



(51) International Patent Classification:
B60P 7/08 (2006.01)

(21) International Application Number:
PCT/US2019/060178

(22) International Filing Date:
07 November 2019 (07.11.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
P201831195 11 December 2018 (11.12.2018) ES

(71) Applicant: **ILLINOIS TOOL WORKS INC.** [US/US];
155 Harlem Avenue, Glenview, IL 60025 (US).

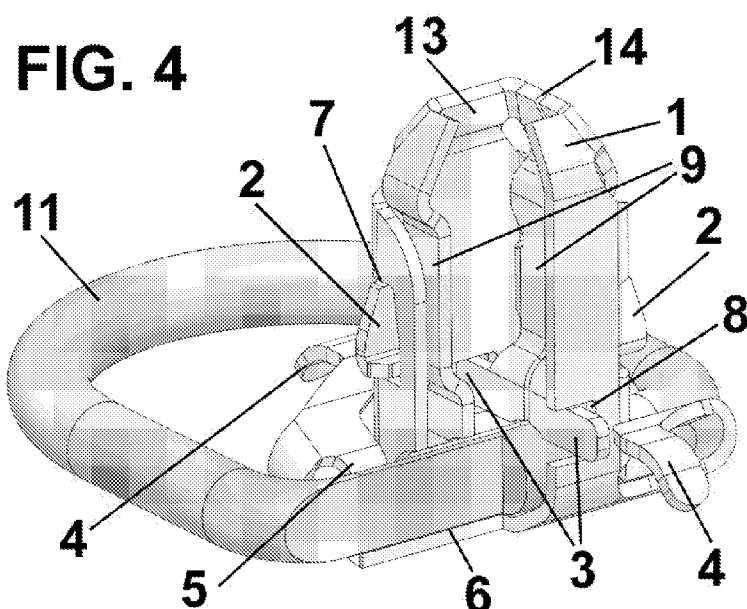
(72) Inventors: **FUENTES DOMINGO, Ismael, Juan**; c/o Illinois Tool Works Inc., 155 Harlem Avenue, Glenview, IL 60025 (US). **IBANEZ FERRER, Jordi**; c/o Illinois Tool Works Inc., 155 Harlem Avenue, Glenview, IL 60025 (US).

(74) Agent: **NIEBERDING, Michael, J.** et al.; Thompson Hine LLP, 10050 Innovation Drive, Suite 400, Dayton, OH 45342-4934 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) Title: SECURING DEVICE FOR VEHICLES



(57) Abstract: A securing device for vehicles includes a body (10) for fixing to a vehicle; and a ring (11), a part of which is housed inside a housing (6) of said body (10), said ring (11) rotating relative to said body (10); wherein said housing (6) is formed by an elastic structure. It makes it possible to provide a smooth, controlled rotation movement of the ring relative to the body, mounting of the device on the vehicle without the need for other elements such as screws or nuts, providing a high degree of resistance to accidental detachment, and it allows the removal of the device in a simple manner using conventional tools.

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

SECURING DEVICE FOR VEHICLES

TECHNICAL FIELD

[0001] The present invention relates to a securing device for vehicles, in particular for vehicle trunks, which makes it possible to secure objects by means of a ring of said securing device.

BACKGROUND

[0002] In some vehicles, for example pickups/station wagons, it is customary to use securing devices to secure objects. These securing devices comprise a body that is fixed in the vehicle trunk and a ring that is articulated relative to said body.

[0003] These conventional securing devices are usually made from metal and present different drawbacks.

[0004] One of these drawbacks is the lack of control of the rotation of the ring relative to the body since the ring and the body are made from metal, such that the ring rotates with difficulty relative to the body.

[0005] Furthermore, the body is usually mounted on the vehicle by means of a screw or similar fixing element, which involves a certain mounting time which has an impact on the cost thereof.

[0006] Therefore, an object of the present invention is to provide a securing device for vehicles in which the position of the ring can be controlled and which can be mounted and removed in as simple and rapid a manner as possible using standard tools, without the use of a screw or similar fixing element.

SUMMARY

[0007] The aforesaid drawbacks are resolved with the securing device of the invention, which affords other advantages described below.

The securing device for vehicles comprises:

a body that is fixed to a vehicle; and
a ring housed inside a housing of said body, said ring rotating relative to said body;
wherein said housing is formed by an elastic structure.

[0008] By virtue of this elastic structure it is possible better to control the rotation and the position of the ring relative to the body. Furthermore, it may be anchored directly to the vehicle, supporting high loads without the need for screws.

[0009] Advantageously, said elastic structure comprises elastic tabs that at least partially surround said ring when the ring is housed in the housing, allowing controlled rotation of the ring inside the body.

[0010] Furthermore, in accordance with a preferred embodiment, said body comprises:

- securing lugs for securing the device to the vehicle;
- support lugs;
- release lugs; and
- a retention portion, which is advantageously elastic.

[0011] In accordance with said preferred embodiment, the elastic tabs, the securing lugs, the support lugs, the release lugs and/or the retention portion are made as a single piece with the body.

[0012] Preferably, said securing lugs project from said body via first orifices, and said release lugs project from said body via second orifices.

[0013] Furthermore, said retention portion advantageously comprises a central orifice at one of the ends of said body.

[0014] In accordance with a preferred embodiment, said first orifices are arranged on two opposite lateral faces of said body, and said second orifices are arranged on two opposite lateral faces of said body that are different from the lateral faces of the first orifices.

[0015] Furthermore, said body preferably comprises interior walls from which the release lugs and/or the securing lugs extend.

[0016] Advantageously, said retention portion is elastic, and said body is made from elastic material that is suitably treated for its envisaged use, for example heat-treated carbon steel.

[0017] The securing device in accordance with the present invention affords at least the following advantages, *inter alia*:

- it makes it possible to provide a smooth, controlled rotation movement of the ring relative to the body;
- it allows the mounting of the device on the vehicle without the need for other elements such as screws or nuts, providing a high degree of resistance to accidental detachment;
- it allows removal of the device in a simple manner using conventional tools;
- it makes it possible to compensate for different thicknesses of panel in different types of vehicle; and
- it allows personalization of its appearance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] Drawings are attached to enhance understanding of that which has been set forth and, schematically and purely by way of non-limiting example, said drawings represent one practical embodiment.

[0019] Figure 1 is a perspective view of the body of the securing device in accordance with the present invention;

[0020] Figure 2 is a perspective view of the body of the securing device in accordance with the present invention, with the ring placed in its use position;

[0021] Figures 3 and 4 are perspective views of the body of the securing device in accordance with the present invention, with the ring placed in its use position and with the body partially cut away;

[0022] Figure 5 is a view in lateral elevation of the securing device in accordance with the present invention, mounted on a panel; and

[0023] Figure 6 is a perspective view of the securing device in accordance with the present invention, comprising a cover for guaranteeing correct placement of the ring.

DETAILED DESCRIPTION

[0024] As shown in Figures 1 and 2, the securing device in accordance with the present invention comprises a body, indicated generally by reference number 10, which is formed from a suitable material, for example suitably treated plastics.

[0025] Said body 10 has a substantially parallelepipedal hollow form, defining four lateral faces, although it could have any suitable form.

[0026] The body 10 comprises different elements, preferably made as a single piece with said body, for performing different functions, as described below.

[0027] The body 10 comprises a housing 6 for housing a ring 11 that rotates relative to said body in order to place same in a suitable position, in particular for the use thereof in a trunk of a vehicle, for example a pickup/station wagon.

[0028] The housing 6 comprises an elastic structure that comprises elastic tabs 5 that are in contact with and partially surround the ring 11 when the ring 11 is placed in the housing 6.

[0029] Thus, a degree of friction arises between the ring 11 and these elastic tabs 5, the characteristics of which are different from the friction that arises between a metal ring and the metallic housing thereof in conventional securing devices. This friction makes it possible to control the movement of the ring 11 and to maintain the selected position during use thereof.

[0030] The body 10 is fixed to the vehicle, for example in the trunk of a pickup/station wagon, without the use of any tool, with the consequent saving in

terms of time and costs. To that end, the body 10 comprises a retention portion 1, which is preferably elastic and which is arranged at the end opposite the housing 6.

[0031] Said retention portion 1 comprises a central orifice 13 housing a fixing element (not shown) secured to the vehicle. This retention portion 1, for pressure-coupling on said fixing element, is divided by slits 14.

[0032] The body 10 is customarily secured to the vehicle using a panel 12, shown in Figure 5. To that end, the body 10 comprises securing lugs 2 and support lugs 4, which in the mounting position are in contact with said panel 12, as may be seen in Figure 5.

[0033] The securing lugs 2 prevent accidental removal of the body 10 upon abutment with the interior part of the panel 12 (part on the right-hand side in Figure 5), while the support lugs 4, which are curved and elastic in nature, adapt to the thickness of the panel 12 such that the same device may be used for different types of vehicle which use panels of different thicknesses. Furthermore, the support lugs 4 keep the body 10 stationary in its position, without vibrations.

[0034] Preferably, the support lugs 4 extend from the ends of the housing 6 for the ring 11.

[0035] In order to release the securing lugs 2, the securing device also comprises release lugs 3 that are integral with the securing lugs and are arranged substantially perpendicularly relative to the securing lugs 2.

[0036] In order to be able to perform their function, the securing lugs 2 project from the body 10 via first orifices 7, while the release lugs 3 project from the body 10 via second orifices 8 such that they can be moved in order to release the body 10 when it is desired to remove the securing device.

[0037] The first orifices 7 are arranged on two opposite lateral faces of the body 10, while the second orifices 8 are arranged on the other two opposite lateral faces.

[0038] As may be better seen in Figures 3 and 4, said securing lugs 2 and said release lugs 3 are placed on interior walls 9 located adjacent to two lateral faces of the body 10. These interior walls 9 extend from the retention portion 1 described above.

[0039] The securing device is very simple to fix since the body 10 is pressure-fixed onto a fixing element of the vehicle and the body 10 is held on the panel 12 by means of the securing lugs 2, adapting to the thickness of the panel 12 by means of the support lugs 4.

[0040] In order to detach the securing device, all that has to be done is to push the release lugs 3 toward one another, which will give rise to the movement of the securing lugs 2, enabling the detachment thereof from the panel and from the fixing element of the vehicle, also under pressure. Said release lugs 3 also make it possible to check the correct mounting of the ring 11 in its housing 6.

[0041] Furthermore, it makes it possible to better control the rotation movement of the ring, as described above.

[0042] Figure 6 shows the fact that the securing device also comprises a cover 15 provided with a spur 16. This spur 16 is used to guarantee that the ring 11 is correctly mounted since, in the correct position of the ring 11, the spur 16 is placed between the release lugs 3, as may be seen in Figure 6.

[0043] Despite the fact that reference has been made to a specific embodiment of the invention, it is obvious to a person skilled in the art that the securing device described may be varied and modified in numerous ways and that all the details mentioned may be replaced by other, technically equivalent details without departing from the scope of protection defined by the attached claims.

CLAIMS

1. A securing device for vehicles, which comprises:
a body (10) for fixing to a vehicle; and
a ring (11), a part of which is housed inside a housing (6) of said body (10),
said ring (11) rotating relative to said body (10),
wherein said housing (6) is formed by an elastic structure.
2. The securing device for vehicles as claimed in claim 1, wherein said elastic structure comprises elastic tabs (5) that at least partially surround said ring (11) when the ring (11) is housed in the housing (6).
3. The securing device for vehicles as claimed in claim 1, wherein said body (10) comprises securing lugs (2) for securing the device to the vehicle.
4. The securing device for vehicles as claimed in claim 1, wherein said body (10) comprises support lugs (4).
5. The securing device for vehicles as claimed in claim 1, wherein said body (10) comprises release lugs (3).
6. The securing device for vehicles as claimed in claim 1, wherein said body (10) comprises a retention portion (1).
7. The securing device for vehicles as claimed in any one of the preceding claims, wherein the elastic tabs (5), the securing lugs (2), the support lugs (4), the release lugs (3) and/or the retention portion (1) are made as a single piece with the body (10).
8. The securing device for vehicles as claimed in claim 3, wherein said securing lugs (2) project from said body (10) via first orifices (7).

9. The securing device for vehicles as claimed in claim 5, wherein said release lugs (3) project from said body (10) via second orifices (8).
10. The securing device for vehicles as claimed in claim 6, wherein said retention portion (1) comprises a central orifice (13) at one of the ends of said body (10).
11. The securing device for vehicles as claimed in claim 8, wherein said first orifices (7) are arranged on two opposite lateral faces of said body (10).
12. The securing device for vehicles as claimed in claim 9, wherein said second orifices (8) are arranged on two opposite lateral faces of said body (10).
13. The securing device for vehicles as claimed in claim 3, wherein said body (10) comprises interior walls (9) from which the release lugs (3) and/or the securing lugs (2) extend.
14. The securing device for vehicles as claimed in claim 6, wherein said retention portion (1) is elastic.
15. The securing device for vehicles as claimed in claim 1 or 7, wherein said body (10) is elastic, such as heat-treated carbon steel.

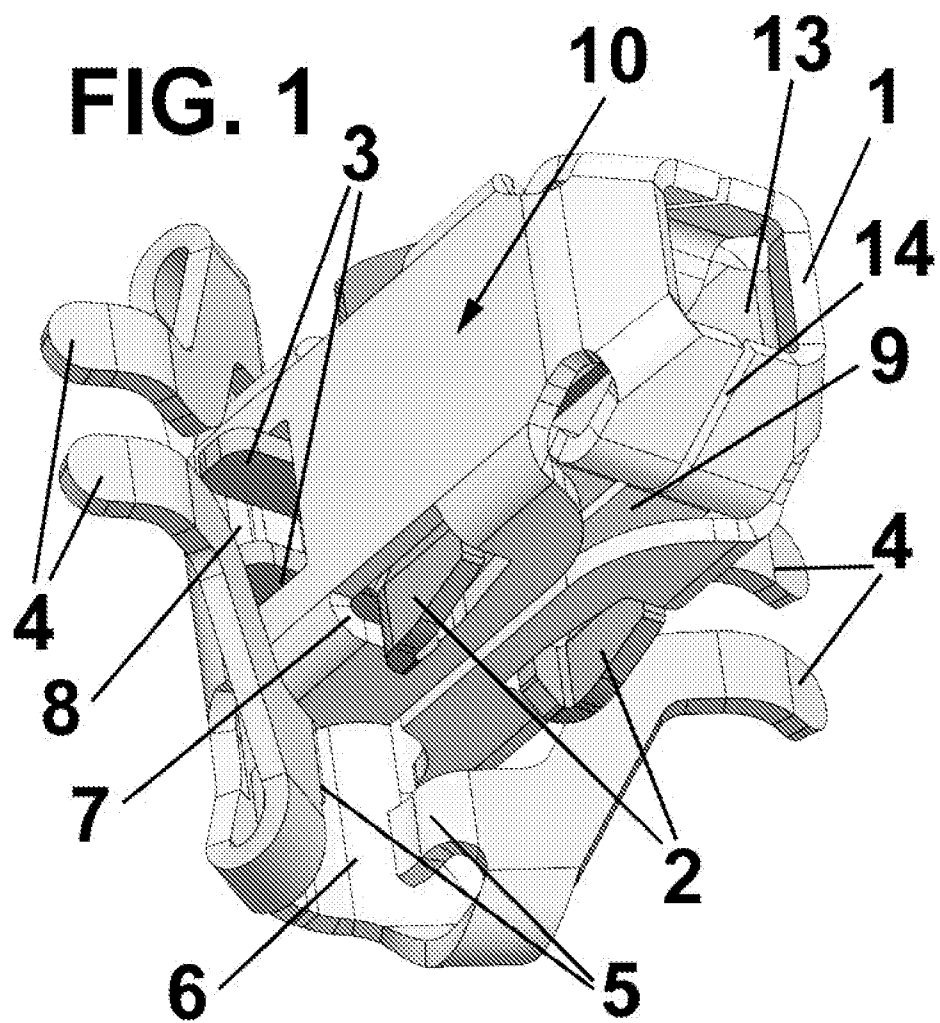


FIG. 2

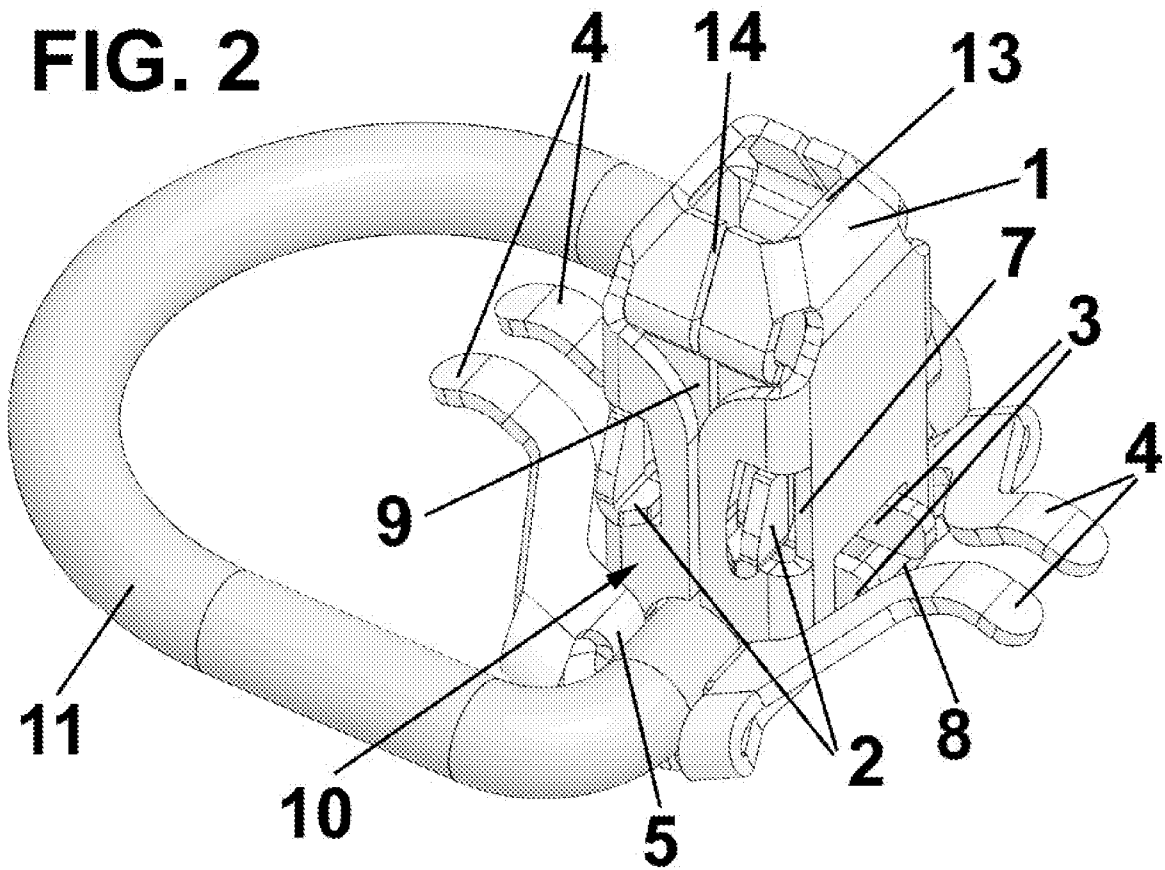


FIG. 3

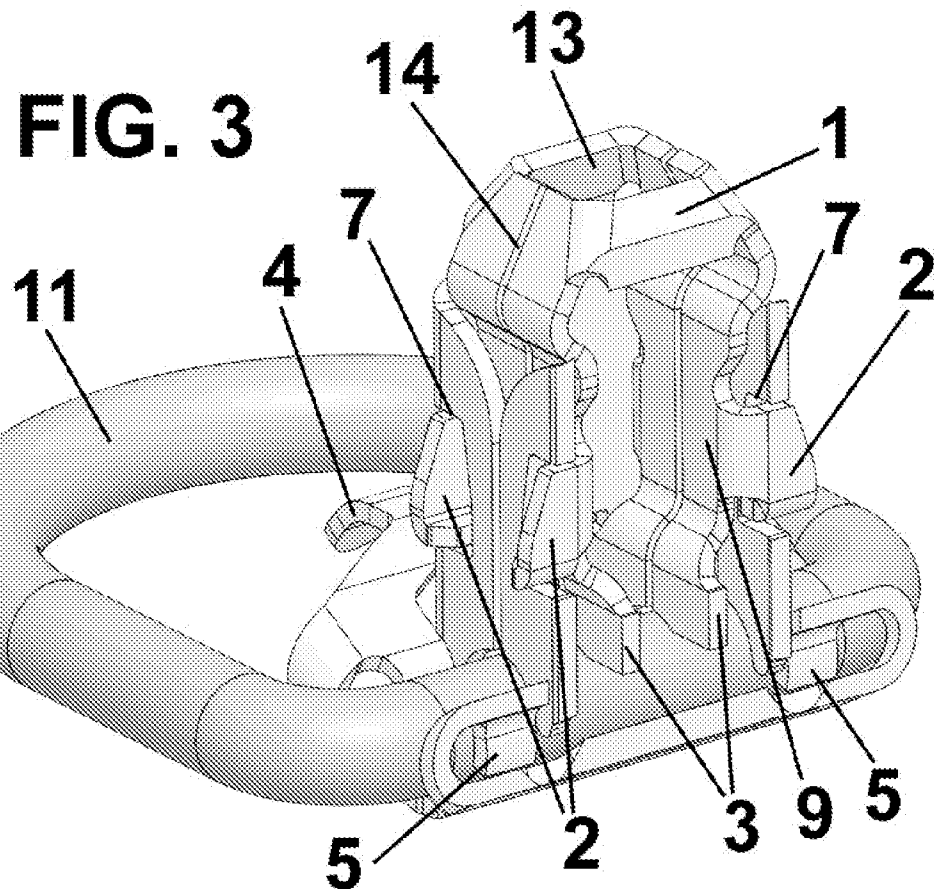


FIG. 4

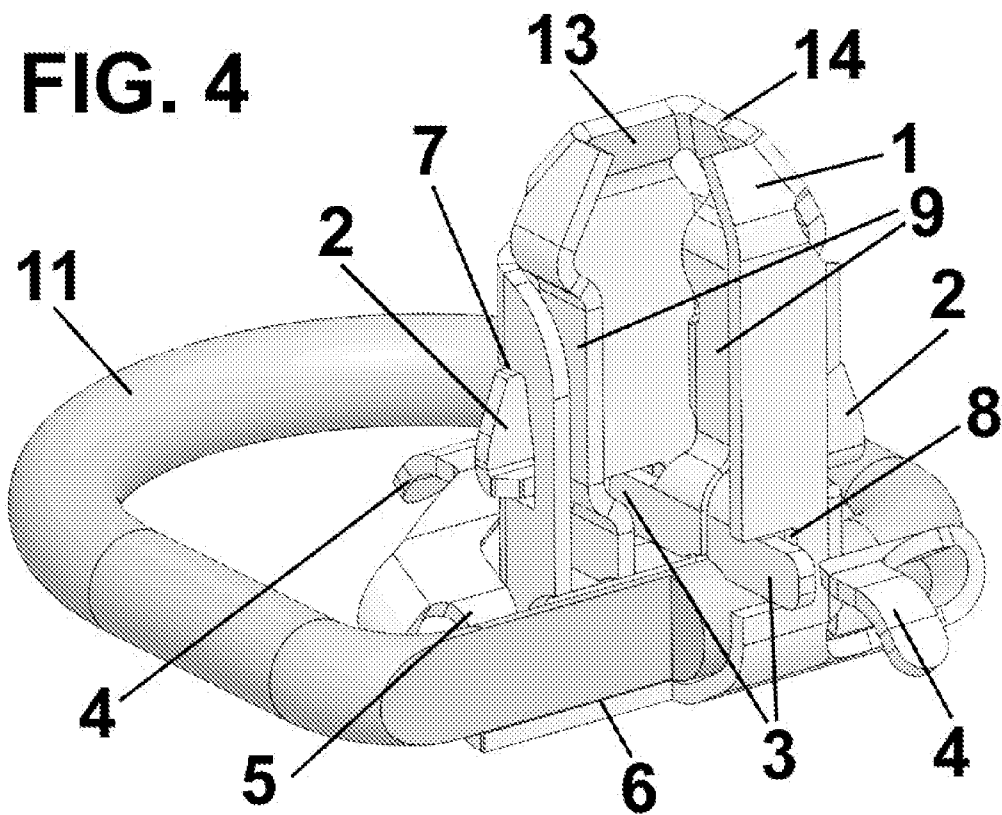
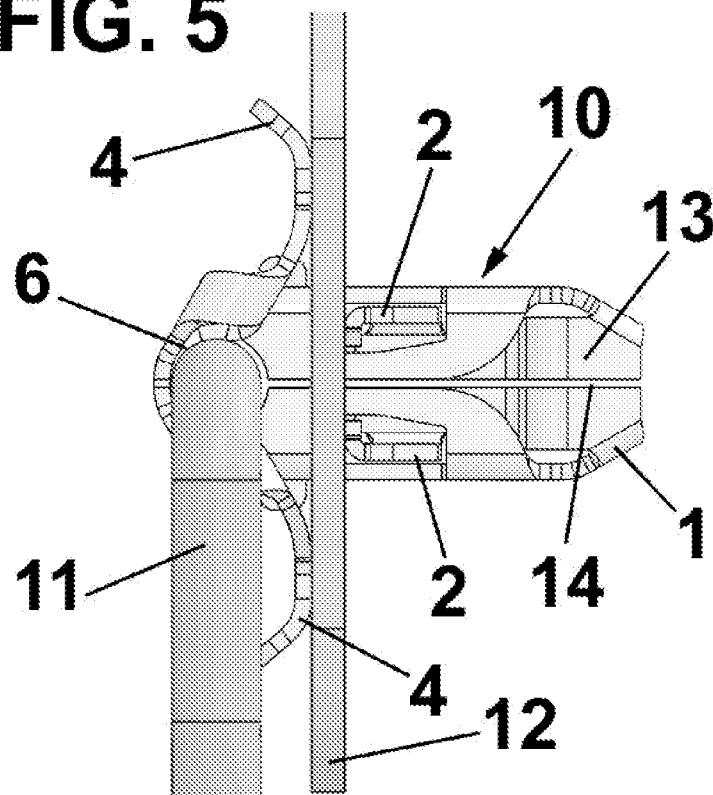
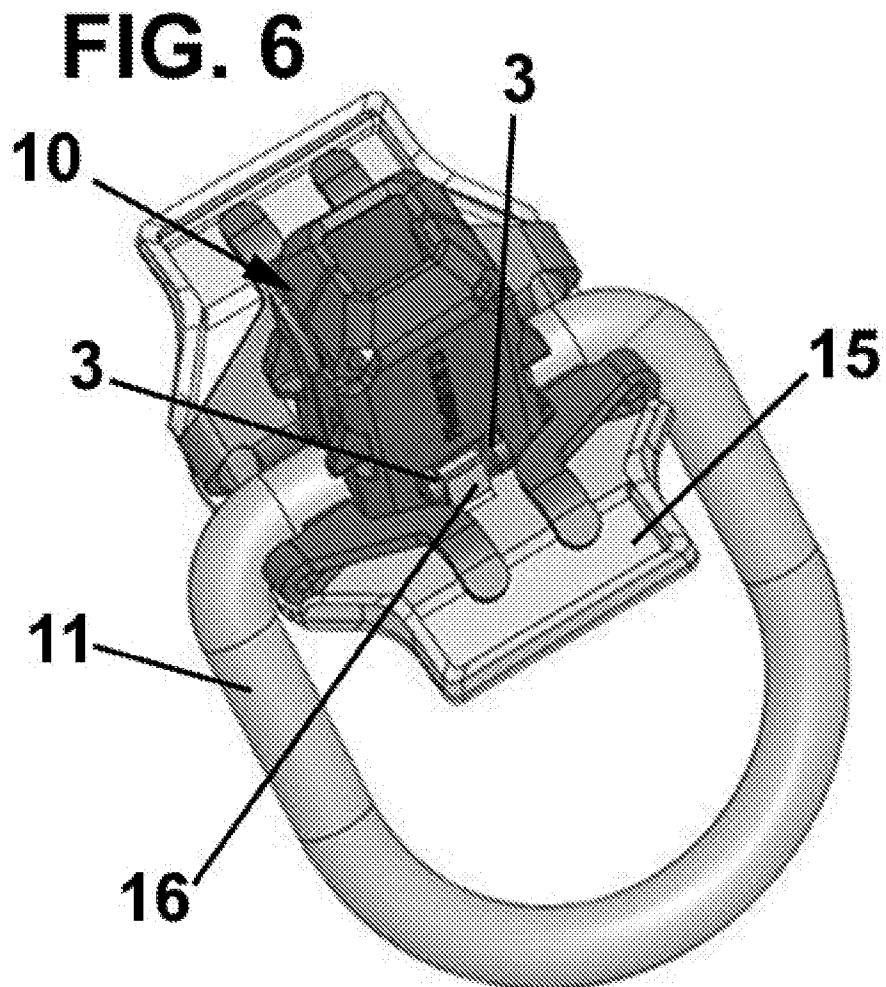


FIG. 5





INTERNATIONAL SEARCH REPORT

International application No
PCT/US2019/060178

A. CLASSIFICATION OF SUBJECT MATTER
INV. B60P7/08
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B60P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 8 794 886 B1 (NETT MICHAEL J [US] ET AL) 5 August 2014 (2014-08-05) column 8, line 16 - line 45; figures 5-8 -----	1
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A	DE 10 2017 209502 A1 (VOLKSWAGEN AG [DE]) 6 December 2018 (2018-12-06) figures 1-6 -----	1
A	EP 3 323 675 A1 (ROLFO SPA [IT]) 23 May 2018 (2018-05-23) figures 1-6 -----	1



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

25 March 2020

Date of mailing of the international search report

07/04/2020

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

van der Bijl, Samuel

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2019/060178

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