entire locking means is thus held captive in the slide opening 72.

The pushbutton 70 is shown in more detail in Figures 6-8. These figures show the relation of the inclined side walls 78 and the two triangular detents 82 which depend therefrom and are formed integrally therewith. The button foot 77 and side walls 78 define a channel 90 which is closed on the outboard side by the inward face 91 of the pushbutton back 76. A generally U-shaped opening 92 is formed in the inboard end of the foot 77, the jaws 93 of which surround but do not engage the locking pin 62 when the pushbutton 70 is depressed so that the locking pin can move freely in the opening 92.

The actuating lever 74 is shown in greater detail in Figures 9 and 10. As shown in these figures, the foot or pivot end 94 of the lever is bent back on itself to form a smoothly radiused edge. The lever 74 preferably has the shape of a lazy J, as shown in Figure 10, and a key-hole slot 95 is formed therein opposite the foot end 94. The slot 95 is sized to accept the locking pin 62 and to engage a shoulder 96 carried thereon.

The lever abutting shoulder 96 on the locking pin 62 is shown in more detail in Figures 4 and 11. As shown in Figure 4, the spring 63 exerts a biasing force on the upper surface of the shoulder, while the lower surface engages the actuating lever 74. Thus, by depressing pushbutton 70, the actuating lever lifts pin 62 by shoulder 96 against the

biasing face of the spring 63. As shown in Figure 11, the pin is comprised of sections having different radii which impedes the capillary action of liquid therealong. An intermediate portion 99 of the pin 62 is formed with a reduced diameter for insertion into the keyhole slot 95 which captures the pin 62 below the annular shoulder 96. In the preferred embodiment, the tip 65 of the pin 62 is covered with a plastic material which may be secured in place by injection molding a plastic end piece 97 directly on and around a raised button 98.

Referring to FIGS. 2-5, it will be seen that the upper end of each stanchion 24 is formed with a collar portion 100 having an opening therein for receiving an end of the cross bar 26, which is generally oval in cross-section. The cross bar 26 typically includes a relatively thin-walled metal beam portion which may be of either extruded or roll-formed construction and is formed with an upper groove for receiving a resilient insert member which extends along the length of the cross bar 26. A suitable fastener, such as a self-tapping screw is used to secure the cross bar 26 to the collar portion 100 of the stanchion 24.

In the preferred embodiment, each of the stanchions 24 also includes a pair of downwardly directed legs 102 spaced apart longitudinally with respect to the centrally located push button 70. Thus, as shown in FIG. 2, a pair of article securing openings 103 are formed in the stanchions 23 between the push button 70 and the legs 102. These openings 103 are useful for receiving hooks, ropes or elastic tie down straps for securing articles to the carrier 20.

Referring to FIG. 1, the article securing members 25 are preferably in the form of tie-down elements mounted for longitudinal movement on the side rails 22. Each of the tie-down elements 25 includes an aperture 104 at its upper inner end which is similarly useful for receiving a hook, rope end or an elastic strap for securing articles or luggage in the carrier 20. The retractable pin locking mechanism of the tie down element 25 is generally the same as for the stanchion members 24 although the push buttons may be slightly smaller in size.

The side rails 22 may be made of extruded aluminum or of roll-formed sheet metal, if desired, and the oblong apertures 67 are oriented so that their major axis is in a vertical plane or parallel to the y axis shown in Fig. 1A. Also as shown in Figure 1A, two complementary round holes 105, 106 one on the inboard side 35 and one on the upper supporting surface 30 of side rail 22, can be provided as further tie down means. These holes 105, 106 can be sized to accept a rope or the J-end of a bungee cord. End caps 107 similar to those shown in the previously mentioned copen-

ding application Serial No. 250,705 may be provided to close the end of the rails and provide a smooth streamlined appearance thereto.

Claims

1. An article carrier adapted to be mounted on an exterior body surface of an automotive vehicle, including at least one article securing member (24) mounted for longitudinal movement on an elongated rail (22), said rail composing a plurality of longitudinally spaced apertures (67), said article securing member (24) including a latching member (62) cooperable with said apertures (67) in said rail (22) for locking and longitudinally adjusting said article securing member (24) at predetermined positions along said rail, a spring means (63) biasing one end of the latching member (62) into engagement with the aperture (67), the securing member (24) carrying an operating mechanism comprising an actuating member (70) movable from a undepressed latching position to a depressed unlatching position, characterized in that a lever link (74) operatively connects said latching member (62) and said actuating member (70) for disengaging said latching member (62) from said apertures (67) incident to said actuating member (70) being depressed.
2. An article carrier as defined in claim 1, characterized in that said article securing member (24) is a stanchion adapted to be slidably mounted on said rail (22) and to support one end of a crossbar (26) for said article carrier.
3. An article carrier as defined in claim 1, characterized in that said article securing member (24) is a tie down element adapted to be slidably mounted on said rail (22) and includes at least one opening (104) adapted to receive a tie down strap.
4. An article carrier as defined in claim 1, characterized in that said article securing member (24) is formed with an internal socket (111) for receiving one end of said spring means (63) and said latching member (62) is formed with a shoulder (96) intermediate its ends for abutting the other end of said spring means (63).
5. An article carrier as defined in claim 1, characterized in that said latching member (62) is in the form of an elongated, generally cylindrical lock pin having at least one annular shoulder (96) formed intermediate the ends thereof and said lever link (74) is operatively connected to said pin so as to abut said annular shoulder (96).
6. An article carrier as defined in claim 5, characterized in that said spring means (63) engages said annular shoulder (96) on the opposite side thereof from said lever abutting connection.
7. An article carrier as defined in claim 1, characterized in that said article securing member (24) includes an outwardly opening recess (72) therein and said actuating member (70) is in the form of a push button slidably disposed in said recess (72).
8. An article carrier as defined in claim 9, characterized in that said push button (70) is formed with an internal pocket for receiving and supporting one end (94) of said lever link (74) for pivotal movement incident to said push button (70) being depressed.
9. An article carrier and defined in claim 7, characterized in that said button (70) is formed with at least one lug (82) projecting outwardly generally perpendicularly to the axis of the button (70) and recess (72) so as to guide the sliding movement of the button (70) in the recess (72).
10. An article carrier as defined in claim 9, characterized in that said button (70) is formed with a pair of lugs (82) projecting outwardly generally perpendicularly from the lower slide surface thereof and said recess (72) is formed with a pair of closed end slots (84) for receiving said pair of lugs (82) to limit the outward extent of sliding movement of said button (70) relative to said recess (72).
11. An article carrier as defined in claim 10, characterized in that said closed end slots (84) define at least partially open bottoms so as to provide drain passageways out of said recess (72) below said push button slide surface (80).
12. An article carrier as defined in claim 8, characterized in that said lever link (74) is formed with a smoothly radiused end (94) cooperating with and supported by said internal pocket of said push button (70).
13. An article carrier as defined in claim 12, characterized in that said lever link (74) has one end (94) doubled back on itself to form the smoothly radiused end cooperating with and supported by said internal pocket of said push button (70).



ding application Serial No. 250,705 may be provided to close the end of the rails and provide a smooth streamlined appearance thereto.

Claims

1. An article carrier adapted to be mounted on an exterior body surface of an automotive vehicle, including at least one article securing member (24) mounted for longitudinal movement on an elongated rail (22), said rail composing a plurality of longitudinally spaced apertures (67), said article securing member (24) including a latching member (62) cooperable with said apertures (67) in said rail (22) for locking and longitudinally adjusting said article securing member (24) at predetermined positions along said rail, a spring means (63) biasing one end of the latching member (62) into engagement with the aperture (67), the securing member (24) carrying an operating mechanism comprising an actuating member (70) movable from a undepressed latching position to a depressed unlatching position, characterized in that a lever link (74) operatively connects said latching member (62) and said actuating member (70) for disengaging said latching member (62) from said apertures (67) incident to said actuating member (70) being depressed.
2. An article carrier as defined in claim 1, characterized in that said article securing member (24) is a stanchion adapted to be slidably mounted on said rail (22) and to support one end of a crossbar (26) for said article carrier.
3. An article carrier as defined in claim 1, characterized in that said article securing member (24) is a tie down element adapted to be slidably mounted on said rail (22) and includes at least one opening (104) adapted to receive a tie down strap.
4. An article carrier as defined in claim 1, characterized in that said article securing member (24) is formed with an internal socket (111) for receiving one end of said spring means (63) and said latching member (62) is formed with a shoulder (96) intermediate its ends for abutting the other end of said spring means (63).
5. An article carrier as defined in claim 1, characterized in that said latching member (62) is in the form of an elongated, generally cylindrical lock pin having at least one annular shoulder (96) formed intermediate the ends thereof and said lever link (74) is operatively connected to said pin so as to abut said annular shoulder (96).
6. An article carrier as defined in claim 5, characterized in that said spring means (63) engages said annular shoulder (96) on the opposite side thereof from said lever abutting connection.
7. An article carrier as defined in claim 1, characterized in that said article securing member (24) includes an outwardly opening recess (72) therein and said actuating member (70) is in the form of a push button slidably disposed in said recess (72).
8. An article carrier as defined in claim 9, characterized in that said push button (70) is formed with an internal pocket for receiving and supporting one end (94) of said lever link (74) for pivotal movement incident to said push button (70) being depressed.
9. An article carrier and defined in claim 7, characterized in that said button (70) is formed with at least one lug (82) projecting outwardly generally perpendicularly to the axis of the button (70) and recess (72) so as to guide the sliding movement of the button (70) in the recess (72).
10. An article carrier as defined in claim 9, characterized in that said button (70) is formed with a pair of lugs (82) projecting outwardly generally perpendicularly from the lower slide surface thereof and said recess (72) is formed with a pair of closed end slots (84) for receiving said pair of lugs (82) to limit the outward extent of sliding movement of said button (70) relative to said recess (72).
11. An article carrier as defined in claim 10, characterized in that said closed end slots (84) define at least partially open bottoms so as to provide drain passageways out of said recess (72) below said push button slide surface (80).
12. An article carrier as defined in claim 8, characterized in that said lever link (74) is formed with a smoothly radiused end (94) cooperating with and supported by said internal pocket of said push button (70).
13. An article carrier as defined in claim 12, characterized in that said lever link (74) has one end (94) doubled back on itself to form the smoothly radiused end cooperating with and supported by said internal pocket of said push button (70).



14. An article carrier as defined in claim 13, characterized in that the other end of said lever link (74) is formed with a generally keyhole shaped opening (95) including a circular hole and a narrow entry slot, said lock pin being formed with a portion of reduced diameter (99) intermediate said annular shoulder (96) and said locking tip (85), said entry slot being dimensioned to receive said reduced diameter and said circular hole being dimensioned to receive said pin section adjacent said annular shoulder (96).

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15. An article carrier as defined in claim 1, characterized in that said latching member (62) is formed with a rounded non-metallic tip (97).

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16. An article carrier as defined in claim 15, characterized in that said non-metallic tip (97) is made of plastic material injection molded directly on the end of said latching member (62).

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17. An article carrier as defined in claim 1, characterized in that it comprises a pair of elongated rails (22) adapted to be mounted on said exterior body surface in spaced apart, parallel relation, a pair of article securing members (24) adapted to be mounted for longitudinal movement on each of said rails and to support a cross bar (26) therebetween.

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Patentansprüche

1. Gegenstandsträger, dazu eingerichtet, auf einer Aussenfläche einer Kraftfahrzeugkarosserie angebracht zu werden, mit zumindest einem die Gegenstände sichernden Bauteil (24), das längs versetzbar an einer gestreckten Schiene (22) angebracht ist, wobei die benannte Schiene eine Vielzahl längs beabstandeter Öffnungen (67) umfasst und das benannte, die Gegenstände sichernde Bauteil (24) ein Verriegelungsorgan (62) einschliesst, das mit den benannten Öffnungen (67) in der benannten Schiene (22) zusammenwirken kann, um das benannte, die Gegenstände sichernde Bauteil (24) in vorbestimmten Stellungen entlang der benannten Schiene zu arretieren und längs zu verstellen, ferner ein Federorgan (63), das ein Ende des Verriegelungsorgans (62) zum Einrasten in die Öffnung (67) vorspannt, wobei das sichernde Bauteil (24) einen Bedienungsmechanismus auf sich trägt, der ein Betätigungsglied (70) einschliesst, das von einer nicht gedrückten Verriegelungsstellung in eine gedrückte Entriegelungsstellung bewegt werden kann, dadurch gekennzeichnet, dass eine Hebelverbindung (74) das benannte Verriegelungsorgan (62) und das benannte Betätigungsglied (70) bedienbar verbindet, um das benannte Verriegelungsorgan (62) aus den benannten Öffnungen (67) auszuklinken, wenn das benannte Betätigungsglied (70) niedergedrückt wird.

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2. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte, die Gegenstände sichernde Bauteil (24) eine Strebe ist, die dazu eingerichtet ist, gleitend auf der benannten Schiene (22) angebracht zu werden und ein Ende einer Querschiene (26) für den benannten Gegenstandsträger abzustützen.

3. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte, die Gegenstände sichernde Bauteil (24) ein Niederhalteglied ist, das dazu eingerichtet ist, gleitend auf der benannten Schiene (22) angebracht zu werden, und zumindest eine Öffnung (104) hat, die dazu eingerichtet ist, einen Binddegurt aufzunehmen.

4. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte, die Gegenstände sichernde Bauteil (24) mit einer inneren Fassung (111) ausgestaltet ist, um ein Ende des benannten Federorgans (63) aufzunehmen, und dass das benannte Verriegelungsorgan (62) mit einer Schulter (96) zwischen seinen Enden ausgestaltet ist, um das andere Ende des benannten Federorgans (63) abzustützen.

5. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte Verriegelungsorgan (62) die Gestalt eines gestreckten, allgemein zylinderförmigen Verschlussbolzens mit zumindest einer ringförmigen Schulter (96) zwischen seinen Enden hat und dass die benannte Hebelverbindung (74) bedienbar mit dem benannten Bolzen verbunden ist, so dass sie an der benannten ringförmigen Schulter (96) anstösst.

6. Gegenstandsträger gemäss Anspruch 5, dadurch gekennzeichnet, dass das benannte Federorgan (63) von der der benannten Hebelanschlagverbindung entgegengesetzten Seite her mit der benannten ringförmigen Schulter (96) einrastet.

7. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte, die Gegenstände sichernde Bauteil (24) eine sich nach aussen öffnende Aussparung (72) enthält

7. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte, die Gegenstände sichernde Bauteil (24) eine sich nach aussen öffnende Aussparung (72) enthält



und dass das benannte Betätigungsglied (70) die Gestalt eines Druckknopfes hat, der gleitend in der benannten Aussparung (72) angeordnet ist.

8. Gegenstandsträger gemäss Anspruch 7, dadurch gekennzeichnet, dass der benannte Druckknopf (70) mit einer Innentasche ausgestaltet ist, um ein Ende (94) der benannten Hebelverbindung (74) aufzunehmen und bei seiner Schwenkbewegung zu stützen, wenn der benannte Druckknopf (70) niedergedrückt wird.

9. Gegenstandsträger gemäss Anspruch 7, dadurch gekennzeichnet, dass der benannte Knopf (70) mit zumindest einer Nase (82) ausgestaltet ist, die allgemein rechtwinklig zur Achse des Knopfes (70) und der Aussparung (72) nach aussen ragt, um die gleitende Bewegung des Knopfes (70) in der Aussparung (72) zu führen.

10. Gegenstandsträger gemäss Anspruch 9, dadurch gekennzeichnet, dass der benannte Knopf (70) mit einem Paar von Nasen (82) ausgestaltet ist, die allgemein rechtwinklig von seiner unteren Gleitfläche nach aussen ragen, und dass die benannte Aussparung (72) mit einem Paar von am Ende geschlossenen Schlitzen (84) ausgestaltet ist, die das benannte Paar von Nasen (82) aufnehmen, um die Reichweite der Gleitbewegung des benannten Knopfes (70) bezüglich der benannten Aussparung (72) nach aussen hin zu begrenzen.

11. Gegenstandsträger gemäss Anspruch 10, dadurch gekennzeichnet, dass die benannten Schlitze (84) mit geschlossenem Ende zumindest teilweise offene Böden bilden, um unter der benannten Druckknopf-Gleitfläche (80) Abflusswege aus der benannten Aussparung (72) zu schaffen.

12. Gegenstandsträger gemäss Anspruch 8, dadurch gekennzeichnet, dass die benannte Hebelverbindung (74) mit einem glatt abgerundeten Ende (94) ausgestaltet ist, das mit der benannten Innentasche des benannten Druckknopfes (70) zusammenwirkt und durch sie gestützt wird.

13. Gegenstandsträger gemäss Anspruch 12, dadurch gekennzeichnet, dass die benannte Hebelverbindung (74) ein auf sich selbst zurückgebogenes Ende (94) hat, das ein glatt abgerundetes Ende bildet, das mit der benannten Innentasche des benannten Druckknopfes (70)

zusammenwirkt und durch sie gestützt wird.

14. Gegenstandsträger gemäss Anspruch 13, dadurch gekennzeichnet, dass das andere Ende der benannten Hebelverbindung (74) mit einer allgemein schlüssellochförmigen Öffnung (95) ausgestaltet ist, die ein kreisrundes Loch und einen engen Einlassspalt einbegreift, wobei der benannte Verschlussbolzen mit einem Teilstück von verringertem Durchmesser (99) zwischen der benannten ringförmigen Schulter (96) und dem benannten Verschlusskopf (65) ausgestaltet ist und der benannte Einlassspalt so bemessen ist, dass er den benannten verminderten Durchmesser aufnimmt, und das benannte kreisrunde Loch so bemessen ist, dass es die der benannten ringförmigen Schulter (96) benachbarte Kopfparte aufnimmt.

15. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass das benannte Verriegelungsorgan (62) mit einem abgerundeten nichtmetallischen Kopf (97) ausgestaltet ist.

16. Gegenstandsträger gemäss Anspruch 15, dadurch gekennzeichnet, dass der benannte nichtmetallische Kopf (97) aus direkt an das Ende des benannten Verriegelungsorgans (62) spritzgegossenem Kunststoff gefertigt ist.

17. Gegenstandsträger gemäss Anspruch 1, dadurch gekennzeichnet, dass er ein Paar gestreckter Schienen (22) umfasst, die dazu eingerichtet sind, zueinander parallel und beabstandet an der benannten Karosserieaussenfläche angebracht zu werden, ferner ein Paar die Gegenstände sichernder Bauteile (24), die dazu eingerichtet sind, längsverschiebbar an jeder der benannten Schienen angebracht zu werden und dazwischen einen Querträger (26) abzustützen.

Revendications

1. Système pour porter des articles agencé pour être monté sur une surface externe de la carrosserie d'un véhicule automobile, comprenant au moins un dispositif (24) de fixation d'articles monté pour pouvoir effectuer un mouvement longitudinal sur un rail allongé (22), ledit rail comprenant une pluralité d'ouvertures (67) espacées longitudinalement, ledit dispositif (24) de fixation d'articles comprenant un élément de verrouillage (62) pouvant coopérer avec lesdites ouvertures (67) dans ledit rail (22) pour verrouiller et ajuster longitudinalement ledit dispositif (24) de fixation d'articles à des positions prédéterminées le long dudit rail, un



- moyen de ressort (63) poussant une extrémité de l'élément de verrouillage (62) à s'engager avec l'ouverture (67), le dispositif (24) de fixation portant un mécanisme de manoeuvre comprenant un élément d'actionnement (70) qui peut se déplacer entre une position non enfoncée de verrouillage vers une position enfoncée de déverrouillage, caractérisé en ce qu'un levier de connexion (74) connecte d'une manière opérationnelle ledit élément de verrouillage (62) et ledit élément d'actionnement (70) pour désengager ledit élément de verrouillage (62) de ladite ouverture (67) lorsque ledit élément d'actionnement (70) est enfoncé.
2. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce que ledit dispositif (24) de fixation d'articles est une patte montée d'une manière coulissante sur ledit rail (22) pour supporter une extrémité d'une barre transversale (26) du système pour supporter des articles.
 3. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce que ledit dispositif (24) de fixation d'articles est une attache agencée pour être montée d'une manière coulissante sur ledit rail (22) et qu'il comporte au moins une ouverture (104) agencée pour recevoir une courroie de fixation.
 4. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce que ledit dispositif (24) de fixation d'articles est formé avec une douille interne (111) pour recevoir une extrémité dudit moyen de ressort (63) et que ledit élément de verrouillage (62) est formé avec un épaulement (96) entre ses extrémités, venant en appui contre l'autre extrémité dudit moyen de ressort (63).
 5. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce que ledit élément de verrouillage (62) se présente sous la forme d'une goupille allongée et généralement cylindrique ayant au moins un épaulement annulaire (96) formé entre ses extrémités et en ce que ledit levier de connexion (74) est connecté d'une manière opérationnelle à ladite goupille pour venir en appui contre ledit épaulement annulaire (96).
 6. Système pour porter des articles comme défini dans la revendication 5, caractérisé en ce que ledit moyen de ressort (63) s'engage avec ledit épaulement annulaire (96) sur le côté opposé à celui contre lequel vient en appui ledit levier de connexion.
 7. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce que ledit dispositif (24) pour fixer des articles comporte un creux s'ouvrant vers l'extérieur (72) et que ledit élément d'actionnement (70) se présente sous la forme d'un bouton-poussoir disposé d'une manière coulissante dans ledit creux (72).
 8. Système pour porter des articles comme défini dans la revendication 9, caractérisé en ce que ledit bouton-poussoir (70) est formé avec une poche interne pour recevoir et supporter une extrémité (94) dudit levier de connexion (74) pour pouvoir effectuer un mouvement de pivotement lorsque ledit bouton-poussoir est enfoncé.
 9. Système pour porter des articles comme défini dans la revendication 7, caractérisé en ce que ledit bouton (70) est formé avec au moins un ergot (82) faisant saillie vers l'extérieur, dans une direction générale perpendiculaire à l'axe du bouton (70) et du creux (72), de manière à guider le mouvement coulissant du bouton (70) dans le creux (72).
 10. Système pour porter des articles comme défini dans la revendication 9, caractérisé en ce que ledit bouton (70) est formé avec une paire d'ergots (82) faisant saillie vers l'extérieur, dans une direction générale perpendiculaire à sa surface de glissement inférieure et en ce que ledit creux (72) est formé avec une paire de fentes aux extrémités fermées (84) pour recevoir ladite paire d'ergots (82), afin de limiter le mouvement coulissant vers l'extérieur dudit bouton (70) par rapport audit creux (72).
 11. Système pour porter des articles comme défini dans la revendication 10, caractérisé en ce que lesdites fentes à extrémités fermées (84) constituent des fonds au moins partiellement ouverts pour fournir des passages de drainage hors desdits creux (72), en dessous de la surface de glissement (80) dudit bouton-poussoir.
 12. Système pour porter des articles comme défini dans la revendication 8, caractérisé en ce que ledit levier de connexion (74) est formé avec une extrémité avec un arrondi doux (94) coopérant avec ladite poche interne dudit bouton-poussoir (70) en étant supporté par elle.
 13. Système pour porter des articles comme défini dans la revendication 12, caractérisé en ce que ledit levier de connexion (74) a une extrémité



(94) retournée sur elle même pour former une extrémité avec un arrondi doux, coopérant avec ladite poche interne dudit bouton-poussoir (70) en étant supporté par celle-ci.

14. Système pour porter des articles comme défini dans la revendication 13, caractérisé en ce que l'autre extrémité dudit levier de connexion (74) est formée avec une ouverture ayant la forme générale d'un trou de serrure (95) ayant un trou circulaire et une fente d'entrée étroite, ladite goupille de verrouillage étant formée avec une portion de diamètre diminué (99) entre ledit épaulement annulaire (96) et ladite extrémité de verrouillage (65), ladite fente d'entrée étant dimensionnée pour recevoir ledit diamètre diminué et ledit trou circulaire étant dimensionné pour recevoir ladite section de goupille près dudit épaulement annulaire (96).

15. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce que ledit élément de verrouillage (62) est formé avec une extrémité arrondie (97) non métallique.

16. Système pour porter des articles comme défini dans la revendication 15, caractérisé en ce que ladite extrémité non métallique (97) est formée en un matériau plastique par injection-moulage, directement sur l'extrémité dudit élément de verrouillage (62).

17. Système pour porter des articles comme défini dans la revendication 1, caractérisé en ce qu'il comprend deux rails allongés (22) agencés pour venir se monter sur la dite surface externe de la carrosserie en étant espacés et parallèles, une paire de dispositifs (24) de fixation d'articles étant montée pour pouvoir effectuer un mouvement longitudinal sur chacun desdits rails et soutenir une barre transversale (26) entre eux.