



Title of Invention

Your Ref: - XYZ45366

Our Ref: ECL1xxx_Project Code

Date:

(vvvv-mm-dd)

Summary of Identified References (Patentability Search)

A. Key Features for the invention:

The broad key features are prepared based on the details of the invention and information provided by the client. The analysis of the references has been done based on one or more features overlapping with the key features of the invention to form a relevant prior art.

Key Features of the Invention Based on Information provided by the Client

Sr. No.	Key Features
KF1	This invention discloses a device (bucklebond device) for detecting the status of a seat-belt (fastened or not) and sending the status to a mobile-device/application.
KF2	The device determines whether someone has left a child in the car by comparing the status of the buckle against a geo-distance threshold/range between the device and the mobile-device.
KF3	The device (bucklebond device) can be retrofitted/installed for existing seat belts.

B. Relevant Patent Citations:

Most relevant up to 6-7 results are mapped based on the key feature of the invention/ disclosure and/or the information provided by the client OR as extracted by the team. The relevant text of the patent citation is highlighted with color to support the mapping based on invention/ disclosure and information.

Sr. No.	Citation No.	Title	Publication Date	INPADOC Family Members (Link)
1.	US7753410B2	Tactical Seatbelt Quick Release System	2010-07-13	Link
	<p><u>Searcher's Comment:</u> This mapped citation discloses a tactical quick release seatbelt mechanism that attaches as an after-market enhancement to a pre-existing factory installed seatbelt. The mapped citation also discloses.....</p> <p><u>Relevant Excerpts:</u></p>			

Relevant text is color mapped for easy understanding and quick analysis along with searcher's comments

A tactical quick release seatbelt mechanism that attaches as a pre-existing factory installed seatbelt. **The tactical quick release mechanism expedites exit from a factory-installed 3-point seatbelt, particularly in emergency situations.** The tactical quick release allows tactical users such as law enforcement, military personnel, drug enforcement personnel, Homeland Security personnel, etc. to exit a vehicle quickly, without delay or snag of tactical equipment (e.g. weapons, communications backpack, etc.) on the 3-point seatbelt, and without the need to take their eye off of a given target by looking down for the seatbelt release button. **The quick release mechanism inherently provides some extension to the length of the factory installed seatbelt, providing that much more flexibility and maneuverability for the occupant-particularly an occupant that is forward-leaning in the seat because of their wearing a backpack or similar tactical equipment while seated in the vehicle.**

In accordance with disclosed embodiments, a quick release for a factory-installed vehicular seatbelt comprising a male seatbelt latch adapted for insertion into a factory-installed releasable latch connector. A latch adapter is adapted to capture a factory-installed male seatbelt latch. **A quick release mechanism between the male seatbelt latch and the latch adapter.** The quick release mechanism is adapted to actuate to quickly release the factory-installed 3-point vehicular seatbelt from fixed communication with the factory-installed releasable latch connector.

A method and apparatus to release a securing latch for a factory-installed 3-point vehicular seatbelt comprises pulling a lanyard away from a strap of the factory-installed 3-point vehicular seatbelt to correspondingly release a quick release mechanism securing a latch for the factory-installed 3-point vehicular from a releasable latch connector.

FIG. 2A shows a top view, and FIG. 2B shows a side view, of an embodiment of the quick release mechanism shown in FIG. 1 in more detail.

In particular, **FIGS. 2A and 2B show a main section 206 of the quick release mechanism 100, and a lanyard 108 anchored between a release trigger for the quick release mechanism 100 and an anchor device 210 anchored at an appropriate location on the factory-installed fabric seatbelt 134.** The quick release mechanism 100 contains a quick release device (i.e., a quick separation device).

The quick release mechanism 100 attaches to the factory-installed female seatbelt latch connector 135 using a male latch 200 having a shape suitable to be secured within the factory-installed female latch connector 135.

The quick release mechanism 100 includes an after-market male latch 200 at one end (which is separate from the factory installed male latch 132) and at the other end the releasable hook mechanism 204.

The lanyard 108 is attached to the releasable hook mechanism 204 to quickly open the releasable hook mechanism 204 when pulled. At the opposite end, the lanyard 108 is anchored

to an appropriate point on the fabric seatbelt 134 by means of the lanyard anchor device 210. In disclosed

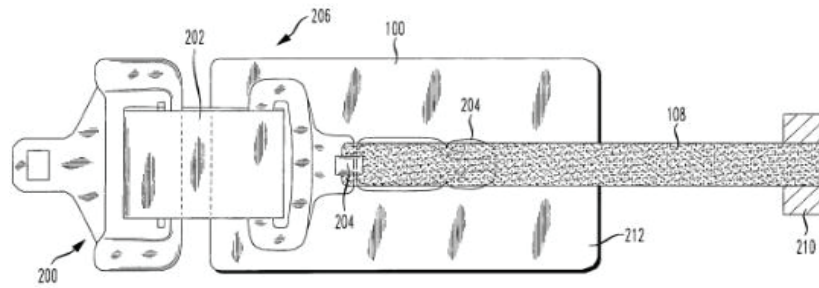


FIG. 2A

Claims:

1. A quick release for a factory-installed 3-point vehicular seatbelt, said seatbelt including a lap belt portion and a shoulder belt portion, comprising:

a male seatbelt latch adapted for insertion into a factory-installed releasable latch connector;

a latch adapter adapted to capture a factory-installed male seatbelt latch;

a quick release mechanism between said male seatbelt latch and said latch adapter; and

a lanyard, said lanyard having a first end connected to said quick release mechanism and a second end anchored to said shoulder belt portion of said factory-installed 3-point vehicular seatbelt;

wherein when a user grasps and pulls said lanyard, said quick release mechanism will actuate to quickly release said factory-installed 3-point vehicular seat belt.

[US7753410B2](#)

Tactical Seatbelt Quick Release System

2010-07-13

[Link](#)

Searcher's Comment: This mapped citation discloses a tactical quick release seatbelt mechanism that attaches as an after-market enhancement to a pre-existing factory installed seatbelt. The mapped citation also discloses.....

2. **Relevant Excerpts:**

A tactical quick release seatbelt mechanism that attaches as an after-market enhancement to a pre-existing factory installed seatbelt. **The tactical quick release seatbelt mechanism expedites exit from a factory-installed 3-point seatbelt, particularly in an emergency situation.** The tactical quick release allows tactical users such as law enforcement, military personnel, drug enforcement personnel, Homeland Security personnel, etc. to exit a vehicle quickly, without delay or snag of tactical equipment (e.g., weapons, communications backpack,

etc.) on the 3-point seatbelt, and without the need to take their eye off of a given target by looking down for the seatbelt release button. **The quick release mechanism inherently provides some extension to the length of the factory installed seatbelt, providing that much more flexibility and maneuverability for the occupant-particularly an occupant that is forward-leaning in the seat because of their wearing a backpack or similar tactical equipment while seated in the vehicle.**

In accordance with disclosed embodiments, a quick release for a factory-installed vehicular seatbelt comprising a male seatbelt latch adapted for insertion into a factory-installed releasable latch connector. A latch adapter is adapted to capture a factory-installed male seatbelt latch. **A quick release mechanism between the male seatbelt latch and the latch adapter.** The quick release mechanism is adapted to actuate to quickly release the factory-installed 3-point vehicular seatbelt from fixed communication with the factory-installed releasable latch connector.

A method and apparatus to release a securing latch for a factory-installed 3-point vehicular seatbelt comprises pulling a lanyard away from a strap of the factory-installed 3-point vehicular seatbelt to correspondingly release a quick release mechanism securing a latch for the factory-installed 3-point vehicular from a releasable latch connector.

FIG. 2A shows a top view, and FIG. 2B shows a side view, of an embodiment of the quick release mechanism shown in FIG. 1 in more detail.

In particular, **FIGS. 2A and 2B show a main section 206 of the quick release mechanism 100, and a lanyard 108 anchored between a release trigger for the quick release mechanism 100 and an anchor device 210 anchored at an appropriate location on the factory-installed fabric seatbelt 134.** The quick release mechanism 100 contains a quick release device (i.e., a quick separation device).

The quick release mechanism 100 attaches to the factory-installed female seatbelt latch connector 135 using a male latch 200 having a shape suitable to be secured within the factory-installed female latch connector 135.

The quick release mechanism 100 includes an after-market male latch 200 at one end (which is separate from the factory installed male latch 132) and at the other end the releasable hook mechanism 204.

The lanyard 108 is attached to the releasable hook mechanism 204 to quickly open the releasable hook mechanism 204 when pulled. At the opposite end, the lanyard 108 is anchored to an appropriate point on the fabric seatbelt 134 by means of the lanyard anchor device 210. In disclosed

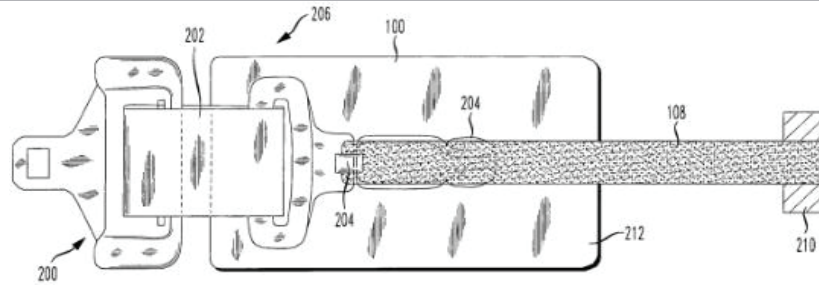


FIG. 2A

Claims:

1. A quick release for a factory-installed 3-point vehicular seatbelt, said seatbelt including a lap belt portion and a shoulder belt portion, comprising:

a male seatbelt latch adapted for insertion into a factory-installed releasable latch connector;

a latch adapter adapted to capture a factory-installed male seatbelt latch;

a quick release mechanism between said male seatbelt latch and said latch adapter; and

a lanyard, said lanyard having a first end connected to said quick release mechanism and a second end anchored to said shoulder belt portion of said factory-installed 3-point vehicular seatbelt;

wherein when a user grasps and pulls said lanyard, said quick release mechanism will actuate to quickly release said factory-installed 3-point vehicular seat belt.

[US7753410B2](#)

Tactical Seatbelt Quick
Release System

2010-07-13

[Link](#)

Searcher's Comment: This mapped citation discloses a tactical quick release seatbelt mechanism that attaches as an after-market enhancement to a pre-existing factory installed seatbelt. The mapped citation also discloses.....

Relevant Excerpts:

3. A tactical quick release seatbelt mechanism that attaches as an after-market enhancement to a pre-existing factory installed seatbelt. **The tactical quick release seatbelt mechanism expedites exit from a factory-installed 3-point seatbelt, particularly in an emergency situation.** The tactical quick release allows tactical users such as law enforcement, military personnel, drug enforcement personnel, Homeland Security personnel, etc. to exit a vehicle quickly, without delay or snag of tactical equipment (e.g., weapons, communications backpack, etc.) on the 3-point seatbelt, and without the need to take their eye of a given target by looking down for the seatbelt release button. **The quick release mechanism inherently provides some**

extension to the length of the factory installed seatbelt, providing that much more flexibility and maneuverability for the occupant-particularly an occupant that is forward-leaning in the seat because of their wearing a backpack or similar tactical equipment while seated in the vehicle.

In accordance with disclosed embodiments, a quick release for a factory-installed vehicular seatbelt comprising a male seatbelt latch adapted for insertion into a factory-installed releasable latch connector. A latch adapter is adapted to capture a factory-installed male seatbelt latch. **A quick release mechanism between the male seatbelt latch and the latch adapter.** The quick release mechanism is adapted to actuate to quickly release the factory-installed 3-point vehicular seatbelt from fixed communication with the factory-installed releasable latch connector.

A method and apparatus to release a securing latch for a factory-installed 3-point vehicular seatbelt comprises pulling a lanyard away from a strap of the factory-installed 3-point vehicular seatbelt to correspondingly release a quick release mechanism securing a latch for the factory-installed 3-point vehicular from a releasable latch connector.

FIG. 2A shows a top view, and FIG. 2B shows a side view, of an embodiment of the quick release mechanism shown in FIG. 1 in more detail.

In particular, **FIGS. 2A and 2B show a main section 206 of the quick release mechanism 100, and a lanyard 108 anchored between a release trigger for the quick release mechanism 100 and an anchor device 210 anchored at an appropriate location on the factory-installed fabric seatbelt 134.** The quick release mechanism 100 contains a quick release device (i.e., a quick separation device).

The quick release mechanism 100 attaches to the factory-installed female seatbelt latch connector 135 using a male latch 200 having a shape suitable to be secured within the factory-installed female latch connector 135.

The quick release mechanism 100 includes an after-market male latch 200 at one end (which is separate from the factory installed male latch 132) and at the other end the releasable hook mechanism 204.

The lanyard 108 is attached to the releasable hook mechanism 204 to quickly open the releasable hook mechanism 204 when pulled. At the opposite end, the lanyard 108 is anchored to an appropriate point on the fabric seatbelt 134 by means of the lanyard anchor device 210. In disclosed

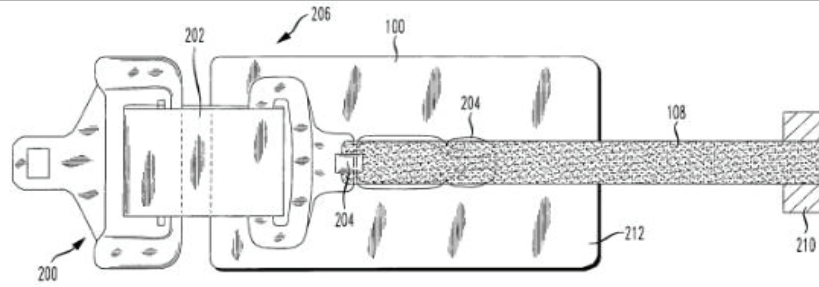


FIG. 2A

Claims:

1. A quick release for a factory-installed 3-point vehicular seatbelt, said seatbelt including a lap belt portion and a shoulder belt portion, comprising:

a male seatbelt latch adapted for insertion into a factory-installed releasable latch connector;

a latch adapter adapted to capture a factory-installed male seatbelt latch;

a quick release mechanism between said male seatbelt latch and said latch adapter; and

a lanyard, said lanyard having a first end connected to said quick release mechanism and a second end anchored to said shoulder belt portion of said factory-installed 3-point vehicular seatbelt;

wherein when a user grasps and pulls said lanyard, said quick release mechanism will actuate to quickly release said factory-installed 3-point vehicular seat belt.

C. Relevant Non-Patent Citations:

Sr. No.	Title	Author/Company(s)	Publication Date
1.	<p>2015 Dodge Challenger: Car Seat Check</p> <p><u>Searcher's Comment:</u> This mapped citation discloses a The mapped citation also discloses.....</p> <p><u>Relevant Excerpts:</u></p> <p>When it comes to child-safety seats, the 2015 Dodge Challenger is a car that allows parents to have their cake and eat it, too. Not only does this muscle car offer a 305-horsepower, 3.6-liter V-6 engine for starters but also its roomy backseat can fit most styles of car seats. We were also able to fit three across the backseat.</p> <p>Not everything is perfect with the Challenger and car seats, however. In our tests, we found that a rear-facing infant seat, which takes up a lot of backseat space, doesn't work well with the front passenger seat. The front seat is designed to fold and slide forward for better backseat access, and then the seat has to be pushed all the way back to lock the seatback into place. From there, you can slide the seat forward to create more legroom for backseat passengers. However, the infant seat is so long that it prevents the front passenger seat from sliding back and locking into place.</p> <p>We tried to work around this setup, but ultimately decided that the Challenger and infant seats don't mix. Oddly, we didn't run into this problem when we tested the 2012 Challenger. If you have an infant, use a rear-facing convertible seat in the Challenger instead, which thankfully doesn't take up as much legroom as the infant seat. In our photo, we used the infant seat to illustrate that three average-sized car seats fit across the backseat.</p> <p>For the Car Seat Check, we use a Graco SnugRide Classic Connect 30 infant-safety seat, a Britax Marathon convertible seat and Graco TurboBooster seat. The front seats are adjusted for a 6-foot driver and a 5-foot-8 passenger. The three child seats are installed in the second row. The booster seat sits behind the driver's seat, and the infant and convertible seats are installed behind the front passenger seat.</p> <p>We also install the forward-facing convertible in the second row's middle seat with the booster and infant seat in the outboard seats to see if three car seats will fit; a child sitting in the booster seat must be able to reach the seat belt buckle. If there's a third row, we install the booster seat and a forward-facing convertible. To learn more about how we conduct our Car Seat Checks, go here.</p> <p>Parents should also remember that they can use the Latch system or a seat belt to install a car</p>	Jennifer Newman	2014-09-25

seat, and that Latch anchors have a weight limit of 65 pounds, including the weight of the child and the weight of the seat itself.



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MNOP...

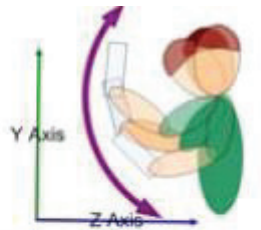
2007-07-14

Searcher's Comment: This mapped citation discloses a The mapped citation also discloses.....

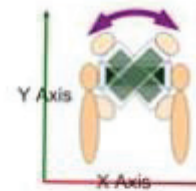
Relevant Excerpts:

In our previous work [2, 4] , ----- . **The tracking method ----- movement position.** With ----- layout space.

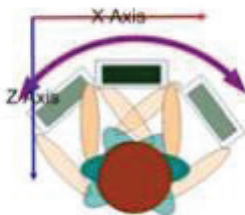
2.



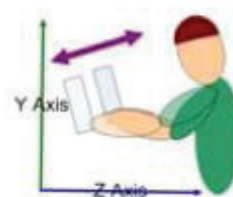
(a) Pitch.



(b) Roll.



(c) Yaw.



(d) Forward / backward.

D. List of Other Relevant Citations (In specific Cases)

Note: The citations given under this section are relevant but these citations are not provided with relevant text due to time constraint.

1.) Patent citations:

Sr. No.	Publication No.	Title	Publication Date	INPADOC Family Members
1.	US7753410B2	Tactical Seatbelt Quick Release System	2010-07-13	Link
2.	US7753410B2	Tactical Seatbelt Quick Release System	2010-07-13	Link
3.	US7753410B2	Tactical Seatbelt Quick Release System	2010-07-13	Link
4.	US7753410B2	Tactical Seatbelt Quick Release System	2010-07-13	Link
5.	US7753410B2	Tactical Seatbelt Quick Release System	2010-07-13	Link

2.) Non-Patent citations:

Sr. No.	Title	Author/Company(s)	Publication Date
1.	2015 Dodge Challenger: Car Seat Check	Google	2014-09-25
2.	2015 Dodge Challenger: Car Seat Check	Jennifer Newman	2014-09-25
3.	2015 Dodge Challenger: Car Seat Check	Google	2014-09-25

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F. Detailed Search Methodology

Phases	Steps	Phase Details
Understanding Development Phase	1	Reading the invention disclosure and developing understanding
	2	Key Features are identified based on the novel aspect of the product/Client's requirement.
	3	Relevant key words and their logical variations are determined based on the key features and the technology domain of the Invention/disclosure.
First Pass Automation Phase	4	Using our proprietary, innovative technology backed by Automation + NLP + Big Data, we perform a first pass automated search through “Novelty Checker” module which provides a set of first pass results and gives us a good start to the search acting as a base for manual searchers. The details provided by this module helps in saving lot of time that normally goes in understanding and initiation of project.
Keyword Based Search	5	Different key strings with variable scope are formed and a search is conducted on patent databases such as Orbit, TI, PAJ, PATENTLENS, CIPO, CNPAT, ESPACENET, TIPO, SIPO, INPADOC, etc. with global coverage.
Classification based Search	6	Relevant IPC, CPC, ECLA and US patent classes are identified.
	7	Independent full classification (IPC, CPC, ECLA and US) search strings were formed and the results were analyzed.
Assignee Based Search	8	Assignees of the relevant patents are identified and a search with various scope (combination with keywords, classes etc.) is conducted to identify relevant patents associated with these assignees.
Inventor Based Search	9	Inventors of the relevant patents are identified and a search with various scope (combination with keywords, classes etc.) is conducted to identify relevant patents associated with these inventors.

Combination search	10	Narrow keywords and broad IPC, CPC, ECLA and US or all class combination key strings were formed.
	11	Broad keywords and narrow IPC, CPC, ECLA and US or all class combination key strings were formed.
	12	Various Boolean searching options are used to combine two or more search strings or search options.
Citation Analysis	13	Forward and backward citations of the relevant patents are analyzed to identify any new relevant patents/published patent applications.
Non-Patent Literature Search	14	Non-patent literature search is conducted using various keyword combination in different databases/search engines such as Google, Google Scholars, Google Book, IP.com, IEEE, STN, Engineering Village, Springerlink, Citeseer, Science Direct, Clusty, PCworld, etc. <i>(The list is suggestive)</i>
	15	The key strings used for identifying NPL are incorporated into the search report in the desired format.
Report Making	16	All the identified relevant patent and non-patent citations are analyzed and mapped with color mapping in accordance with the relevant texts and are provided in the report in the desired format.
	17	The list of keywords, search strategies, assignees, inventors, classes used in the search process are incorporated into the report
	18	Key feature analysis to be provided (Optional)
Quality Assurance	19	Third Eye (verification of the project report) has to be done by the VP before delivering the search report with pdf references.
Report Delivery	20	<u>A formal report is sent to the client with the details of the references and their electronic copies. Machine translated copies would be provided for Non-English references.</u>

About TT Consultants

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Dr. Nirmal Basi, CEO

Dr. Nirmal S. Basi has a PhD in Biochemistry and is an entrepreneur, inventor, as well being a registered patent agent for the United States Patent and Trademark Office (USPTO).

He has also worked as a Patent Examiner for over 13 years. He is assisting clients across the globe in their IP research related matters and he is redefining the way IP Research and Analytics are performed.



Komal Sharma Talwar, Founder

A serial entrepreneur in the field of patents and Founder and Director of a leading International Intellectual Property, Technology Consulting, and Analytics Firm – TT Consultants. She is also a co-founder of XLSCOUT – a Product search and analytics tool having the world's largest and most intelligent technology database.



Jitin Talwar, Founder

Experienced Patent Attorney, globally recognized entrepreneur and technology leader led early adoption of AI/ML and Deep Learning that led to founding of multiple start-ups including XLSCOUT.

He is Leading the use of Artificial Intelligence for Innovation, Machine Learning for Ideation and Blockchain in Innovation management.

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With automation involved in our manual processes, our teams get valuable insights into the domain very quickly and the head-start provided by automation allows our talented teams to devote more time to the manual investigation which, in turn, lead to a thorough search.

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